

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

GOOGLE LLC,
Petitioner

v.

WILDSEED MOBILE, LLC,
Patent Owner

Case IPR2023-00248
U.S. Patent No. 7,376,414

PATENT OWNER'S RESPONSE

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Patent Trial and Appeal Board
U.S. Patent and Trademark Office
P.O. Box 1450
Alexandria, VA 22313-1450

TABLE OF CONTENTS

I.	INTRODUCTION	1
II.	THE '414 PATENT	1
A.	Summary	1
B.	Person of Ordinary Skill in the Art (POSITA)	3
C.	Claim Construction	3
1.	“[I]nformation taken ... from a message” requires information that was actually in a message (limitations 1.1.2, 9.4, 12.3.2, 14.3.2).	3
III.	THE PETITION FAILS TO DEMONSTRATE THE OBVIOUSNESS OF ANY CHALLENGED CLAIM.	15
A.	Summaries of the Asserted References	15
1.	Frerichs	15
2.	Kauffman	16
3.	Kawasaki	16
a.	Kawasaki requires artificial intelligence neural networks.	17
B.	Independent Claims 1, 9, 12, and 14 are not rendered obvious by Petitioner’s asserted combination.	20
1.	The cited art does not disclose taking information from a message that satisfies the claims (limitations 1.1.2-1.1.3, 9.4, 12.3.2-12.3.3, 14.3.2-14.3.3).	20
a.	Kawasaki’s clients do not send information taken from messages.	21
1.	Kawasaki uses data derived, not taken, from messages.	21
2.	Kawasaki does not disclose clients transmitting the required information to servers (<i>e.g.</i> , limitation 1.1.2).	24
b.	Kawasaki does not disclose or analyze the type of messages that the claims require (<i>e.g.</i> , limitations 1.1.2, 1.1.3).	26

2.	The cited art does not disclose selecting an ad based at least in part on the information that a client takes from a message and sends to a server (limitations 1.2, 9.5, 12.4, 14.4).	28
3.	The cited art does not disclose playing content on an end user device—let alone a cellular device—while caching other content (limitations 1.3.1-1.3.3, 9.6.1-3, 12.5.1-3, 14.6.1-3).	29
a.	In Kauffman, the device that plays content does not cache.	30
b.	Petitioner’s hypothetical combination of Kauffman with a cell phone would cache content upstream of the cell phone (<i>e.g.</i> , limitation 1.3.2).....	33
4.	Petitioner fails to establish a motivation to combine the applied references.	34
a.	A POSITA would not have been motivated to combine Kawasaki’s artificial intelligence neural networks with a cell phone, which was not technologically feasible at the time of the ’414 patent.....	35
1.	Petitioner fails to address the fact that its proposed combination requires a cell phone to run a neural network.....	35
2.	Significant technical challenges prohibited cell phones from running neural networks in 2001.	36
3.	Cell phones did not run neural networks and therefore were not suitable clients for Kawasaki.	37
4.	Any benefits of combining Kawasaki and Frerichs could be achieved without the unnecessary and unprecedented feat of running a neural network on a cell phone.	41
5.	Any expectations of success apply to powerful computers, not cell phones.	42
b.	A POSITA would not have been motivated to	

combine Frerichs’ audio cell phone client with Kauffman’s caching inserter for streaming video.	46
1. The sole benefit that Petitioner refers to— playing from a cache without further network delay—is a problem that Kauffman creates but does not acknowledge or solve.	46
2. Any benefits of combining Kauffman and Frerichs are achievable without caching at a client device, let alone a client that plays content.	50
3. Any benefits or expectations of success from combining Kauffman and Frerichs apply, if at all, to client devices that are more powerful than cell phones.	52
c. A POSITA would not have been motivated to combine all three references because such a combination would pose even more challenges than either combination alone.....	56
C. Dependent Claims	57
1. Radio station data is not taken from a message (Claims 2, 3, 10, and 13).....	57
2. The recorded ad is not determined using information taken from a message (Claims 4 and 11).	58
3. The prior art does not disclose a cell phone that receives a streaming ad while recording another stream of content (Claim 7).	59
IV. CONCLUSION.....	64

PATENT OWNER'S EXHIBIT LIST

Exhibit No.	Description
2001	<i>Intentionally Left Blank</i>
2002	Case No. 3:22-cv-04928, Plaintiff Wildseed Mobile, LLC'S Patent L.R. 3-1 Disclosure of Asserted Claims and Infringement Contentions
2003	U.S. Patent No. 7,736,414 Invalidity Contentions
2004	<i>Intentionally Left Blank</i>
2005	<i>Intentionally Left Blank</i>
2006	<i>Intentionally Left Blank</i>
2007	U.S. Patent No. 6,647,257 to Owensby
2008	Declaration of Zack Higgins In Support Of <i>Pro Hac Vice</i> Admission Under 37 C.F.R. § 42.10(c)
2009	Declaration of Dr. Sam Malek
2010	<i>Curriculum Vitae</i> of Dr. Sam Malek
2011	Transcript of the Deposition of Henry H. Houh, Ph.D., August 23, 2023
2012	Abstract from Zell et al., "SNNS (Stuttgart Neural Network Simulator)," <i>Neural Network Simulation Environments, The Kluwer International Series in Engineering and Computer Science</i> , Vol. 254; pp. 165-186 (1994)

Exhibit No.	Description
2013	Matney, L., “Google introduces Neural Networks API in developer preview of Android 8.1,” TechCrunch, October 25, 2017, accessible at https://techcrunch.com/2017/10/25/google-introduces-neural-networks-api-in-developer-preview-of-android-8-1/#:~:text=Google%20introduces%20Neural%20Networks%20API%20in%20developer%20preview%20of%20Android%208.1,-Lucas%20Matney%40lucasmtny (last accessed September 13, 2023)
2014	“PDA Review: Ericsson R380 Smartphone,” Geek.com, November 24, 2000, archived by the Internet Archive on February 16, 2001, accessible at https://web.archive.org/web/20010216041714/http://www.geek.com/hwswrev/pda/ericr380/ (last accessed September 13, 2023)
2015	“About Us,” vlingo, archived by the Internet Archive on October 17, 2007, accessible at https://web.archive.org/web/20071017040005/http://www.vlingo.com/management.html (last accessed September 13, 2023)
2016	“Technology,” vlingo, archived by the Internet Archive on October 18, 2007, accessible at https://web.archive.org/web/20071018021518/http://www.vlingo.com/technology.html (last accessed September 13, 2023)
2017	Graham, F., “Vlingo on the iPhone: Speak and spell,” CNET, March 10, 2010, accessible at https://www.cnet.com/tech/mobile/vlingo-on-the-iphone-speak-and-spell/ (last accessed September 13, 2023)
2018	Nokia 9210 Communicator pictures, GSMArena.com, accessible at https://www.gsmarena.com/nokia_9210_communicator-pictures-210.php (last accessed September 13, 2023)

Exhibit No.	Description
2019	Excerpts from “Binary Classification using Neural Networks,” Kaggle.com, accessible at https://www.kaggle.com/code/karthik7395/binary-classification-using-neural-networks/notebook (last accessed September 14, 2023)
2020	Battersby, J., “Vlingo for iPhone,” Macworld.com, May 24, 2010, accessible at https://www.macworld.com/article/205600/vlingo-2.html (last accessed September 13, 2023)
2021	Austen, I., “NEWS WATCH; A New Blackberry Pager Allows Longer E-Mail,” <i>The New York Times</i> , April 13, 2000, accessible at https://www.nytimes.com/2000/04/13/technology/news-watch-a-new-blackberry-pager-allows-longer-e-mail.html (last accessed September 13, 2023)
2022	“Blackberry RIM 957,” PCMag.com, May 21, 2002, accessible at https://www.pcmag.com/archive/blackberry-rim-957-25956 (last accessed September 13, 2023)
2023	Segan, S., “The Evolution of the BlackBerry, From 957 to Z10,” January 28, 2013, accessible at https://www.pcmag.com/news/the-evolution-of-the-blackberry-from-957-to-z10 (last accessed September 14, 2023)
2024	Orlowski, A., “Nokia 9210 Communicator - any good?,” <i>The Register</i> , August 14, 2001, accessible at https://www.theregister.com/2001/08/14/nokia_9210_communicator_any_good/ (last accessed September 13, 2023)
2025	Simonite, T., “Apple's 'Neural Network' Infuses the iPhone with AI Smarts,” <i>Wired</i> , September 13, 2017, accessible at https://www.wired.com/story/apples-neural-engine-infuses-the-iphone-with-ai-smarts/ (last accessed September 13, 2023)
2026	“RIM 957,” IT History Society, accessible at https://www.ithistory.org/db/hardware/research-motion-limited/rim-957 (last accessed September 13, 2023)

Exhibit No.	Description
2027	U.S. Patent No. 6,266,664 to Russell-Falla et al., issued July 24, 2001
2028	“What is SNNS?”, archived by the Internet Archive on November 22, 2001, accessible at https://web.archive.org/web/20011122181832/http://www-ra.informatik.uni-tuebingen.de/SNNS/announce.html (last accessed September 13, 2023)
2029	“Workstation,” Britannica, accessible at https://www.britannica.com/technology/workstation (last accessed September 13, 2023)
2030	“Desktop and Workstation PCs: What's the Difference?”, DBK, June 29, 2022, accessible at https://www.dbk.com/resources/desktop-vs-workstation/ (last accessed September 14, 2023)
2031	Gerencer, T., “Why Buy a Workstation vs. Desktop for Your Business,” HP Tech@Work, March 8, 2021, accessible at https://www.hp.com/us-en/shop/tech-takes/workstation-vs-desktop-business (last accessed September 14, 2023)

I. INTRODUCTION

Petitioner fails to meet its burden of proving that any challenged claim of U.S. Patent No. 7,376,414 (“the ’414 patent”) is unpatentable. Petitioner’s asserted combination fails to disclose or render obvious several limitations of the independent claims. Further, Petitioner ignores significant technical limitations of its proposed combination. A POSITA simply would not be motivated to make the proposed combination to arrive at the claimed invention. Accordingly, Patent Owner respectfully requests that the Board confirm the patentability of the challenged claims.

II. THE ’414 PATENT

A. Summary

The ’414 patent, entitled “Method and System for Inserting Advertisements Into Broadcast Content,” issued on May 20, 2008 and claims priority to U.S. Provisional Application No. 60/290,592, filed May 11, 2001. EX1001, [45], [54], [60].

The ’414 patent relates to targeting ads delivered to users who are streaming content on cellular telephones, and recording the streaming content for later playback while the ad plays. The ’414 patent notes that in the past, ads were selected based on generic viewer demographics. *Id.*, 1:33-47. The ’414 patent, on the other hand, takes a new and different approach: sending targeted ads to the individual user streaming the content on the cellular telephone by using information associated with

the user of the mobile device to determine an advertisement to play. *See, e.g., id.*, 1:51-2:27, 9:42-51; EX2009, ¶35.

The '414 patent discloses using various sources to generate information about a user for targeted ads. *See, e.g.,* EX1001, 9:48-10:24. For example, in one embodiment, the patent discloses selecting an ad based on information taken from a message sent to a first user by another user on a different mobile device, where the message identifies characteristics of the user of the first mobile device. *See id.*, 9:48-10:22. The server employs the user information, generated from the various sources, to determine which advertisements might be suitable for the mobile device user. *Id.*, 3:58-60, 9:24-27, 9:48-51, 11:34-37. The challenged independent claims specifically require that a source of this “information associated with a user of the cellular device” must be “taken ... from a message sent to the cellular device from another user of another cellular device.” *See, id.*, Claims 1, 9, 12, 14. Petitioner’s cited references, on the other hand, do not take information from other users’ messages, and do not record content on an end user device for later playback. EX2009, ¶36.

B. Person of Ordinary Skill in the Art (POSITA)

Patent Owner applies Petitioner's definition of a POSITA and level of ordinary skill for purposes of the Patent Owner Response. *See* Pet., 15-16¹; EX2009, ¶¶25-27.

C. Claim Construction

Patent Owner agrees with Petitioner that the terms of the challenged claims should be given their plain and ordinary meaning. Pet., 16. Further discussion regarding the plain meaning of certain claim limitations, however, is relevant to resolving the parties' dispute.

- 1. “[I]nformation taken ... from a message” requires information that was actually in a message (limitations 1.1.2, 9.4, 12.3.2, 14.3.2²).**

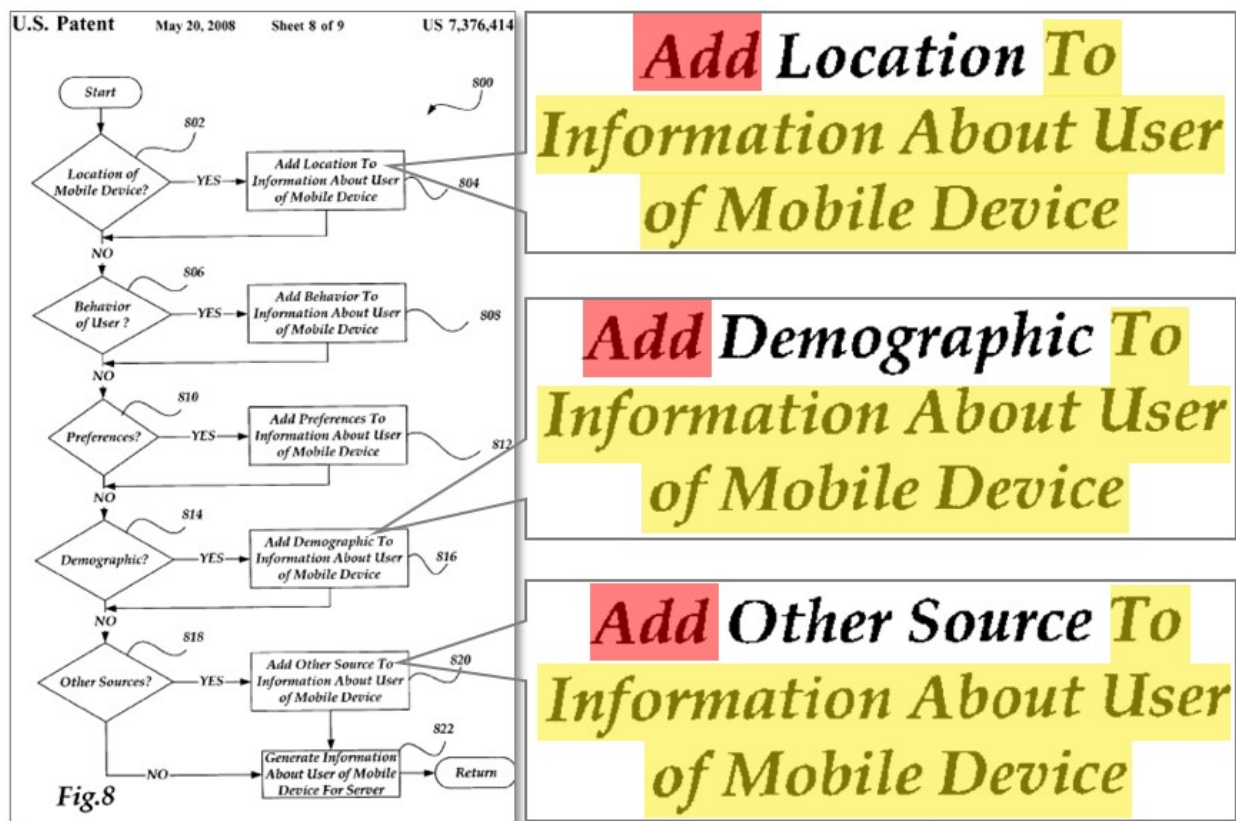
The plain meaning of the claim term “taken,” when interpreted in light of the specification and file history, requires using information that was in a message, not

¹ Petitioner incorrectly asserts that “the Patent’s earliest priority date is May 10, 2002.” Pet., 15. Patent Owner disagrees and believes the ’414 patent is entitled to a priority date of May 11, 2001, the filing date of U.S. Provisional Appl. No. 60/290,592. However, the Board need not decide this issue because none of the arguments depend on or would be affected by the priority date of the ’414 patent.

² For purposes of this Patent Owner Response, Patent Owner has adopted the claim limitation reference numbers used in the Petition.

merely data “derived” from a message, as Petitioner alleges. *See* Pet., 38; EX2009, ¶57.

The specification teaches directly using information that is in a message, as opposed to indirectly deriving information from a message where the derived information may or may not exist in the message. Figure 8 of the ’414 patent and accompanying discussion refer to testing for the presence of multiple types of data, and if a given type of data exists, then adding that actual data to information about a user. EX2009, ¶58.



EX1001, FIG. 8 (annotated).

Location data is the first type of data described; if location data exists, then it

is added to information about the user.

... a determination is made if the *location* of the mobile device is available. If true, the process advances to block 804 where the *location* is *added to information about the user* of the mobile device. The *location* may be *manually entered by the user* and/or *provided* from a *GPS*, assisted GPS, wireless signal triangulation, and the like, to determine the location of the user of the mobile device.

Id., 10:48-55³; EX2009, ¶59. Thus, if location data exists, that exact data—*e.g.*, the location data entered by the user or provided from GPS—is added to information about the user. Similarly, if demographic data exists, that exact data is added:

... a determination is made as to whether at least one *demographic* piece of *information* regarding the user is provided. If true, the process steps to block 816 where the *demographic information* is *added* to other *information regarding* the mobile device *user*.

EX1001, 11:5-9; EX2009, ¶60.

Likewise, data in (not merely “derived from”) messages from other users is also added to the information about the user. EX2009, ¶61. The ’414 patent expressly categorizes messages from other users as part of “other sources,” as depicted toward the bottom of Figure 8. EX1001, 10:18-23 (“Additionally, *other source* module 606 enables other sources to be used to provide information regarding the user, *e.g.*, a

³ Emphasis is added throughout unless otherwise noted.

message from another user of another mobile device that identifies characteristics of the current user of the mobile device.”). The actual data in a message from another user is added to information about the user:

... a determination is made as to whether *other sources* have provided *information* regarding the mobile device user...At decision block 818, ... the *other source information* is *added* to other *information* regarding the mobile device *user*.

Id., 11:10-18; EX2009, ¶61. When using information to select an ad (as claim 1(b) requires), the specification teaches using the actual data that was in a message:

... *information* about the user of the mobile device is provided. This process is expressed in the *discussion accompanying FIG. 8* ... The process flows to block 904 where the provided mobile device user’s *information* is asynchronously employed to *determine* at least one *advertisement* that could be of interest to the user of the mobile device.

EX1001, 11:31-37; EX2009, ¶62.

Dr. Houh’s opinion regarding the meaning of information “taken” from a message is based on his misreading of the ’414 patent specification. Specifically, he mistakenly believed the ’414 patent specification did not refer to taking actual data from a message, and therefore concluded that a POSITA would not understand the claim term “taken” to be limited to information that is actually in a message:

Q. ... let me ask you, your understanding of the ’414 patent *taking information from a message does not require* that you *actually extract*

something, content, data, from a message and send it to the server;
correct?

A. Again, *I don't believe the spec said that specifically or would require that. And thus, in the context of the spec, I'm not seeing how a POSITA would understand the claim phrase to be limited to information must be in the message* because the claim says what it says and provides *an example of user preferences* information.

EX2011, 46:19-47:10; *see also id.*, 44:3-16 (“*I recall nothing from the spec that discussed that the user preference or other information autonomously provided to the server has to be literally data that's literally in the message itself.*”); 46:1-5 (“*Even if it's required that it has to be a word literally in the message, which I don't see in the ['414] spec anywhere that that's the requirement of the information taken from a message ...*”); 175:22-176:8 (“*... I saw no such description like that about how to take information from a message in -- from the '414 specification.*”); 36:8-18; 38:17-39:10; 47:19-48:9 (similar); EX2009, ¶63.

Dr. Houh therefore reached the incorrect conclusion that merely deriving data from messages is in the scope of the claims, pointing to the '414 specification's discussion of user preferences. EX2011, 173:9-19 (alleging that “*deriving a profile from a message*” is “*an example of how to take information from something else.*”); EX2009, ¶64.

But, the '414 patent specification does not state that everything in user preferences is data taken from a message. Rather, the specification teaches that user preferences can include data that was in a message, and can also include other data that was not in a message, including information derived from other data, such as determinations made using behaviors or answers to surveys.

Demographic module 612 enables the demographics of a user to be *determined*. For example, a user's age, income and spending habits may be manually entered by the user or *determined by the user's answers* to various questionnaires or surveys presented by demographic module 612.

Behavior module 608 enables the user's behavior in using the mobile device to be *determined* such as, but not limited to, playing video games, listening to radio station, viewing television channels, participating in chat rooms, and communicating SMS messages. The *type and frequency of behaviors* can be *determined* by behavior module 608.

EX1001, 10:7-18; *see also id.*, 11:31-37; EX2009, ¶65.

The specification expressly teaches that taking the data from a message means using the actual data that was in a message. It does not refer to data as “taken” from a message if that data is merely derived from a message. EX1001, 10:7-18; *see also id.*, 11:31-37. In sum, the specification provides examples that distinguish data taken from a message and other information that is derived; the claims recite the former;

EX2009, ¶66.

The file history reinforces that information “taken” from a message means information that was actually in the message. *Id.*, ¶67. The Examiner understood the claim limitation to require data that was in a message—not merely data “derived” from a message. The Institution Decision referred to disclaimers. DI, 18-19. To be clear, Patent Owner is not suggesting there was any disclaimer. There is no broader claim construction that the file history narrowed. Instead, the Examiner’s rejections and allowance demonstrates that there never was a broader claim construction. The Examiner rejected pending claims based on art that disclosed selecting ads using a profile that was derived from messages. After the requirement to “take” information from messages was added to the claims—and no other limitations were added—the Examiner allowed the claims.

In particular, the Examiner rejected the claims over art that discloses selecting ads based on a profile that was built using messages, and art that discloses messages received from other users. EX1002, 67-83. However, after argument and amendment by the Applicant, distinguishing the cited art, the Examiner allowed the claims. *Id.*, 30-37, 50-58. Significantly, the Examiner allowed the claims after analyzing and citing specific passages from Owensby (EX2007). *See* EX1002, 30-37, 67-83. Owensby relates to advertising in streaming media and discloses selecting ads using

data derived from messages, including by using a profile that includes data derived from messages. EX2009, ¶68.

Notably, the Examiner explained in the reasons for allowance that Owensby does not disclose selecting an ad based on *information taken from a message*:

Owensby discloses the server determines a specific *advertisement* to play *based on* the user information from the cellular device in order to address the *user's interest*.

However, Sass in view of Owensby *do not disclose*: providing to a server, by a cellular device, *information taken* by the cellular device *from a message* sent to the cellular device from another user of another cellular device . . .

. . .

However, the prior art in combination *do not meet the requirements of the claimed invention*, which requires: ‘providing information associated with a user of the cellular device to a server, the *information* taken by the cellular device *from a message* sent to the cellular device from another user of another cellular device, the message identifying characteristics of the user of the cellular device; and receiving from the server an *advertisement* to the cellular device *based on the provided informaiton* [sic]’.

EX1002, 36-37 (underlining in original); EX2009, ¶69.

The prosecution history leading to these statements from the Examiner provides context and further confirms that the term “taken” does not include data

that is merely derived from other information. EX2009, ¶70. Applicant introduced details about the claimed “information associated with a user of the cellular device” by amendment. EX1002, 91.

- (a) autonomously providing to a server, employing by a the cellular device, to autonomously provide information associated with a user of the cellular device, the information including at least one of the group consisting of a preference of a user of the cellular device, a demographic data of a user of the cellular device, a user behavior of the cellular device, and content played on the cellular device;

Id.

In the next Office Action, and just prior to allowance, the Examiner rejected the claims in view of Owensby, citing specific passages for concepts such as “Owensby discloses . . . receiving information . . . including . . . a preference of a user of the cellular device . . . col. 15, lines 32-47” *Id.*, 81; EX2009, ¶71. That cited passage refers to selecting an ad *based on profiles*, not information taken from a message:

The Subscriber Identification Code . . . is provided to the *Ad Chooser* Server 22 of the Call Management System 20 where it is used to identify the predetermined *Subscriber Profile* Data 26 pertaining to the subscriber.

EX2007, 15:43-47.

In addition to selecting ads based on subscriber profile data, Owensby discloses selecting ads based on “Historical Response Data,” which are a user’s responses to past messages, *i.e.*, data derived from messages:

By assimilating the Wireless Mobile Location Data with the *Subscriber Profile* Data and/or the *Historical Response* Data, the invention permits messages, and in particular commercial information and *advertisements*, to be *targeted* to as broad or narrow a range of subscribers as desired by the sponsor of the message.

Id., 5:62-67.

The database management program inputs, outputs, stores and retrieves the Ad Content Data 24 (*i.e.*, the plurality of pre-selected messages to be targeted to the subscriber), the *Subscriber Profile* Data 26 (*i.e.*, the demographic and personal preference data pertaining to the subscriber) and the *Historical Response* Data 28 (*i.e.*, the record of the targeted *messages previously provided* to the subscriber *and the responses* made to the targeted *messages* . . .

Id., 17:54-65; EX2009, ¶72.

Owensby also discloses building a subscriber personality profile by using previous responses to messages, *i.e.*, data derived from messages.

Thus, the Ad Selection Code is not merely a database of unrelated location, identity, demographic, *preference*, date and time date, but instead is a database of inter-related subscriber information which may be ‘managed’ by a computational algorithm to *develop subscriber*

personality profiles including the previous responses [to messages] and movement patterns of the subscriber based on wireless mobile location, date and time.

EX2007, 19:45-52. Owensby uses all of this profile information to determine the ad. *See id.*, 18:2-10 (“The database management program combines the Switch Data with the Subscriber Profile Data 26 and the Historical Response Data 28 to generate an Ad Selection Code. The Ad Selection Code is then manipulated to select an appropriate advertisement for the subscriber . . . ”); EX2009, ¶73.

In response, Applicant amended the claims to specifically recite that the “information associated with a user of the cellular device” (and that is used to determine the advertisement) is “*taken by the cellular device from a message sent to the cellular device from another user of another cellular device.*” EX1002, 50.

- (a) autonomously providing to a server, by the cellular device, information associated with a user of the cellular device, the information taken by the cellular device from a message sent to the cellular device from another user of another cellular device, the message identifying characteristics of the user of the cellular device including at least one of the group consisting of a preference of a user of the cellular device, a demographic data of a user of the cellular device, a user behavior of the cellular device, and content played on the cellular device;

Id.; EX2009, ¶74.

After this amendment and having previously considered Owensby's disclosures discussed above — selecting ads based on data derived from messages — the Examiner allowed the claims. EX1002, 33-39; EX2009, ¶75.

Indeed, as noted above, the Examiner expressly found that the cited art did not teach an advertisement determined based on provided information that is “taken by the cellular device from a message sent to the cellular device from another user of another cellular device.” *See* EX1002, 37; EX2009, ¶76.

Thus, the Examiner distinguished art that selected ads based on data “derived” from messages. EX2009, ¶77. Although Owensby focuses on messages that are advertisements rather than other types of messages, the Examiner did not make a distinction based on the type of message. Instead the Examiner allowed the claims because Owensby does not select ads based on information *taken from a message*. The type of message was not central to the Examiner's reasoning, and the Examiner was, of course, aware that cell phones can receive messages from other cell phones, including from users who are not advertisers. *Id.*

Therefore, the Examiner determined that selecting ads using data “derived” from messages (specifically, using a profile derived from messages and other data) is not within the scope of the claims. *Id.*, ¶78.

Accordingly, the specification and the prosecution history of the '414 patent demonstrate that the claims require using information that was “taken” from one or

more messages, *i.e.*, directly using information that is contained within a message—not merely data derived from information that was in a message. *Id.*, ¶79.

III. THE PETITION FAILS TO DEMONSTRATE THE OBVIOUSNESS OF ANY CHALLENGED CLAIM.

A. Summaries of the Asserted References

1. Frerichs

Frerichs relates to “inserting a targeted advertisement based upon a user profile through streaming audio.” EX1004, 1:10-12. In one embodiment of Frerichs, for example:

The user profile can include information derived from a user registration process. The user registration process can derive information such as, for example, sex, age, hobbies, geographic region, race, religion, health, and sexual orientation. Other information can also be derived from the stations being selected as well as use of such stations during the time of day, for example. The user profile information can also include any other information which can be used to provide a more desirable advertisement or information to the user.

Id., 14:42-51; EX2009, ¶45.

Frerichs does not disclose anything about messages, let alone selecting an ad based on information taken from a message as every independent claim requires, and Petitioner does not assert otherwise. *See* Pet., 38-41; EX2009, ¶46.

2. Kauffman

Kauffman relates to inserting advertising into streaming multimedia. EX1006,

¶1. In Kauffman,

a “caching inserter” system is disposed at a local point of presence (POP) which intercepts a video stream destined for an end user. When insertion of advertising (or other information—such as a “news” bulletin weather information, for example) is desired, the video stream is stored/buffered at the local POP and the advertisement is played. When the ad is completed, the first stream is then played out of the buffer.

Id., ¶7; EX2009, ¶47.

Although Kauffman caches content while inserting an ad, the device that caches the content is not the device that plays the content. Rather, in Kauffman’s embodiments, the caching is done upstream of the end-user device that plays content, and the content is played for example on a television or computer terminal. *See, e.g.*, EX1006, ¶¶17-18; EX2009, ¶48.

3. Kawasaki

Kawasaki relates to targeted advertising by creating “a profile of the user that may ultimately be used to target offers to users based upon the profile.” EX1005, Abstract. Kawasaki describes that “the objects of this invention are accomplished through a method [and] system that scans information content and automatically and transparently assesses its subject matter. Over time, this invention accumulates a

‘profile’ of interests of the User, which can be used to subsequently direct Offers.” *Id.*, 3:19-23. For example, Kawasaki describes “[a]nalyzing and building Profiles from e-mail information . . . by analyzing sent and received e-mail information and building profiles based upon its content.” *Id.*, 5:61-65. Kawasaki does not disclose, however, selecting an ad based on information taken from a message; EX2009, ¶49.

a. Kawasaki requires artificial intelligence neural networks.

Petitioner and Dr. Houh’s declaration do not acknowledge that Kawasaki requires using artificial intelligence neural networks. They also do not address any of the consequences of that fact. They do not allege that a cell phone could run a neural network, for example, or that a POSITA would be motivated to combine the cell phone of Frerichs with a neural network. Pet., 24-25, 35-43; EX1003, ¶¶51-58, 100-128. A POSITA would not attempt to make a 2001-era cell phone run artificial intelligence neural networks. EX2009, ¶¶50, 124-162.

To be clear, the “recognizers” in Kawasaki are neural networks. EX2011, 40:10-14 (“... the *recognizer* discussed and presented in Kawasaki ... [is] the kind of *neural network* analyzer that Kawasaki is talking about.”). EX2009, ¶¶51. Kawasaki states that recognizers 23 are developed using neural networks:

The development of these algorithms and weighted rules is accomplished through the use of a three-tier feed-forward *artificial neural network*, a *Neural Net 22* ... The *output from Neural Net 22* is algorithms and rules, the *Recognizers 23* ...

EX1005, 4:16-24. The recognizers 23 are trained neural networks. EX2009, ¶¶52. Additional disclosures in Kawasaki reinforce this fact. Kawasaki states that it uses analytic models disclosed in related U.S. Patent No. 6,266,664 (“the ’664 patent”, cited at Kawasaki 3:64-4:1) to determine the relevance of unknown data to data sets and predefined categories:

The two modules, scanning and analyzing, named in the *above-referenced [’664] patent* application are capable of *determining the relevance of unknown data to a known data set* through efficient *analytic models*. These modules are used in real time to assess the incoming *data* from Services to the Users of the Services for their *relevance* to the common (or specific) *predefined categories* of interest to Advertisers.

EX1005, 4:6-12. Kawasaki describes using methods of the ’664 patent to assess the match between data sets and new information, and that recognizers 23 are what perform the analysis of the unknown data versus known data to assess the match and generate a matching rating (*i.e.*, rating for a match between the unknown data and a predefined category).

The method and system of this invention employs methods for *scanning, analyzing and handling* digital information *content*, described in [the ’664 patent] to *assess the match between known Data Sets 21* of subject matter and *newly encountered information*.

Referring to FIG. 3, each discrete unit of information newly

encountered by Users is *analyzed by Recognizers 23* against a set of *known Data Sets 21* such as sports, news, health information, etc. The return value of the analysis is a *matching rating* indicating the “strength” or “closeness” of the *newly encountered data* to known *Data Sets 21*.

Id., 4:62-5:6; EX2009, ¶53. Artificial intelligence neural networks are the only method that the ’664 patent discloses for generating a rating that indicates a match compared to predetermined characteristics.

... in a *neural network* system, *rating* the examined web page using the weightings in the *weight database*;

...

... regular expressions that are useful in a *neural network* system in discriminating web page *content* relative to the *predetermined content characteristic*.

...

... analyzing the web page natural language *content relative* to a *predetermined database* of regular expressions, and using a *neural network* system to form a *rating* ...

EX2027, 11:30-33, 11:53-54, 12:6-9. EX2009, ¶¶54-56. Thus, Kawasaki’s recognizers are neural networks.

B. Independent Claims 1, 9, 12, and 14 are not rendered obvious by Petitioner's asserted combination.

- 1. The cited art does not disclose taking information from a message that satisfies the claims (limitations 1.1.2-1.1.3, 9.4, 12.3.2-12.3.3, 14.3.2-14.3.3).**

Claim limitations 1.1.2-1.1.3 require a cellular device that sends a server “information taken by the cellular device from a message sent to the cellular device from another user of another cellular device, the message identifying characteristics of the user of the cellular device.” The other independent claims (limitations 9.4, 12.3.2-12.3.3, and 14.3.2-14.3.3) each have substantially the same limitation, and Petitioner simply refers back to its discussion of limitations 1.1.2-1.1.3. Pet., 63, 67 (also referring to a typo in claim 12), and 73. EX2009, ¶81.

Petitioner relies on Kawasaki for this limitation. Petitioner does not allege that Frerichs or Kauffman discloses clients that send data taken from messages, let alone messages that include information associated with a user and that are from another user of another cellular device. Indeed, Petitioner does not mention Kauffman in its discussion of this limitation. Pet., 35-43. Petitioner refers to Frerichs, but only for the disclosure of a cell phone, and does not allege that Frerichs discloses clients that provide data taken from a message. Pet., 38-43; EX2011, 91:9-15 (“Q. But Frerichs itself, setting aside Kawasaki and Kauffman, does not disclose taking this user profile information from a message; correct? A. Yeah. In my analysis, I’m not relying on Frerichs for any teaching of taking user preference -- or taking user

information from a message.”). Houh’s declaration refers to Frerichs’ client providing information (listening patterns, derived information, and the number of times a user listened to an ad) to a server, but none of that data is from a message from another user, which Dr. Houh admitted at his deposition. EX1003, ¶¶96-98; EX2011, 88:15-20 (“... 96 through 98, you *don’t* contend that’s information taken from a message. Instead, you rely on Kawasaki for that aspect; correct? A. I think that’s fair.”); 87:16-22 (similar). Consistent with that, Petitioner and the Houh Declaration do not cite anything in Frerichs for the claim limitation “[1.1.2] the information taken by the cellular device from a message ...” Pet., 38-45; EX1003, ¶¶111-124 (each referring to Frerichs as providing a cell phone for the combination, without citing any portion of Frerichs); EX2009, ¶82.

a. Kawasaki’s clients do not send information taken from messages.

Kawasaki does not disclose clients that send information taken from messages at all, let alone taken from messages that meet the claimed requirements.

1. Kawasaki uses data derived, not taken, from messages.

The plain meaning of the claim term “taken,” when interpreted in light of the specification and file history, requires using information that was actually in a message, not merely data “derived” from a message. *Supra*, Section II.C.1.

Petitioner alleges that Kawasaki's unknown data and profile meet this limitation. Pet., 38. But, as Petitioner and Dr. Houh concede, Kawasaki's unknown data and profile are "derived" from messages—they are not created by taking information from a message. *Id.*; EX1003, ¶112. The unknown data and the profile themselves are not data taken from messages. Instead, they are the input and processed output of Kawasaki's "recognizers." Kawasaki discloses using recognizers to classify messages into pre-defined categories, then using the output of recognizers to create profiles. EX1005, 4:6-12 ("... assess the incoming data ... for their relevance to ... *predefined categories* of interest to Advertisers.") Specifically, the recognizers each generate a "statistical output" regarding whether a message matches a certain pre-defined category. *Id.*, 4:34-35 ("... the statistical output from Recognizers 23 ..."). For example, a "golf" recognizer (that is, a recognizer that is dedicated to determining whether unknown data relates to golf) could output "90" to denote that the "golf" recognizer is 90% confident that a message belongs to the "golf" category (*i.e.*, the message probably does belong in the "golf" category), and a different "finance" recognizer could output "5" to denote that the "finance" recognizer is only 5% confident that a message belongs to the "finance" category (*i.e.*, the message probably does not belong to that category). EX2011, 181:8-18 ("Q ... outputting ... a confidence level represented by some

number? A. Right. ... confidence level 90 versus confidence level 5, ...”); 185:4-14; EX2009, ¶83.

The recognizers in Kawasaki use the unknown data as input. EX1005, 4:33 (“*Recognizers* are executed against incoming *unknown data* ...”); 7:45-46 (“processing the *unknown data* using a plurality of category based *recognizers* ...”). The recognizers operate on numbers; they take numbers as input and generate numbers as output. EX2011, 153:7-10 (“Kawasaki provides a method that some *recognizers* could be run, since they’re just sets of *arithmetic*, you know, *additions and multiplications*, typically.”); EX2009, ¶84. Therefore, the input (unknown data) is numbers that were generated by analyzing the messages, and the output is numbers that were generated by analyzing the input numbers. Because the input and output numbers are generated, they were never in a message. They are not words that were in a message, for example. The numeric output from the recognizer is not the word “golf” or any other word that a human would use to label the category. Instead, the numeric statistical output from the recognizer is used to determine whether or not the message belongs to a pre-defined category. EX2009, ¶84. The categories are “pre-defined,” so by definition existed before the message was analyzed, and therefore are not *taken from a message*. EX2009, ¶85. Profiles are built using quantitative analysis of the match / no match numeric rating output from recognizers, and therefore, the profile that is built using those outputs is even further removed

from information in a message. EX1005, 4:42-48 (“... *Profiler 26* that *receives* the *output* from the real-time analysis of *Recognizers 23*. *Profiler 26* tracks and builds an *aggregate statistical model*, ‘*Profile*,’ of the User including *quantitative analysis* of the *match*, frequency, duration, age and other factors between unknown content reviewed by the User and the set of installed *Recognizers 23*.”) EX2009, ¶¶86-89. To be clear, Petitioner has no other theory regarding taking information from messages. Kawasaki does not disclose that the profiles were actually in a message from another user, for example, and Petitioner does not allege otherwise. Pet., 38-41.

2. Kawasaki does not disclose clients transmitting the required information to servers (e.g., limitation 1.1.2).

Petitioner presents two theories regarding the data that Kawasaki’s clients send, that allegedly satisfy limitation 1.1.2: (1) clients send “unknown data”; and (2) clients send “profiles” to ad servers. Pet., 38-41. Neither meets limitation 1.1.2; EX2009, ¶90.

Petitioner’s first theory is that clients send “unknown data.” Pet., 40-41. Unknown data is the output from the initial processing of email messages, which will be input to the recognizers. EX1005, 4:33 (“*Recognizers* are executed against incoming *unknown data* ...”) Kawasaki does not disclose transmitting that data from a client to a server. *See, e.g.,* Kawasaki 5:66-67; EX2009, ¶¶91-92. Although

Kawasaki states that the step of processing incoming data to generate unknown data can occur at the client or a server, and that processing the unknown data to eventually generate a profile can occur at the client or a server, Kawasaki does not disclose performing some of the processing at the client, then the client sending partially-processed data to a server, and the server performing the rest of the processing. EX1005, 5:66-67 (“*Analysis and Profile building can be accomplished at either the Client or Server location within an e-mail system.*”). Instead, Kawasaki teaches that the processing occurs entirely at the client, or entirely at the server. EX2009, ¶92.

More specifically, in the context of email, which Petitioner’s proposed combination requires, Kawasaki does not disclose a client that sends unknown data from email messages back to the email server—and it would make no sense to do so. The email server sends an email to the client—and the email server is the client’s only source for that email. EX2009, ¶¶93-94. Under Petitioner’s theory, the emailed client would partially process the email that it received from the email server, then send the partially-processed output back to the email server. The email server already has all emails, however, so it would make no sense for the server to send emails out to a client, then have the client perform some processing, and send data regarding the email back to the email server. EX2009, ¶94. That is especially true in Petitioner’s proposed combination, where the client would be a 2001-era cell phone, because it would not make sense for an email server to offload processing to

a cell phone with limited storage, RAM, processing power, and battery life. EX2009, ¶94.

Tacitly conceding that Kawasaki does not disclose clients transmitting unknown data to servers, Petitioner devotes most of its discussion to its other theory: clients send profiles to ad servers. Pet., 38-40. But the profile does not have information “taken” from a message (*e.g.*, an email) in Kawasaki. Instead, the profile is built using quantitative analysis of the recognizers’ output (recall that the output is numeric, see previous section). EX1005, 4:42-48 (“... Profiler 26 [] receives the output from the real-time analysis of Recognizers 23. Profiler 26 tracks and builds an aggregate statistical model, ‘Profile,’ of the User including quantitative analysis”); EX2009, ¶95.

For all of these reasons, the proposed combination fails to teach limitation 1.1.2 or corresponding limitations 9.4, 12.3.2-3, 14.3.2-3.

b. Kawasaki does not disclose or analyze the type of messages that the claims require (*e.g.*, limitations 1.1.2, 1.1.3).

Claim 1 requires data that is taken from a message that meets two requirements: the message [1] is “from another user of another cellular device” (limitation 1.1.2) and [2] “identif[ies] characteristics of the user of the cellular device” (limitation 1.1.3). The Institution Decision noted that “a” can mean “one or more” and “comprising” is open ended. DI, 17-18. To be clear, Patent Owner is not

limiting “a” message to mean only one message. Nevertheless, interpreting “a” to mean “one or more,” and interpreting “comprising” to allow including more than just a message, does not obliterate those two claimed requirements. Even if “a” message is one or more messages, at least one of those one or more messages must meet the rest of the claim limitations. Later claim limitations refer back to “the” information taken from “the” message when determining an advertisement, which requires “the” information to be from “the” at least one of the one or more messages that satisfy the claim limitations. *Salazar v. AT&T Mobility LLC*, 64 F.4th 1311,1318 (Fed. Cir. 2023) (“Here, it does not suffice to have multiple microprocessors, *each* able to perform *just one of* the recited *functions*; the claim language requires *at least one* microprocessor capable of *performing each of the recited functions*.”). Thus, information must be taken from at least one message that meets both claim requirements.

Petitioner has not identified anything in Kawasaki that suggests taking information from at least one message that [1] is “from another user of another cellular device” (limitation 1.1.2) and [2] “identif[ies] characteristics of the user of the cellular device” (limitation 1.1.3). EX2009, ¶¶96-97.

The other references in Petitioner’s combination also do not provide any such teaching or suggestion, and Petitioner does not allege otherwise. Pet., 38-43. Thus,

the cited art does not disclose or render obvious limitations 1.1.2 and 1.1.3, or corresponding limitations 9.4, 12.3.2-3, 14.3.2-3. EX2009, ¶98.

2. The cited art does not disclose selecting an ad based at least in part on the information that a client takes from a message and sends to a server (limitations 1.2, 9.5, 12.4, 14.4).

Claim limitation 1.2 requires the cellular device to receive an ad that “is determined by the server based at least in part on the provided information.” Dr. Houh admitted that “the provided information” is the information that was taken from a message (in the preceding claim limitations). EX1011, 49:17-50:5. The other independent claims (limitations 9.5, 12.4, and 14.4) each have substantially the same limitation, and Petitioner simply refers back to its discussion of claim 1. Pet., 63, 69, and 73 (also repeating some of the points made regarding claim 1). EX2009, ¶99.

Petitioner relies on Kawasaki for this limitation. Kauffman and Frerichs are not relevant. Although Petitioner refers to a server in Frerichs that provides ads, Petitioner does not allege that Frerichs or Kauffman selects ads based on information taken from messages. Pet., 43-45. Dr. Houh is “not relying on Kauffman for [his] analysis for Claim Element 1.2.” EX2011, 93:11-94:4; EX2009, ¶100.

Petitioner presents two arguments regarding a server in Kawasaki that selects ads: (1) a client sends unknown data to a server and (2) a client sends a profile to an ad server, as discussed in Section III.B.1.a.2. But Kawasaki does not disclose a client sending unknown data to a server, and it would not make sense to do so. *Id.* Thus,

Kawasaki does not disclose or suggest selecting an ad based on unknown data received from a client. EX2009, ¶101

As for Petitioner's second scenario where a client sends a profile to a server, Kawasaki does not disclose a server sending a profile to a client and then having a client send the profile to an ad server, and Petitioner does not assert otherwise. Pet., 38-45. Therefore, the only possibility for a client to send a profile to a server is if the client built the profile itself. The profile does not contain information taken from a message. Instead, the profile is built by quantitative analysis of numeric output from recognizers. EX1005, 4:42-48; *See* Section III.B.1.a.1; EX2009, ¶102.

3. The cited art does not disclose playing content on an end user device—let alone a cellular device—while caching other content (limitations 1.3.1-1.3.3, 9.6.1-3, 12.5.1-3, 14.6.1-3).

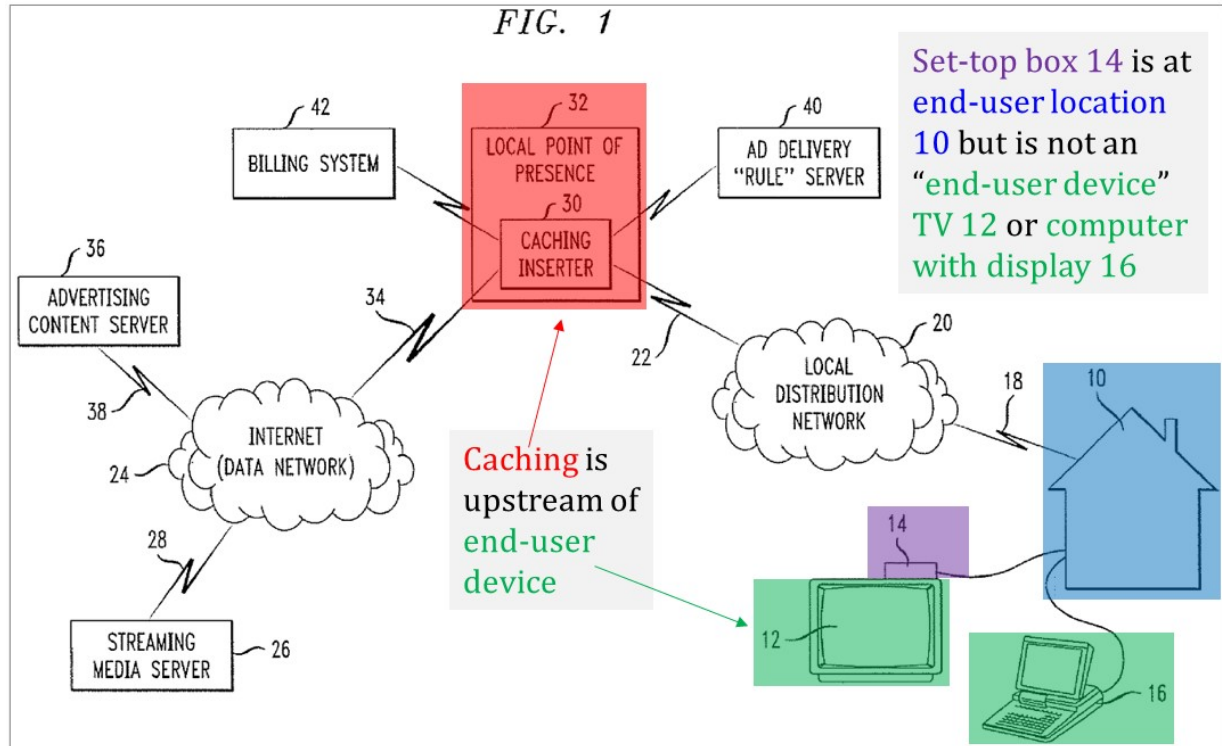
Claim limitations 1.3.1 and 1.3.2 require recording and playing content on a cellular device. Specifically, the cellular device [1] records (*e.g.*, caches) content (“*recording, by the cellular device, the content which playing was stopped*”), while [2] playing an ad on the cellular device (“while the at least one determined *advertisement is playing,*” where “the at least one” ad is “at least one *advertisement* to be *played on the cellular device*” from claim element 1(b)), then [3] that same cellular device plays the content that it recorded (“resuming the *playing* of the *stopped content, by the cellular device*”). The other independent claims (limitations 9.6.1-3, 12.5.1-3, and 14.6.1-3) each have substantially the same limitation, and

Petitioner simply refers back to its discussion of claim 1. Pet., 64, 69, and 75. EX2009, ¶103.

Kawasaki and Frerichs are irrelevant to limitations 1.3.1-1.3.3. Petitioner does not assert that Kawasaki streams or caches media, and does not cite Kawasaki in its discussion of claim element 1(c). Pet., 45-53. Petitioner admits that Frerichs does not cache as required by the claims. Pet., 32 (“... *caching* streaming media content during the playback of an advertisement, *so that the streaming media content* can then be *resumed* after completion of the advertisement content, which is *not explicitly taught by Frerichs*”); EX2011, 67:13-18 (“*Frerichs isn’t teaching caching the content during the playback of an advertisement so that the streaming media content can then be resumed after completion of the advertisement content. That whole thing is not taught by Frerichs.*”); 73:4-7 (“Q ... you’re *not relying on Frerichs for 1.3.2*; correct? A. *Yeah.* I’m relying really on analysis with respect to Kauffman”); EX2009, ¶104.

a. In Kauffman, the device that plays content does not cache.

Although Kauffman caches content while inserting an ad, the device that caches the content is not the device that plays the content. Instead, Kauffman caches content at “caching inserter 30” within the “local point of presence 32,” which is upstream of devices that play content: TV 12 and computer terminal 16, each of which show content on a display. EX2009, ¶105.



EX1006, FIG. 1 (annotated).

Consistent with Figure 1, and as demonstrated below, every time that Kauffman refers to the location of the point-of-presence or the caching inserter within it, Kauffman teaches that the caching inserter is upstream from the end-user device that plays content. Kauffman teaches that the caching inserter “intercepts” content destined for an end-user and outputs files to the end-user, *i.e.*, the caching inserter is upstream of the end-user device. EX1006, Abstract, ¶7; EX2009, ¶106. Kauffman states that the caching inserter is between—not at—the end-user devices and servers, for example between data network 24 and local distribution network 20, as illustrated in Figure 1 (shown above):

... Referring to FIG. 1, a ‘caching inserter’ 30, located in a local point-

of-presence (POP) 32 along the path between data network 24 and local distribution network 20 ...

EX1006, ¶¶18; *see also Id.*, ¶¶24, 25 (caching inserter is “between” network / servers and end-user); EX2009, ¶107. Kauffman teaches that the “extreme” downstream position for the caching inserter is at the end user’s location in a set-top box, and teaches that locating the caching inserter “further upstream” provides benefits:

... At the extreme, the advertisement cache could be part of a set-top box at the end-user location. Obviously, the location of the advertisement cache then affects the number of separate end users that can receive the same advertisement. Particularly, the further upstream the advertisement cache is located, the greater the broadcast potential of a particular ad.

EX1006, ¶9; *see also Id.*, claims 12, 17-19 (cache at set-top box or residential gateway device). Thus, even at the “extreme,” Kauffman’s caching inserter is upstream of the device that plays content. EX2009, ¶108.

Petitioner refers to the set-top box as a “client device” that caches. The set-top box is irrelevant to the ’414 claims, however, because content is not played on the set-top box. EX2009, ¶109. Kauffman refers to devices that display content as “end-user devices” TV 12 and computer 16, each of which have a display. Kauffman distinguishes the set-top box and residential gateway as being upstream from the

end-user devices. Content received “through” a set-top box or residential gateway is played “on” an end-user device (TV or computer display device).

‘Streaming media’ is now considered to be a term of art and defines the capability to download multimedia files in real time (or ‘near real’ time) and *play the file on an end-user device, such as through a set-top box on a television or on a computer display device.*

...

Referring to FIG. 1, an end-user 10 is depicted as a residential end-user that is capable of receiving multimedia information through either a *television 12* (using a *set-top box 14* or other appropriate *residential gateway device*) or a *computer terminal 16* ...

EX1006, ¶¶3, 17; EX2009, ¶109.

Thus, in Kauffman, content is played on an “end-user device” (TV 12 and computer terminal 16) that plays whatever stream of content it receives, without caching to play substitute content. All caching of content while substituting an ad is done at the caching inserter, upstream of any device that plays content. Kauffman does not disclose playing substitute content on a device that caches other content, as the claims require. EX2009, ¶110.

b. Petitioner’s hypothetical combination of Kauffman with a cell phone would cache content upstream of the cell phone (e.g., limitation 1.3.2).

Limitation 1.3.2 requires “recording, by the cellular device, the content which playing was stopped, while the at least one determined advertisement is playing.”

Kauffman does not disclose a cellular device. Petitioner does not allege otherwise. Pet., 45-53. Dr. Houh relied on Frerichs, not Kauffman, for the concept of a cell phone. EX2011, 94:5-11. Even if Petitioner's hypothetical combination of Kauffman and a cell phone were to play an ad on the cell phone, the cell phone would not cache other content while playing an ad. Instead, as discussed in the previous section, Kauffman teaches that caching is done upstream of any device that plays content. Substituting a cellular device for TV 12 or computer terminal 16 would not move the location of Kauffman's upstream caching inserter any closer to the device that plays content. EX2009, ¶111. For at least these reasons, the proposed combination fails to teach limitation 1.3.2, or corresponding limitations 9.6, 12.5.3, 14.6.2.

4. Petitioner fails to establish a motivation to combine the applied references.

Petitioner does not show sufficient motivation to combine Frerich's cell phone with Kawasaki's neural networks, nor Frerich's cell phone with Kauffman's upstream caching inserter. Petitioner does not even allege that there is any motivation to combine all three references.

- a. **A POSITA would not have been motivated to combine Kawasaki’s artificial intelligence neural networks with a cell phone, which was not technologically feasible at the time of the ’414 patent.**
 - 1. **Petitioner fails to address the fact that its proposed combination requires a cell phone to run a neural network.**

Kawasaki requires a neural network, as discussed in Section III.A.3.a. EX2009, ¶124. Although Dr. Houh admitted at his deposition that Kawasaki relates to neural networks, Petitioner and Dr. Houh’s declaration do not acknowledge or address the fact that Kawasaki requires running artificial intelligence neural networks. Pet., 24-25, 35-43; EX1003, ¶¶51-58, 100-128; EX2011, 40:10-14 (“... the *recognizer* discussed and presented in Kawasaki ... [is] the kind of *neural network* analyzer that Kawasaki is talking about.”). Petitioner and Dr. Houh do not allege that a 2001-era cell phone could run a neural network, or that a POSITA would be motivated to combine the cell phone of Frerichs with a neural network. *Id.* Petitioner and Dr. Houh offer no evidence, or even argument, that in 2001 a cell phone had ever run a neural network, or that such a feat was possible. *Id.* Dr. Houh did not consider the technical challenges of running a neural network on a cell phone. Even at his deposition months after the Petition was filed, Dr. Houh could not name a single example of any cell phone in 2001 that ran a neural network. *Id.*, 147:10-150:6. Dr. Houh admitted that he had not even considered whether the phones he relies on could run a neural network. EX2011, 151:18-152:1 (“that’s not a specific

question I considered in the preparation of my declaration”); 152:2-19; 154:19-155:7. He did not know whether cell phones had any of the functionality that is typically involved in running neural networks, such as GPUs or parallel processing. EX2011, 151:8-12; 157:8-12. Dr. Houh also did not know when Apple or Google introduced support for running a neural network on phones. *Id.*, 144:17-9. By remaining silent on this significant issue rather than addressing it, Petitioner overlooked the fact that the proposed combination requires a cell phone to run an artificial intelligence neural network—a major technical flaw that completely undermines the proposed combination. EX2009, ¶124.

2. Significant technical challenges prohibited cell phones from running neural networks in 2001.

There is no evidence in this proceeding that anyone had ever run a neural network on a 2001-era cell phone. Running Kawasaki’s neural networks on a 2001-era cell phone as Petitioner proposes would not have been feasible. Neural networks were known, but they used hardware and software that was far more powerful than anything a cell phone offered in 2001. EX2009, ¶¶37-44, 125-126.

Cell phones did not have sufficient storage space, RAM, or processing power to run Kawasaki’s neural networks. EX2009, ¶127. Further, given their limited battery life, a cell phone would have had to be plugged in continuously to perform any processing that came even close to running a neural network. *Id.*

Far from appreciating the technical difficulties of running a neural network on a cell phone, Dr. Houh trivialized them. When asked whether it was known that “cellular devices could run neural network models,” Dr. Houh suggested that a phone with a built-in calculator app could run a neural network, because neural networks are “simply running these arithmetic operations.” EX2011, 153:7-156:7; 179:11-15 (“It’s just simple math ...”). Dr. Houh pointed out that running a trained model is “less computationally intensive” than training a model. *Id.* Although running a trained neural network is less computationally intense than running a trained one, it is nevertheless far too computationally intense for any 2001 era cell phone to handle, as Dr. Malek explains. EX2009, ¶¶128-144.

3. Cell phones did not run neural networks and therefore were not suitable clients for Kawasaki.

Kawasaki does not disclose a cellular device. Petitioner does not allege otherwise, but presents incorrect logic to argue that Kawasaki could use the cell phone of Frerichs as a client. Petitioner and Dr. Houh’s flawed reasoning is as follows:

1. Kawasaki states that a client can be a device that displays email.
2. A cell phone could display email.
3. Therefore, a cell phone could be a client in Kawasaki.

Pet. 30, 40; EX1003, ¶¶74, 120-121; EX2009, ¶145. Under Petitioner’s faulty logic, Frerichs’ personal digital assistant and pager could also be clients in

Kawasaki, because those devices also can display email. EX1004, 3:52-54 (“The remote computing device can include, for example, a cellular phone, a *personal digital assistant*, a *pager*, or the like.”). No one would ever consider putting a neural network on a pager, and Petitioner does not allege otherwise. Pet. 30, 40; EX1003, ¶¶74, 120-121; EX2009, ¶145.

Petitioner’s reasoning for using a cell phone disclosed in Frerichs as a client in Kawasaki is incorrect because displaying email is not the only criteria for a device to be a client in Kawasaki. Kawasaki does not state that every device that can display email can be a client. EX1005, 6:4-5; EX2009, ¶146.

Of the universe of devices that could qualify as clients, Kawasaki discloses only two particular examples: set-top boxes and desktop computers. (EX1005, 6:4-5 (“Clients refers to any software loaded on *desktop PCS*, *set top boxes* and end-user display devices that display e-mail.”); *see also* the six other nearly identical passages referring solely to desktop PCs and set top boxes at 6:17-19, 6:31-33, 6:45-48, 6:59-61, 7:8-10, and 7:22-26). Petitioner focuses on the language “devices that display email” to suggest moving from the computational power of desktop computers all the way down to cell phones. Kawasaki offers no basis to do so. A POSITA reading Kawasaki’s reference to other clients that display email would understand that to mean other types of powerful computers that were known to run neural networks, such as workstations that ran neural networks using the SNNS software that

Kawasaki's related patent refers to. EX2027, 8:6-20; EX2009, ¶¶147-148. Kawasaki refers to "desktop" computers, as opposed to laptops or hand-held computers. EX1005, 6:4-5; EX2009, ¶149. Kawasaki does not suggest using less powerful computers such as laptop computers as clients, let alone cell phones. Indeed, there is no mention of a cell phone in Kawasaki, and Dr. Houh could not point to anything in Kawasaki that discloses one. EX2011, 151:3-7; 158:9-14. Unlike a 2001-era cell phone, the clients in Kawasaki do not have low processing power, minimal RAM, or minimal storage space, and none of them run on a battery. EX2009, ¶150.

Although some 2001-era cell phones could display email, such devices would not satisfy the requirement necessary to be a client in Kawasaki. Displaying email was one of the most sophisticated tasks that a cell phone could accomplish in 2001, and was heralded at the time as a significant technological advance. EX2009, ¶151. But in Kawasaki, clients perform tasks that are computationally far more intense than anything a 2001-era cell phone ever did or could ever do, including running artificial intelligence neural networks. Kawasaki runs multiple artificial intelligence neural network "recognizers" to determine whether messages belong to any of multiple predefined categories by analyzing the unknown data against data sets in real time. EX1005, 4:6-9, 4:16-24; 4:37-41; EX2009, ¶151. The Kawasaki "Profiler" then performs quantitative analysis of the output of the neural network recognizers to create an aggregate statistical model (profile):

... *Profiler 26* that *receives* the output from the *real-time analysis* of *Recognizers* [plural] 23. *Profiler 26* tracks and builds an *aggregate statistical model*, ‘*Profile*,’ of the User including *quantitative analysis* of the match, frequency, duration, age and other factors between unknown content reviewed by the User and the set of installed *Recognizers* [plural] 23.

EX1005, 4:42-48; EX2009, ¶151. Petitioner refers to Kawasaki’s profiling analysis. Pet., 25; EX1003, ¶102. Petitioner does not acknowledge or address the question of whether a cell phone could run a neural network and does not assert that a cell phone could perform Kawasaki’s profiling analysis. Pet., 24-25, 35-43; EX1003, ¶¶51-58, 100-128.

Running neural networks was far beyond the capacity of Frerichs’ cell phone. EX2009, ¶152. Thus, Petitioner’s hypothetical combination of Frerichs’ cell phone performing the work that Kawasaki requires would not have been feasible. Petitioner’s hypothetical combination requires that a client—more specifically, Frerichs’ cell phone—must do the work; otherwise, Petitioner could not point to any information that a Kawasaki client takes from a message and sends to a server as the claims require, for example. (*see, e.g.*, limitation 1.1.1-2). Pet., 38-43. Petitioner does not point to any disclosure in Kawasaki suggesting that any device less powerful than a desktop computer could handle the tasks that Kawasaki requires. Pet., 29-30. Instead, Petitioner merely offers the incorrect and conclusory assertion

that “Kawasaki contemplates applicability to a wide variety of client devices.” Pet., 29. That is wrong. To perform the work that Petitioner’s hypothetical combination requires of a client, the client must be capable of running artificial intelligence neural networks and other processing that servers would otherwise do, as discussed in this section. EX2009, ¶152.

4. Any benefits of combining Kawasaki and Frerichs could be achieved without the unnecessary and unprecedented feat of running a neural network on a cell phone.

Petitioner does not offer any reason to combine Kawasaki’s neural networks with a cell phone. Pet., 27-30; EX1003, ¶¶69-75. Petitioner merely offers advertisement-related reasons to combine Kawasaki with Frerichs generally—not the cell phone embodiment of Frerichs specifically, which is essential to Petitioner’s proposed combination. Pet., 27-30 (referring to improved targeted advertising, playing advertisements on a user device, and advertising based on user profiles); EX2009, ¶153.

The alleged benefits could be achieved without burdening any client—let alone a cell phone—by running the neural network on a server—which would not satisfy the claims. EX2009, ¶154. Frerichs discloses servers, and Kawasaki discloses that the neural network can run on a server, and need not run on a client. EX1005, 5:66-67 (“*Analysis and Profile building* can be accomplished at either the Client or Server ...”); EX1004, 4:44-46 (“In each of the *servers* 105, information such as

advertisements can be inserted into the streaming audio for output at any one of the client devices.”). Petitioner points to no reason for, or benefit from, combining clients instead of servers.

Petitioner does not point to any reason or benefit for taking on the unnecessary and unprecedented challenge of running neural networks on a cell phone, and does not recite any advantages that a cell phone would provide that other embodiments would not. Pet., 27-30; EX1003, ¶¶69-75; EX2009, ¶155.

It was far beyond the skill of a POSITA to run a neural network on a 2001-era cell phone. EX2009, ¶156. To the extent a POSITA would have any need to run a neural network, a POSITA would have used devices that were known to run the “commercially available” neural networks that Kawasaki refers to, such as the desktop computer clients that are common to both references and that Kawasaki discloses as being capable of running neural networks. EX1005, 4:6-9 (“commercially available” neural networks); 6:4-5 (“Clients refers to any software loaded on *desktop PCS, set top boxes* ...”); EX1004, 11:10-13 (“The client can be a *personal computer, ... television set top box* ...”); EX2009, ¶156.

5. Any expectations of success apply to powerful computers, not cell phones.

Petitioner alleges that a POSITA would have had reasonable expectations of success combining Kawasaki and Frerichs because Kawasaki refers to (1) “‘commercially available’ software” and (2) “‘methods for scanning, analyzing

and handling digital information content’ as described in a related patent (U.S. Patent No. 6,266,664).” Pet., 30 (citing EX1005, 4:21-32; 4:62-67). What Petitioner fails to mention is that both of those quotes refer to neural networks that did not run on cell phones. Doing so would have required skill far beyond ordinary skill in the art. EX2009, ¶157. That is especially true because Petitioner’s definition of a POSITA is silent with respect to knowledge of neural networks. Therefore, there is no evidence that a POSITA would have had any expectation of success in running a neural network on a cell phone in 2001. Pet., 15-16. Unsurprisingly, there is no evidence that the feat had ever been accomplished, or even attempted at that time. EX2009, ¶157.

The “commercially available” software that Petitioner cites is neural network software, as Dr. Houh admitted. EX1005, 4:21-23 (cited in Pet., 30) (“Various *artificial neural networks* are *commercially available* that could be used for this purpose.”); EX2011, 165:17-7. Kawasaki does not mention any particular commercially available product, but there was no commercially available neural network for cell phones, and Dr. Houh could not name any. *Id.*, 166:16-21 (“I’m not aware of the exact timeline” for such products); EX2009, ¶158. Therefore, a POSITA would not have had any expectation—or even a possibility—of success running a commercially available neural network on a cell phone. EX2009, ¶158.

Similarly, the related patent that Petitioner refers to uses neural networks. *See* Section III.A.3.a. The '664 patent, like Kawasaki, refers to unnamed commercially available software. EX2027, 3:34-36 (“... it reflects a *commercially available embodiment* of the invention”). Furthermore, while the patent mentions PCs, it does not mention cell phones (“... the present technology can be implemented as a software product for *personal computers* ...”). *Id.*, 8:34-35. The patent also refers to training a neural network by analyzing 10,000 web pages using a database and the “SNNS” software package. EX2027, 8:6-20. No 2001-era cell phone could possibly do that. EX2009, ¶159. SNNS ran neural networks on workstations with the UNIX or Windows operating system. EX2028, 1; EX2009, ¶139. A workstation is a high-performance computer that is more powerful than a personal computer. EX2009, ¶140; EX2029. Dr. Houh did not consider SNNS in forming his opinions; indeed, he admitted that he had not heard of the term. EX2011, 156: 13-15 (“Q. Have you heard of the Stuttgart Neural Network Simulator or SNNS? A. I don’t think I have, no.”). SNNS did not and could not run on cell phones—in 2001 or any other time. EX2009, ¶¶142-144. Thus, Kawasaki and its related patent undermine Petitioner’s position and do not support running neural networks on a cell phone. Considering these teachings, a POSITA would not have been motivated to use a cell phone to run a neural network. EX2009, ¶160.

Petitioner refers to the “recognizers” being “very small and compact,” but offers no evidence they are small enough for a 2001-era cell phone to store or run them. Pet., 30, citing EX1005, 4:21-32. Indeed, such phones did not have enough processing power or RAM to run the neural networks. EX2009, ¶161. The cited Kawasaki sentence refers to distributing “small and compact” recognizer neural networks as updates. EX1005, 4:29-31 (“... because Recognizers 23 are very *small and compact*, dynamically generated *Recognizers 23* are used for electronic *distribution and updates*.”); EX2009, ¶162. Specifically, distributing (1) smaller, trained recognizer neural networks, instead of (2) a larger, untrained Neural Net 22, which Kawasaki refers to in the preceding paragraph. EX2005, 4:17-23 (“The development of these algorithms and weighted rules is accomplished through the use of a three-tier *feed-forward artificial neural network*, a *Neural Net 22* ... The *output* from *Neural Net 22* is algorithms and rules, the *Recognizers 23* ...”); EX2009, ¶162. Dr. Houh did not evaluate the technical challenges of running neural networks, and could not describe techniques that Kawasaki expressly discloses, such as the “feed-forward” concept in the previous quote. EX2011, 145:10-20. Training a neural network requires more RAM, storage, and processing power than running a neural network that has already been trained, and therefore a trained neural network is small and compact compared to an untrained neural network. EX2009, ¶162. Dr. Houh admitted that “the training of a neural network would typically be done on higher-

end devices with more computation” power and running a trained neural network is “much less computationally intensive.” EX2011, 146:15-147:9. Kawasaki refers to distributing updated neural networks to computers that already ran neural networks. EX1005, 4:17-23. Kawasaki does not suggest expanding the universe of devices that actually run neural networks. EX2009, ¶162.

b. A POSITA would not have been motivated to combine Frerichs’ audio cell phone client with Kauffman’s caching inserter for streaming video.

Petitioner does not provide any reason to combine Kauffman with Frerichs, let alone the cell phone of Frerichs.

1. The sole benefit that Petitioner refers to—playing from a cache without further network delay—is a problem that Kauffman creates but does not acknowledge or solve.

The vast majority of Petitioner’s discussion regarding combining Frerichs and Kauffman has nothing to do with *motivation* to combine. Instead, it is directed to similarities between Kauffman and Frerichs. For example, the concepts of showing ads seamlessly and inserting ads at arbitrary locations are benefits that Frerichs achieved alone, without caching and without Kauffman, as Petitioner itself points out. Pet., 30-34; EX2009, ¶164.

Petitioner cites only one alleged benefit of combining Kauffman and Frerichs: caching “would allow the paused content to be immediately resumed ... without further delay caused by network retrieval of the streaming media content.” Pet., 33.

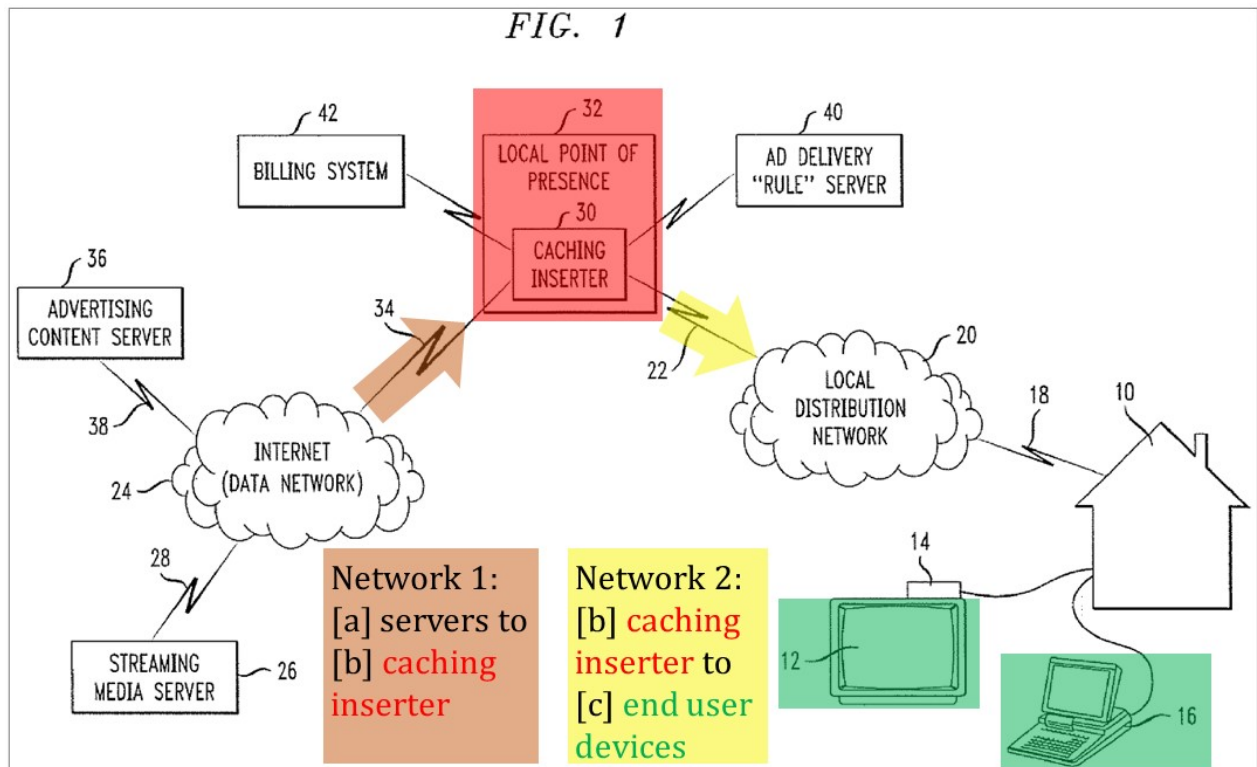
Glaringly absent from the Petition is any evidence in Kauffman regarding this alleged benefit. There is no motivation to combine Frerichs with Kauffman to avoid network delays. EX2009, ¶165. Kauffman is silent regarding that concept. Indeed, Kauffman's only mention of the term "delay" relates to the delay that Kauffman itself causes by "intercepting" a stream destined for an end-user to insert an ad, which creates the need to delay and cache the remainder of the stream. EX1006, ¶¶7, 20 ("... a time *delay* between the incoming stream to caching inserter 30 and the outgoing stream to end-user 10 (the '*delay*' being the length of the inserted advertisement)."); EX2009, ¶165.

Petitioner is unclear regarding what is supposedly solved by combining Frerichs with Kauffman. If Petitioner is asserting that Kauffman solves a delay caused by intercepting and caching a stream, it is Kauffman that creates that problem. Thus, there is no motivation to combine with Kauffman to create, then solve, an additional problem that is not present in Frerichs. EX2009, ¶166.

If instead Petitioner is asserting that Kauffman's caching can alleviate network delay, it is Petitioner alone, not Kauffman, who says so. EX2009, ¶167. Kauffman mentions that collecting statistics about ads is a benefit of using a caching inserter, but never mentions reduced network delay. EX1006 ¶10 ("It is an *advantage* ... that ... passing an advertisement stream through a *cache* allows for

various statistics to be collected at the POP, such as the number of times a particular ad is played ...”)

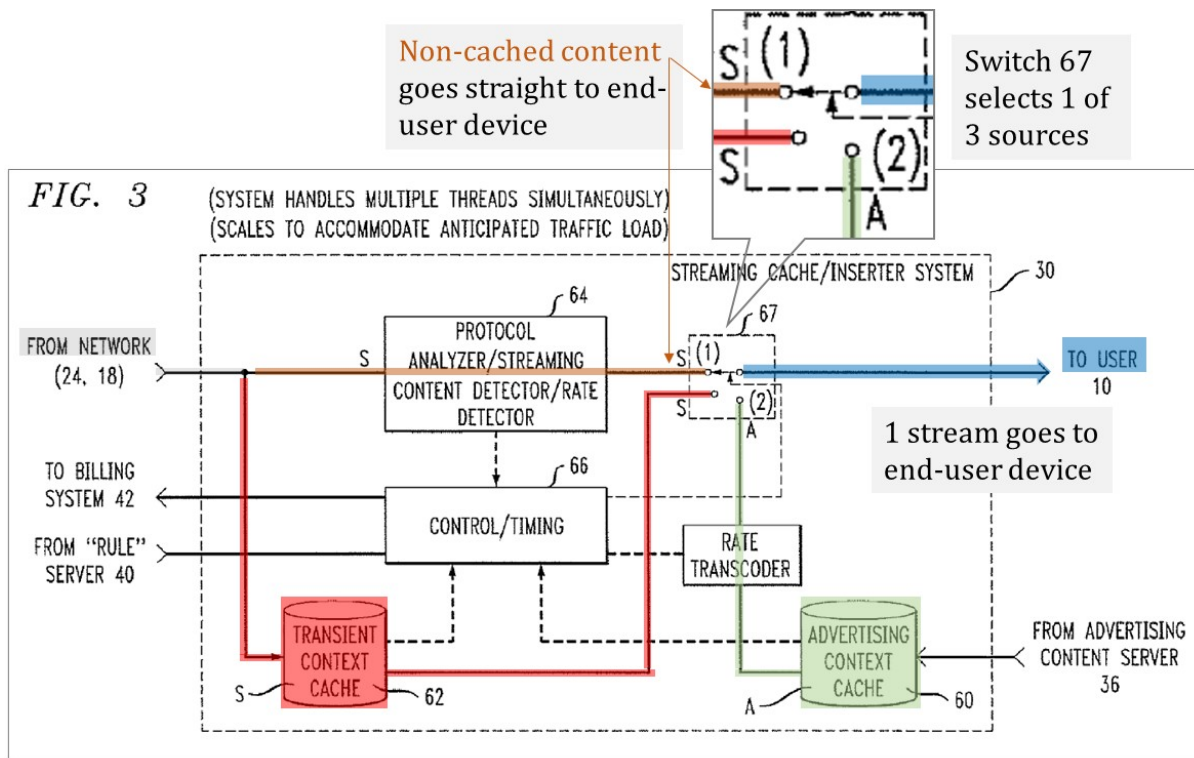
Kauffman compounds the risk of network delay rather than solving it, because the caching inserter creates the need for a second connection from the caching inserter to the end-user device.



EX1006, FIG. 1 (annotated).

Kauffman’s first connection is from servers to the caching inserter. Kauffman is silent regarding any possible network delay on that first path and does not teach caching all incoming content to avoid network delays. To the contrary, Kauffman teaches away from caching to reduce network delay on that path: Kauffman streams

content directly from the first network, through the inserter without caching, and through the second network to the end-user. EX2009, ¶168. Specifically, before there is any ad to insert, Kauffman teaches putting switch 67 of Figure 3 into the position 1 to allow the stream to pass straight through, without caching. EX2009, ¶168.



EX1006, FIG. 3 (annotated).

Kauffman states that switch position 1 outputs non-cached content in real time until an ad is ready to be played, at which time the switch moves to position 2 to play the ad. After the ad ends, the switch moves to position 3 to output cached content:

... unless and until a full advertisement file is loaded in first cache 60,

multimedia stream MM can be played coupled in *real time* to *end-user* 10, indicated as *position (1) of switch 67 of inserter 30*. ... [when an ad is ready] switch ... move[s] to position (2), allowing the cached advertisement stream A to be sent to end-user 10. ... When ... the end of the advertisement has been reached, a signal to move switch 67 to position (3) will be sent, allowing the cached multimedia stream to be sent to end-user 10.

Id., ¶24; EX2009, ¶168.

Kauffman's second connection is from the caching inserter to the end-user device. That second connection is one that Kauffman creates by "intercepting" the stream. EX1006, ¶7; EX2009, ¶169. Thus, rather than solving network delay, Kauffman creates a risk of additional delay in the embodiments where caching inserter outputs content to a second network to reach the end user. "At the extreme," the caching inserter can be located in a set-top box, in which case the second connection does not require a network path to the end-user's location, but Kauffman does not mention reducing network delay, or anything else, as a benefit of putting the caching inserter into the set-top box. EX1006, ¶9; EX2009, ¶169.

2. Any benefits of combining Kauffman and Frerichs are achievable without caching at a client device, let alone a client that plays content.

Petitioner proposes a hypothetical combination: Kauffman's caching inserter inside Frerichs' clients that play content. That arrangement simply does not exist in Kauffman, Frerichs, or the combination. Kauffman caches upstream of the end-user

device that plays content, so combining Kauffman with Frerichs' cell phone would not create a combination that cached content on the cell phone. *See* Section III.B.3.a; EX2009, ¶170.

Any benefits of using Kauffman's disclosure are achievable without caching at any client device: in all but one embodiment, Kauffman caches outside of the end-user's home, at an upstream location that the end user cannot control, such as a cable headend. EX1006, ¶9; EX2009, ¶171.

Petitioner does not provide any reason or benefit for caching at a client. Petitioner refers to Kauffman "client-side" caching without any supporting citation. Pet., 33 ("Kauffman's acknowledgement that its techniques may be implemented at a [sic] *client-side* (e.g., in Frerichs' cellular phone)," with no relevant citation). Dr. Houh admitted that he did not provide any relevant citation and stated that he is not relying on anything in Kauffman as instructing anyone to use a cell phone. EX2011, 98:14-99:8; 105:4-5 ("... I'm not explicitly saying that Kauffman says do this on a cell phone."); 102:9-22. Kauffman does not mention a cell phone, so Petitioner's statement about "client-side" is presumably referring to Kauffman caching at a set-top box or residential gateway. EX1006, ¶9, claims 17-19; EX2009, ¶172.

Although the set-top box and residential gateway are characterized as client devices, they are not end user devices on which content is played as the '414 claims require. *See* discussion in Section III.B.3; EX2009, ¶173. Kauffman does not

disclose implementing the caching inserter on an end user device that plays content. Instead, content is played on a device that is downstream from the caching, even in the set-top box and gateway embodiments. EX1006, ¶3 (“play the file ... *through a set-top box*” and “on a television or on a computer display device”); ¶17 (“receiving multimedia information through either a *television* 12 (using a *set-top box* 14 or other appropriate *residential gateway device*) or a computer terminal 16 ...”). Thus, even in a hypothetical combination of Kauffman with a cell phone, the caching would take place upstream of the cell phone. EX2009, ¶173.

3. Any benefits or expectations of success from combining Kauffman and Frerichs apply, if at all, to client devices that are more powerful than cell phones.

Petitioner does not provide any reason why a POSITA combining Frerichs and Kauffman would choose a cell phone as a client, instead of the computer, TV, or set-top box disclosed in both references. Pet, 30-34; EX1006, ¶¶9, 3 (“play the file on an end-user device, such as through a *set-top box* on a *television* or on a *computer display* device.”); EX1004, 1:13-19 (“... the present invention is implemented using a *personal computer* ... The invention can be applied to ... *set top boxes, television, and the like*.”). Any combination of Frerichs and Kauffman would naturally use the same devices. EX2009, ¶174. Frerichs also discloses a wide range of additional clients that are far more lightweight than Kauffman’s clients, including pens. EX1004, 3:46-49 (“*Client* can be ... [a] palmtop, *pen* ...”).

Lightweight Frerichs clients such as pens, PDAs, and cell phones are not suitable for Kauffman, because, for example, they did not play streaming video.

Kauffman discloses putting the caching inserter into a set-top box “at the extreme.” EX1006, ¶9; EX2009, ¶175. Petitioner does not assert that Kauffman’s set-top box could be replaced with a cell phone, nor that a cell phone could have handled streaming video. Pet., 45-53. Indeed, a POSITA would not substitute a 2001-era cellular phone for a set-top box and attempt to insert the caching inserter into a cellular phone. EX2009, ¶176. Kauffman’s set-top box is a specialized computer that is dedicated to functions including processing incoming streaming video and converting it for display on a TV. There is no evidence in this proceeding that any cell phone in 2001 had ever output video for display on a TV or handled streaming video—let alone cached incoming streaming video for later playback, which is an even more difficult task than receiving video and processing it for immediate display. EX2009, ¶176.

Kauffman discloses caching upstream from—not at—TV 12 and computer terminal 16. EX1006, ¶¶9, 3 (“*play the file on an end-user device, such as through a set-top box on a television or on a computer display device.*”). Thus, even computer terminal 16 is not a suitable device for Kauffman’s caching inserter. EX2009, ¶177. The cell phone of Frerichs had far less processing power, RAM, and storage than Kauffman’s computer terminal, and therefore is an even less suitable candidate for

Kauffman's caching inserter. EX2009, ¶177. Thus, any combination with a cell phone would continue to place the caching inserter upstream of, not inside, the cell phone.

Kauffman is directed to streaming video. EX1006, ¶7 ("In accordance with the present invention, a 'caching inserter' system is disposed at a local point of presence (POP) which intercepts a *video stream* destined for an end user."). Petitioner does not address why a POSITA would combine Frerichs' audio clients with Kauffman's video caching. Pet., 30-34 (referring to Frerichs' "audio" and "media," and Kauffman's "multimedia," without ever mentioning "video" or acknowledging that audio media is different than video multimedia); EX2009, ¶178. Dr. Houh admitted at deposition that Frerichs does not use the term "multimedia" and "is primarily talking about the streaming of audio content." EX2011, 92:10-18.

Petitioner only mentions streaming audio, not video. Specifically, Petitioner asserts that a cell phone had "sufficient processing power and memory" for caching streaming audio. Petitioner offers no evidence that a cell phone had sufficient processing power; Houh's declaration merely repeats the unsupported conclusory statement. Pet., 34; EX1003, ¶85. Houh discusses a phone's storage space, but does not address whether a cell phone had sufficient RAM or anything else required for receiving and presenting streaming audio. EX1003, ¶86. Further, even if a cell phone theoretically could have cached streaming audio for later playback, there is no

evidence in this proceeding that cell phones in 2001 could actually perform such caching. EX2009, ¶179.

Dr. Houh did not consider whether cell phones could stream media when forming his opinions. He did not know whether any of the phones he relies on could stream media. EX2011, 156:13-157:2 (“Q. With respect to the Nokia, RIM, and Ericsson devices that you cited in your declaration, do you know if any of those accepted and displayed streaming multimedia content? A. I mean, off the top of my head, I don’t know.”). He could not name any cell phone or application for a cell phone in 2001 that received streaming audio or video—let alone cached streams. *Id.*, 79:21-81:22. He could not even name any type of encoding used for streaming media content in 2001—by *any* device, much less a cell phone. EX2011, 86:15-87:9; EX2009, ¶180.

Adding Kauffman’s caching inserter to a cell phone would pose additional technical challenges that Petitioner, Frerichs, and Kauffman do not address. EX2009, ¶181. Furthermore, these challenges would have been completely unnecessary because a POSITA would simply put Kauffman’s caching inserter upstream of the end-user device—exactly as Kauffman teaches. EX2006, ¶9; EX2009, ¶181.

- c. A POSITA would not have been motivated to combine all three references because such a combination would pose even more challenges than either combination alone.**

Petitioner suggests reasons for combining Frerichs and Kawasaki, and for combining Frerichs and Kauffman. Unsurprisingly, Petitioner does not cite any reason to combine all three references together in order to create its proposed Frankenstein device out of a 2001-era cell phone (Frerichs), a computationally advanced computer system for running neural networks (Kawasaki), and a caching inserter designed to be arranged upstream and outside of an end user's device (Kauffman). Pet., 27-34; EX2009, ¶182.

Petitioner's suggested combination would require a 2001-era cell phone to perform feats that no cell phone from that era ever did or was capable of doing. Petitioner's hypothetical cell phone would need to run artificial intelligence neural networks, while also processing and caching streaming content for later playback on the device. Combining all of those technologies into a cell phone would have been beyond the skill of a POSITA at the time. EX2009, ¶183.

Petitioner considered only the storage of a cell phone for the purpose of caching audio, leaving aside the processor, RAM, and other technical challenges. *See* Section III.B.4.b and Section III.B.4.c (lack of motivation to combine). Even if one considers only the storage of a cell phone, the triple combination was simply not achievable. EX2009, ¶184. Any neural network, and any profile created using the

neural networks, would require storage space on the phone. Therefore, the altered hypothetical Frerichs-Kawasaki combination cell phone would have even less memory remaining for installing software capable of receiving streaming content, and even less memory for caching streamed content for later playback. EX2009, ¶184. Despite these massive storage requirements that would overload a 2001-era cell phone, Dr. Houh considers storage only for the relatively simple suggestion that a 2001-era cell phone that had about 4 MB available for all programs could store 300 KB of audio (for a 30-second audio ad and another 30 seconds of streaming audio). EX1003, ¶86. Petitioner and Dr. Houh do not suggest that the cell phone had sufficient memory for Kawasaki's neural network, let alone sufficient storage for both combinations at once. *Id.*; Pet., 27-34; EX2009, ¶184.

C. Dependent Claims

1. Radio station data is not taken from a message (Claims 2, 3, 10, and 13).

Petitioner fails to demonstrate that claims 2, 3, 10, or 13 are invalid. Dependent claim 2 requires “the provided information” (that is, the information in claim 1 that the cell phone takes from a message) “additionally includes ... preferences,” “content played,” or other data. Petitioner refers to Frerichs users listening to radio stations and asserts that the radio station data may be included in a user profile and therefore qualifies as the “preference” or “content played” of claim 2. Pet., 53-54. Dependent claims 10 and 13 are similar to claim 2, and Petitioner

simply refers to its discussion of claim 2. Pet., 64, 69. Claim 3 depends from claim 2, and requires that “the information” also includes “a radio station broadcast” or other data. Petitioner does not provide any additional substance except an assertion that the radio stations play radio station broadcasts. Pet., 54-55; EX2009, ¶112.

The radio stations that a user listens to are not taken from a message as claim 1 requires. Petitioner does not allege otherwise, and does not even cite anything in Frerichs for the claim limitation “[1.1.2] the information taken by the cellular device from a message ...” Pet., 38-45; EX2009, ¶113.

2. The recorded ad is not determined using information taken from a message (Claims 4 and 11).

Petitioner fails to demonstrate that claims 4 or 11 are invalid. Claim 4 requires the cell phone of claim 1 to receive and record “the” determined ad (*i.e.*, the ad that the server in claim 1 determined using information taken from a message) before playing the ad. Dependent claim 11 is similar, and Petitioner simply refers back to its discussion of claim 4. Pet., 64; EX2009, ¶114.

Petitioner cites passages from Frerichs regarding a client with a locally-stored ad, and passages from Kauffman regarding caching an ad. Pet., 56-57. Those ads are not determined using information taken from a message as claim 1 requires, and Petitioner does not allege otherwise. Pet., 55-57. Indeed, Petitioner tacitly concedes that Frerichs and Kauffman do not disclose that claimed concept: Petitioner does not cite anything in Frerichs or Kauffman for limitation “[1.1.2] the information taken

by the cellular device from a message ...,” and does not even mention Kauffman in its discussion of limitation 1.2 “... advertisement is determined by the server based at least in part on the provided information.” Pet., 38-45; EX2009, ¶115. Further, Dr. Houh is “not relying on Kauffman for [his] analysis for Claim Element 1.2.” EX2011, 93:11-94:4.

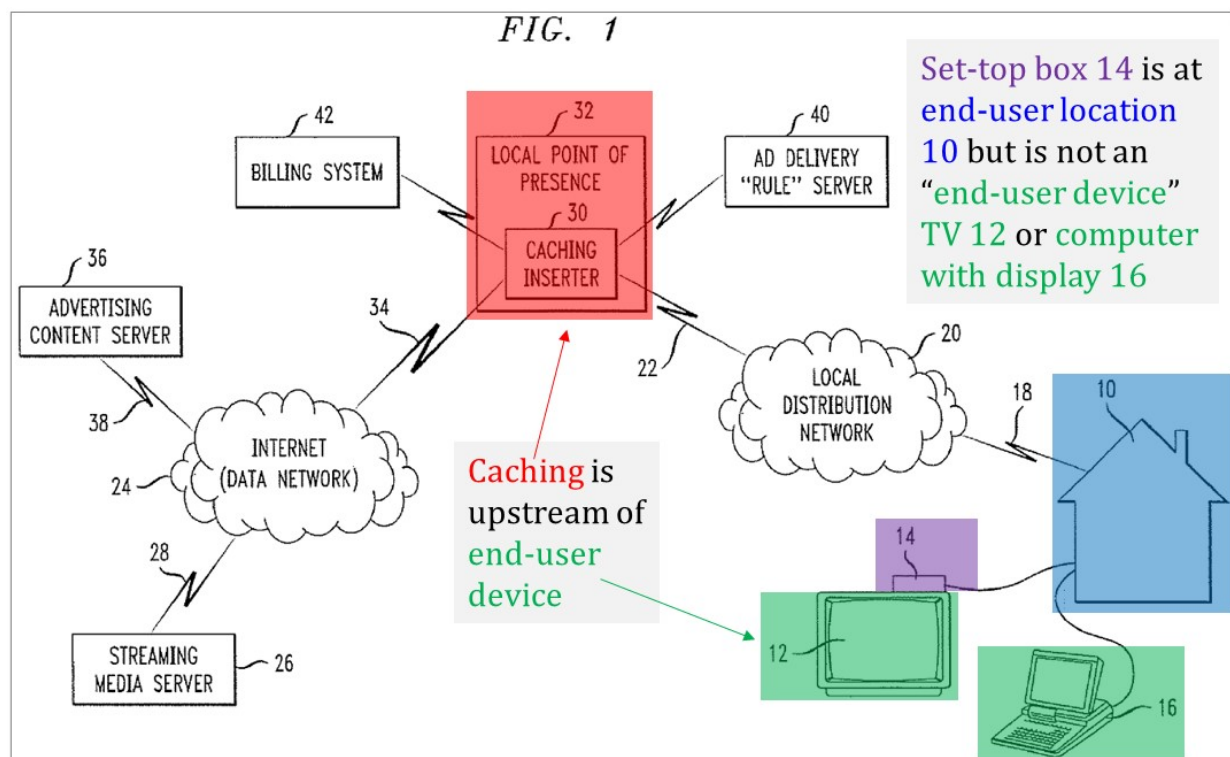
3. The prior art does not disclose a cell phone that receives a streaming ad while recording another stream of content (Claim 7).

Dependent claim 7 requires that the cellular device of independent claim 1 receives a stream for “the at least one determined advertisement,” *i.e.*, the ad that is played on the cellular device of claim 1 while the cellular device pauses and records other streaming content. EX2009, ¶116.

Petitioner and Dr. Houh admit that Frerichs does not cache as required by the limitations 1.3.1-3. Pet., 32 (“... *caching* streaming media content during the playback of an advertisement, *so that the streaming media content* can then be *resumed* after completion of the advertisement content, which is *not explicitly taught by Frerichs*”); EX2011, 67:13-18, 73:4-7. Put another way, Petitioner admits that no client in Frerichs plays any ad—streamed or not—while pausing and recording the non-ad streaming content. EX2009, ¶117. Further, claim 7 requires that the substituted ad is streamed, but Petitioner does not allege that Frerichs streams the substitute ad. Pet., 59-60.

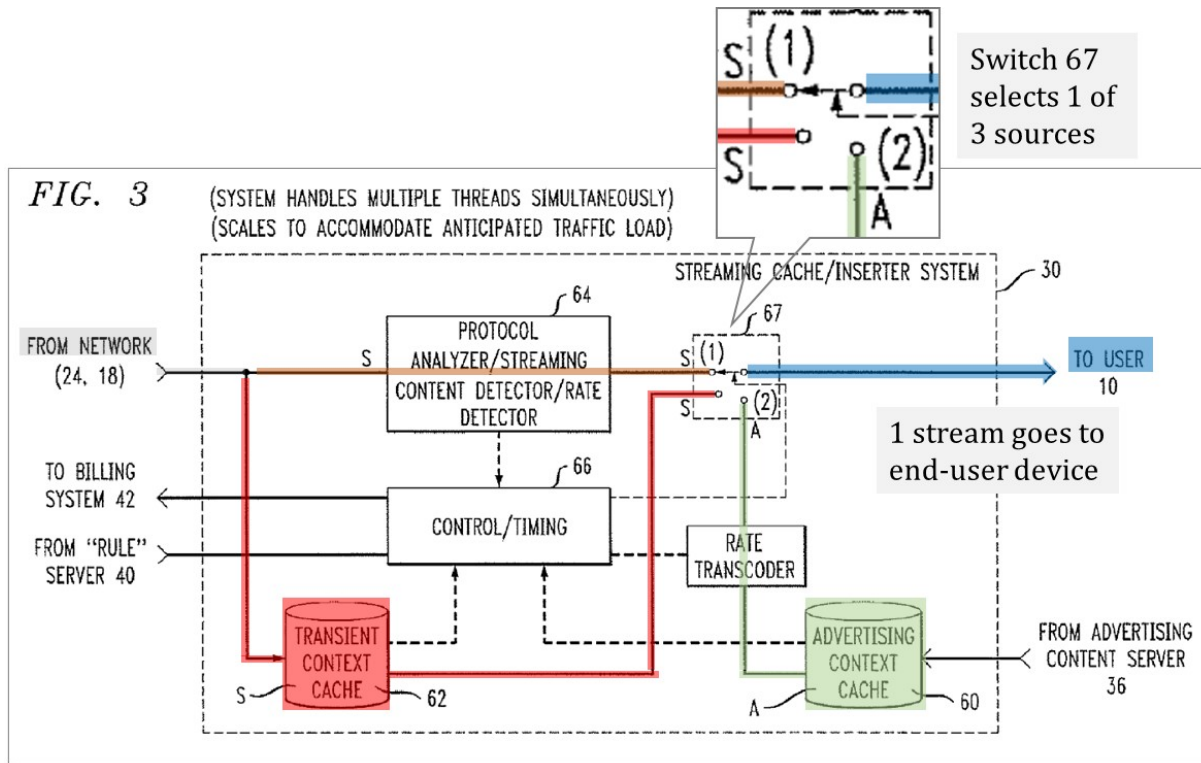
Despite its admission that Frerichs does not teach the claimed caching, Petitioner cites Frerichs passages that are irrelevant because they refer to a single stream that already includes an ad (EX1004, 4:54-56), or that has an ad inserted into it without the use of caching (EX1004, 4:44-46). Pet 59, citing Frerichs 4:44-46 and 4:54-56, and citing EX1003, ¶177, which merely echoes the Petition language. A single stream does not demonstrate recording one stream of content while playing a streamed ad, as claim 7 requires. Rather, a single stream that already includes ads similar to a normal radio broadcast: the client simply plays whatever it receives, ad or otherwise, without caching another stream of content. Inserting an ad into a stream does not show caching the stream for later playback while the inserted ad is played: Frerichs inserts an ad without caching the streamed content for later playback. EX2009, ¶118. The original content is played at a lower volume, or ignored—but not cached. EX1004, 12:14-16 (“the method *reduces* a *volume* intensity of the *streaming audio* and places the *advertisement on top of the streaming audio*”); EX2009, ¶118.

Petitioner also cites Kauffman for the notion of caching a streamed ad. Pet., 59-60, citing EX 1003, ¶178, which merely repeats the Petition language. Kauffman does not disclose sending two streams to the device that plays content, as claim 7 requires. Instead, content is played on a device that receives only a single stream from the upstream caching inserter. EX2009, ¶119.



EX1006, FIG. 1 (annotated); *see also* Section III.B.3 (discussion of Kauffman for independent claim 1).

The upstream caching inserter receives streaming multimedia content, or an ad, caches them as needed, and outputs only one stream to the device that presents the content (*e.g.*, the TV). EX2009, ¶120.



EX1006, FIG. 3 (annotated).

Specifically, Kauffman sets switch 67 to one of three positions to select only one of three sources to output to the end-user device: the (1) un-cached requested stream, (2) inserted ad, or (3) cached requested stream:

FIG. 3 illustrates an exemplary caching inserter 30 ... multimedia stream *MM* can be played coupled in real time to end-user 10, indicated as position (1) of switch 67 of inserter 30. When ... advertisement stream *A* is ready to be played ... the switch ... move[s] to position (2), allowing the cached advertisement stream *A* to be sent to end-user 10. ... When ... the end of the advertisement has been reached, a signal to move switch 67 to position (3) will be sent, allowing the cached multimedia stream to be sent to end-user 10.

EX1006, ¶24 (note that position (3) is not written in Figure 3 but relates to the third (cached) input that the switch can select, highlighted in red in the annotated figure); EX2009, ¶121. Kauffman outputs either the requested stream, or the ad, but not both. When an ad is to be played, the requested multimedia is cached and not output, and the ad is output in “place” (*i.e.*, instead) of the requested stream, so that a single stream is sent to the end-user device “in a seamless manner.”

In accordance with the present invention, once caching inserter 30 has an advertisement file available (either stored, or available as a stream from the advertisement server), the incoming (*requested*) *multimedia* file *destined for end-user 10* can be *cached*, and the *advertisement* multimedia file *streamed in its place* to end-user 10 *in a seamless manner*.

EX1006, ¶20; EX2009, ¶122.

Thus, in Kauffman, all caching is handled upstream of the device that plays content. Content is played on a device that simply displays whatever is in the single stream it receives, including any ad that happens to be in that single stream, without caching a second streaming ad as claim 7 requires. EX2009, ¶123.

IV. CONCLUSION

For the foregoing reasons, Petitioner fails to demonstrate that the prior art renders obvious any challenged claim of the '414 patent. Accordingly, the Board should confirm the patentability of all challenged claims.

Respectfully submitted,

/ David L. Alberti /

David L. Alberti
Registration No. 43,465
Counsel for Patent Owner

Date: September 14, 2023

577 Airport Boulevard, Suite 250
Burlingame, California 94010
(650) 825-4300

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Respectfully submitted,

/ David L. Alberti /

David L. Alberti
Registration No. 43,465
Counsel for Patent Owner

Date: September 14, 2023

577 Airport Boulevard, Suite 250
Burlingame, California 94010
(650) 825-4300

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The undersigned hereby certifies that the foregoing **PATENT OWNER RESPONSE** and **EXHIBITS 2009-2031** were served electronically via e-mail on September 14, 2023, in their entireties on the following counsel of record for Petitioner:

Andrew S. Ehmke (Lead Counsel)
Raghav Bajaj (Back-up Counsel)
Calmann J. Clements (Back-up Counsel)
HAYNES AND BOONE, LLP
andy.ehmke.ipr@haynesboone.com
raghav.bajaj.ipr@haynesboone.com
calmann.clements.ipr@haynesboone.com

Respectfully submitted,

/ David L. Alberti /

David L. Alberti
Registration No. 43,465
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Burlingame, California 94010
(650) 825-4300