

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

ADOBE INC.,
Petitioner

v.

JONATHAN E. JAFFE,
Patent Owner

Inter Partes Review No. IPR2024-01352
U.S. Patent No. 6,757,828

PATENT OWNER'S PRELIMINARY RESPONSE

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Patent Owner's Exhibit List

Exhibit No.	Description
2001	IEEE, “Official IEEE 802.11 Working Group Project Timelines” (Nov. 21, 2024)
2002	Claim Construction Scheduling Order issued in in <i>Jaffe v. Adobe Inc.</i> , Case No. 2:23-cv-06224-JWH(MAAx) (C.D. Cal.)
2003	Docket Navigator, “How Top US Patent Courts Compare on Median Time-to-Trial Statistics” (June 27, 2022)
2004	Plaintiff’s Original Complaint filed in <i>Jaffe v. Adobe Inc.</i> , Case No. 2:23-cv-06224-JWH(MAAx) (C.D. Cal.)

Pursuant to 35 U.S.C. § 313 and 37 C.F.R. § 42.107, Patent Owner Jonathan E. Jaffe (“Patent Owner” or “Jaffe”) hereby submits its Patent Owner Preliminary Response.

I. INTRODUCTION

The Board should deny the present request for *inter partes* review of U.S. Patent No. 6,757,828 (EX1001, hereinafter “the ’828 patent”). Petitioner presents arguments in four sets of grounds, all of which fail for largely the same reasons. More specifically, claim 1 of the ’828 Patent recites “a sensor, which is tightly coupled to said memory.” Petitioner argues that this claim language should be construed as “a sensor coupled to said memory via conductive traces or leads.” Because the ’828 Patent relates to the authentication of digital photographs and images, the sensor discussed is a digital camera sensor for capturing photographic images.

However, Petitioner fails to show that any of the cited references meet Petitioner’s proposed claim construction language. In particular, the prior art structures cited against the “sensor, which is tightly coupled to said memory” limitation: (1) fail to disclose or suggest how any camera sensor is physically connected to any memory; and (2) fail to disclose or suggest that any connection is made by *conductive traces or leads*, as Petitioner’s construction includes in the claim. Accordingly, because this element is part of claim 1 of the ’828 Patent, and

each challenged claim depends from claim 1, each of Petitioner's prior art grounds fails.

Petitioner's cited references also fail to disclose numerous other elements in independent claim 1. For example, claim 1 also requires "monitoring the integrity of the tight coupling between said memory and said sensor." But, because Petitioner fails to show any tight coupling under Petitioner's proposed construction, Petitioner also fails to show this element. As another example, claim 1 requires "generating an error signal" and "generating an ok signal" that are, respectively, displayed to the user depending upon whether or not the digital images have been indicated to be authentic. However, the references in the field of digital image security cited by Petitioner fail to disclose displaying such notification signals to users.

Finally, Petitioner's arguments against discretionary denial should also be denied. The co-pending district court litigation involving Petitioner and Patent Owner is in the Central District of California, which has a comparatively fast median time to trial and which has already held a claim construction hearing in the pending district court litigation. There is no need for the Board to waste valuable resources in a race against the co-pending proceedings, which has already undergone significant proceedings and will undergo significantly more before any final resolution of the Petition by the Patent Office.

For all of these reasons, institution should be denied.

II. OVERVIEW OF THE '828 PATENT

The '828 Patent generally relates to authentication of digital files by using aspects of the environment in which the digital file was created including, but not limited to, date, time, latitude, longitude, altitude, roll, pitch, yaw, and compass heading. EX1001 at 2:65-3:6. The '828 Patent was prescient in recognizing that, in the digital age, “the ability to alter images” had been brought to the “neophyte level.” *Id.* at 1:27-29. Indeed, in just the last few years the concern of digital alteration has been brought to the forefront as generative artificial intelligence and “deep fake” videos have begun to take hold.

The '828 Patent employs a method of creating and later determining a digital file's authenticity. The invention uses a digital signature that is created using the file “as well as at least one parameter that is representative of at least one condition under which the digital sample was acquired.” *Id.* at 1:54-57. As described above, the parameter could be any number of things such as the date and time the file was created, or the compass heading or altitude under which the digital file was made. *Id.* at 2:65-3:6. The file is then stored in memory, and/or removable storage media, together with the parameter and digital signature. *Id.* at 1:57-59. The method then determines authenticity of the file by creating a second signature from the stored file and at least one of the parameters and then comparing the signatures. *Id.* at 1:59-62. The patented method offers several improvements over the prior art. For example,

authentication is not dependent on the identity of the device that created the digital file, such as a specific digital camera. Instead, the digital file itself contains the authentication information and the signature authenticates the file. *Id.* at 1:64-67. In addition, the invention dispenses with the need for encryption which has a number of cost savings and convenience benefits. *Id.* at 1:67-2:3.

III. CLAIM CONSTRUCTION¹

Petitioner appears to argue that three terms from the '828 Patent require construction. Patent Owner disagrees with Petitioner's proposed constructions for "a sensor, which is tightly coupled to said memory" and "monitoring the integrity of the tight coupling between said memory and said sensor" as being incorrect for the reasons stated below. However, despite arguing for the proposed constructions for these terms, Petitioner fails to show that the references teach the limitations under their own proposed constructions. Consequently, institution should ultimately be denied because the Petition fails to explain how the references teach the limitations pursuant to the claim constructions argued for by Petitioner itself.

¹ Patent Owner only addresses the constructions relevant to this Preliminary Response. In the event that this Petition is instituted, Patent Owner reserves the right to raise different or additional claim construction issues in its Patent Owner Response.

A. “a sensor, which is tightly coupled to said memory” (cl. 1)

Patent Owner does not agree that the term “a sensor, which is tightly coupled to said memory” means “a sensor coupled to said memory via conductive traces or leads” as Petitioner asserts. During prosecution, the patentee merely explained that the purpose of being “tightly coupled” means the processor and memory are coupled such that “there is no possibility for altering the image before the authentication information is generated.” EX1002 at 12. The specification reiterates this language from the file history by stating “[t]here can be nothing that can possibly alter the recording before the authentication information is generated.” EX1001 at 3:18-20. The file history further explains that the purpose of the tight coupling, stating, “[b]ecause the processor is ‘tightly coupled’ to the memory, it will be virtually impossible for a user to supply false information to the memory by breaking the conductive trace or lead between the memory and the processor.” EX1002 at 277. Therefore, a POSITA would readily understand that the sensor and memory are “tightly coupled” where they are coupled in such a way that the data stream cannot be altered before authentication information is generated.

Petitioner’s proposed construction, “a sensor that is connected to said memory within a device,” cannot be correct given it dispenses with the “tightly” or “tight” coupling, needlessly substitutes “connection” for “coupling,” and imports a limitation that the sensor and memory must be connected “within a device.” It is a

“first principle” of claim construction that “all words in a claim are presumed to add meaning to the claim.” *Traffix Devices, Inc. v. Lakeside Plastics, Inc.*, 2007 WL 9758421, at *1 (C.D. Cal. Mar. 22, 2007), *aff’d*, 276 F. App’x 972 (Fed. Cir. 2008) (citing *Primos, Inc. v. Hunter’s Specialties, Inc.*, 451 F.3d 841, 848 (Fed. Cir. 2006); *Innova/Pure Water, Inc. v. Safari Water Filtration Sys., Inc.*, 381 F.3d 1111, 1119 (Fed. Cir. 2004)). Petitioner’s construction, which removes “tightly” from the claim, therefore cannot be correct. The claim requires more than simply a “connection” between the processor and the memory. There must be a tight coupling, which is a coupling that means “[t]here can be nothing that can possibly alter the recording [i.e. data stream] before the authentication information is generated.” EX1001 at 3:18-20.

Petitioner’s proposed construction is further improper because it imports a limitation into the claim that the sensor and memory be connected “within a device.” *Howmedica Osteonics Corp. v. Wright Med. Tech., Inc.*, 540 F.3d 1337, 1345 (Fed. Cir. 2008) (declining to impute a limitation into a disputed claim term in the absence of a clear *requirement* in the specification, even where “every disclosure of [the disputed term] in the specification shows [the alleged limitation]”). However, neither the claims nor the specification of the ’828 Patent *require* that the sensor and memory be tightly coupled, coupled, or connected “within a device.” Indeed, one of the embodiments of the ’828 Patent expressly contemplates that a sensor and

processor in two different devices may be tightly coupled. As Figure 1 illustrates, a general purpose computer may be used to simulate the processor of an external camera described by Figure 2A. The mouse and keyboard can simulate the user's settings. EX1001 at 4:41-43.

FIG. 1

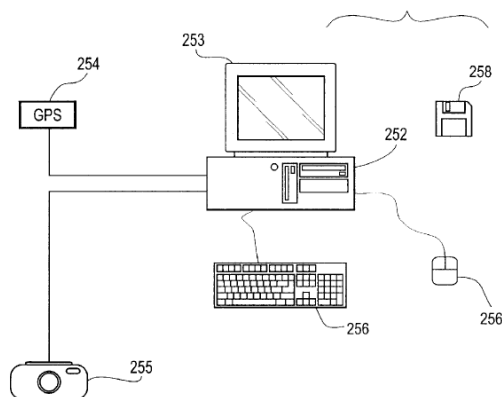
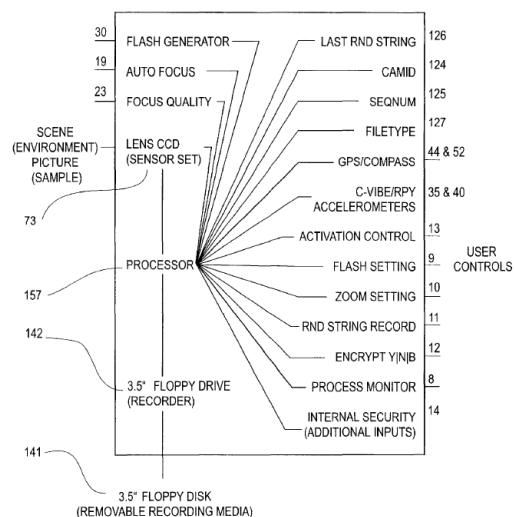


FIG. 2A



Therefore, the invention clearly contemplates a scenario in which a processor and memory could be tightly coupled but not within a device or not within a single device. As a result, Petitioner's proposed construction, which would exclude this embodiment, cannot be correct. *CUPP Computing AS v. Trend Micro Inc.*, 53 F.4th 1376, 1381 (Fed. Cir. 2022) ("a claim interpretation that excludes a preferred embodiment from the scope of the claim is rarely, if ever, correct.").²

² Although Patent Owner disputes Petitioner's proposed construction, Petitioner fails to show that the references in the Petition meet Petitioner's proposed construction.

B. “monitoring the integrity of the tight coupling between said memory and said sensor” (cl. 1)

Petitioner’s proposed construction imports limitations and substitutes words unnecessarily which contrary to the plain meaning of the claims. Petitioner’s proposed construction needlessly substitutes “determining” for “monitoring” without identifying any basis for making a substitution in wording. *C.R. Bard, Inc. v. U.S. Surgical Corp.*, 388 F.3d 858, 863 (Fed. Cir. 2004) (“[M]erely rephrasing or paraphrasing the plain language of a claim by substituting synonyms does not represent genuine claim construction.”). Defendant’s proposed construction also ignores and deletes “tight” from the claim language. *Primos, Inc.*, 451 F.3d at 848. Petitioner’s proposed construction similarly also improperly imports a limitation requiring “physical access.” *Howmedica*, 540 F.3d at 1345. Petitioner appears to find this limitation from the file history in which the applicant explained the “monitoring” step by referring to Figure 4A as an exemplary disclosure that “means

As such, although Patent Owner disputes Petitioner’s proposed construction, Patent Owner has applied Petitioner’s proposed construction for this term for purposes of this Preliminary Response. Patent Owner reserves the right to present further claim construction argument, including expert evidence regarding why Petitioner’s proposed construction is incorrect and the correct construction that should be applied in Patent Owner’s response in the event that the Board institutes any inter partes review in response to the Petition.

that, for example, a signal is generated if the device that prevents physical access to the interconnections between the sensor set and memory is broken.” EX1002, 290. However, neither the claims of the ’828 Patent nor the specification suggest that “monitoring” the “tight coupling” is limited to situations in which “physical access” is gained. The file history itself states that the signal generated if there is a break between a physical connection between the sensor and memory is merely an example. *Id.* It is further unclear what “physical access” to the “connection between said memory and said sensor” means. Indeed, under Defendant’s proposed construction, digital alterations (which the ’828 Patent clearly contemplates) of an image would not qualify as a “physical access” that had been gained between the sensor and memory coupling.

However, although Patent Owner disagrees with Petitioner’s proposed construction, Patent Owner believes that the Board need not resolve this construction for the purposes of its decision on institution.

C. “based on” (cl. 1)

The Petition identifies the term “based on” which is in claim 1 for claim construction. Pet at 11-14. However, Petitioner never identifies a proposed construction for this term. Instead, Petitioner argues that “based on” is an open-ended term. However, “[o]pen-ended claims are not inherently improper; as for all claims their appropriateness depends on the particular facts of the invention, the

disclosure, and the prior art.” *Andersen Corp. v. Fiber Composites, LLC*, 474 F.3d 1361, 1376 (Fed. Cir. 2007) quoting *Scripps Clinic & Research Found. v. Genentech, Inc.*, 927 F.2d 1565, 1572 (Fed.Cir.1991). Here, the parameters are clearly described in the specification as “representative of at least one condition under which the digital sample was acquired.” EX1001 at 1:54-57. The specification then provides several examples of a parameter such as “date, time, latitude, longitude, altitude, roll, pitch, yaw, and compass heading, [as well as] camera identification, image sequence number, flash status, lens zoom factor, counter vibration status, focus status and focus quality.” *Id.* at 2:67-3:6. A POSITA would clearly understand this term in the context of the claims and the specification, and therefore this term is not indefinite. This is further confirmed by the district court’s tentative claim construction ruling, which found this term to be not indefinite. EX1020, 18. Because the Petition does not propose a construction for this term, however, this response presumes that it has its plain and ordinary meaning and does not otherwise require construction.

However, although Patent Owner disagrees with Petitioner’s proposed construction, Patent Owner believes that the Board need not resolve this construction for the purposes of its decision on institution.

**IV. PETITIONER HAS FAILED TO DEMONSTRATE A REASONABLE
LIKELIHOOD THAT THE CHALLENGED CLAIMS ARE
UNPATENTABLE³**

A. Ground 1: Glass Fails to Render Obvious the Challenged Claims

1. Claim 1

**(a) Glass Fails to Disclose a “storing a data stream in a
data file in a memory” [limitation 1a]**

Claim 1 requires, in part, “storing a data stream in a data file in a memory.”

Petitioner identifies a portion of Glass for teaching this limitation. Pet. at 24, citing EX1005 at 4:58-62. More specifically, Petitioner argues that an “image” is the “data stream.” Pet. at 24. However, examining the cited portion of Glass shows that, in the embodiment being described, “a camera ... collect[s] the biometric data from the user.” EX1005 at 4:55-58. Glass states that “the biometric data will be an analog representation of an image which is then digitized and stored for later transfer.” *Id.* at 4:58-60. Glass indicates that it “digitizes the image and then stores it in the imaging system 4 for later processing and transfer.” *Id.* at 4:60-62. However, this portion of Glass does not disclose “storing a data stream *in a data file*” as limitation 1a requires. Tellingly, this portion of Glass does not mention files at all.

³ In this preliminary response, Patent Owner only presents arguments against institution of this Petition. In the event that this Petition is instituted, Patent Owner reserves the right to raise additional or different arguments in its Patent Owner Response.

Petitioner appears, however, to confuse image data, which Petitioner identifies as the “data stream” with the “biometric data” described in Glass, using the terms interchangeably. *See* Pet. at 25. However, Glass in fact teaches that, although biometric data is based upon the image data from the camera, they are distinct:

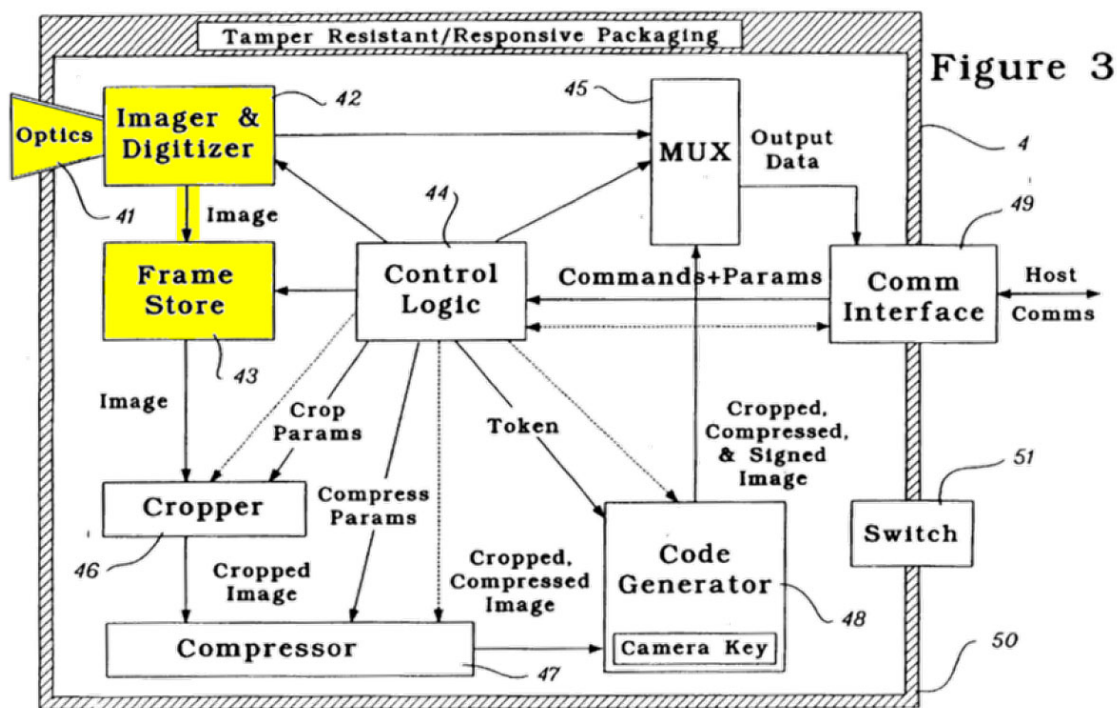
The digital representation of the image (i.e. the raw or unprocessed image data) is then processed by an algorithm which *converts the image data into a particular representation, called a biometric template*. The biometric template is suitable for matching against a previously stored template to verify the individual's identity or against multiple templates to identify an individual.

EX1005 at 1:40-47 (emphasis added). Although the biometric data is *based on* the image data, it is not the *image data itself* (i.e., the purported “data stream” identified by Petitioner). And, therefore, even if biometric data may be stored in a data file in Glass does not teach that the image data, or any other data stream from the camera in Glass, is stored in a data file as required by limitation 1a.

(b) Glass Fails to Disclose a “utilizing a sensor, which is tightly coupled to said memory, to generate at least one internal and unique parameter” under Petitioner’s own Proposed Claim Construction [limitation 1b]

As discussed above, Petitioner asserts that the claim language “a sensor, which is tightly coupled to said memory” should be construed as “a sensor coupled to said memory *via conductive traces or leads.*” *See supra.* at III.A, Pet. at 9-10. Although Patent Owner does not agree that this construction is correct (*see supra.* at III.A), in the event that the Board adopts Petitioner’s proposed construction for purposes of deciding whether inter partes review should be instituted, Petitioner fails to identify any teaching in Glass showing that the sensor (or camera) is coupled to the memory via “conductive traces or leads.” Pet. at 26-29.

Instead, Petitioner first makes the conclusory assertion the sensor and memory are coupled by “conductive leads or traces.” Pet. at 26-27. However, Petitioner cites nothing from Glass disclosing that the sensor and the memory are coupled by conductive leads and traces. Instead, Petitioner summarily cites to the declaration of its expert, Dr. Xiong. However, Dr. Xiong also fails to identify anything in Glass showing that the sensor and the memory are coupled by conductive leads and traces. EX1003 at ¶171. Instead, Dr. Xiong merely notes that Figure 3 illustrates a connection (via an arrow) between “Imager & Digitizer 42” and “Frame Store 43” in Glass:



Id. However, Dr. Xiong’s declaration concedes that Figure 3 of Glass only depicts that there is a “data path from the sensor to memory.” *Id.* However, the existence of a data path is not sufficient to show a connection by “conductive leads or traces” as Petitioner’s construction requires.

For example, computers connected to the Internet have a data path to share information between the computers. However, computers connected through the Internet, although having a data path to share information, are not connected by “conductive leads or traces.”⁴

⁴ To take one example of connections known at the time of the filing of the ’828 Patent that would not plainly not involve “conductive traces or leads” as Petitioner’s

Petitioner next argues that Figure 2A “illustrates a processor 157 which is ‘tightly coupled’ to a memory” and citing the prosecution history of the ’828 Patent. Pet. at 27 (citing EX1002 at 277). However, the prosecution history does not indicate that every line in Figure 2, and in every Figure generally, illustrates tight coupling. In fact, the ’828 Patent repeatedly recites specifically that the sensor is tightly coupled to the memory, specifically stating, “A key to verifiable authenticity is to insure that the authentication information generation is tightly coupled to the sensor set and recorder.” EX1001 at 3:16-18. The ’828 Patent further recites, “During the operation of the camera, internal security 14 is monitored to detect the integrity of the tight coupling of the sensor set and the recorder 6.” EX1001 at 4:65-67. As such, it is not the mere presence of a line in Figure 2 that denotes the tight coupling, but rather the description of the coupling from the specification itself.

proposed construction requires, several Wi-Fi standards, including the 802.11a standard and the 802.11b standard, were available prior to the filing of the ’828 Patent. EX2001 (listing the approval dates for IEEE standards, including IEEE Std. P802.11a-1999 as early as September 16, 1997 and IEEE Std. P802.11b-1999 as early as December 9, 1997). Communications over Wi-Fi, which are wireless, would involve the sharing of information through a data path, but such wireless data paths would not involve “conductive traces or leads” under any meaningful interpretation of that language.

Further, neither Petitioner nor Petitioner's expert offers any opinion arguing or showing that Petitioner's proposed construction is inherent in Glass or in the prior art. Moreover, neither Petitioner nor Petitioner's expert offers any non-conclusory opinion showing why Petitioner's proposed construction, especially including Petitioner's proposed "conductive traces or leads" construction, is satisfied.

Because Petitioner fails to show that Glass discloses "a sensor, which is tightly coupled to said memory" under Petitioner's own proposed claim construction, the Petition fails to show that Glass teaches limitation 1b of claim 1.

(c) Glass Fails to Disclose "monitoring the integrity of the tight coupling between said memory and said sensor" under Petitioner's own Proposed Claim Construction [limitation 1c]

As discussed above, Petitioner fails to show that Glass discloses "a sensor, which is tightly coupled to said memory" under Petitioner's own proposed claim construction. *See supra.* at IV.B.1.b. It therefore follows that, because Petition fails to show the existence of the tight coupling between the memory and the sensor, the Petition likewise fails to show that Glass discloses "monitoring the integrity of the tight coupling between said memory and said sensor" under Petitioner's own proposed construction for the same reasons.

However, Petitioner fails to show that Glass discloses this limitation for additional reasons. Petitioner identifies that Glass utilizes "tamper-resistant

packaging” in order to prevent access to the internal components illustrated in Glass Figure 3. Pet. at 30. But this confuses the *passive* process of preventing intrusion with the *active* process of “monitoring” as recited in claim 1. See Pet. at 31 (“Glass states that ‘[t]he tamper resistant package can be passive in that any opening to the device will cause its ultimate destruction.’”).

Petitioner notes that Glass includes an “alternative design” in a switch “will signal the control logic 44 (which could be implemented by a microcontroller) to return to a non-functioning state similar to that found during assembly.” Pet. at 31 (citing EX1005 at 5:26-30). However, claim limitation 1c requires “monitoring the integrity of the tight coupling between said memory and said sensor when said at least one internal and unique parameter is generated.” The alternative design is therefore distinguishable for at least three reasons. First, the monitoring of limitation 1c is directed to “the integrity of the tight coupling between said *memory* and said *sensor*.” However, the switch described in Glass is directed to the “entire package which contains the imaging system 4” rather than to the coupling between the memory and the sensor as recited in limitation 1c. EX1005 at 5:13-16. Second, the limitation is directed to the “*integrity* of the tight coupling,” but nothing in the description of the tamper-resistant package is directed to insuring the integrity of the tight coupling between the sensor and the memory. EX1005 at 5:13-41. In other words, any monitoring is not directed at the coupling, nor more specifically the

integrity of the coupling. Third, as explained above, Petitioner asserts that the term “a sensor, which is tightly coupled to said memory” means “a sensor coupled to said memory via conductive traces or leads.” *See supra.* at III.A. Nothing in the description of Glass’s tamper-resistant package is directed to, or even mentions, whether the coupling between any sensor and any memory is by conductive traces or leads, let alone insuring the integrity of any such traces or leads. *See also supra.* at IV.A.1.b.

Because Petitioner fails to show that Glass discloses “monitoring the integrity of the tight coupling between said memory and said sensor,” nor does Petitioner show that Glass meets Petitioner’s own proposed claim construction, the Petition fails to show that Glass teaches limitation 1c of claim 1.

(d) Glass Fails to Disclose “generating an error signal that is displayed to a user to indicate that said stored data stream is not authentic” [limitation 1g]

Glass fails to disclose this limitation. More specifically, in the event that two signatures are not the same, the limitation requires “generating an error signal that is displayed to a user to indicate that said stored data stream is not authentic.” However, Glass fails to generate an error signal that is displayed to a user. Rather, as Petitioner concedes, Glass only discloses maintaining a “record of the transaction” on the server. EX1005 at 10:54-58. Petitioner argues that this “describes maintaining a log file recording each step of the image authentication process.” Pet.

at 36. However, this only means, even under Petitioner’s argument, that a *file* on the *server* is updated with the result of each transaction. First, all transactions are logged and, as such, there is no “error signal” as recited in claim limitation 1g. EX1005 at 9:61-64 (“We prefer to log *each step* of the transaction as indicated by the word Log. We also prefer to provide a clock 18 which is used in checking time-stamped data as well as recording the time of *each transaction*.”). Second, there is no disclosure in Glass describing that it would be “displayed to the user” as opposed to merely being logged in the file with the results of all other transactions. *Id.*

Because Petitioner fails to show that Glass discloses “generating an error signal that is displayed to a user to indicate that said stored data stream is not authentic,” the Petition fails to show that Glass teaches limitation 1g of claim 1.

(e) Glass Fails to Disclose “generating an ok signal that is displayed to a user to indicate that said stored data stream is authentic” [limitation 1g]

Glass fails to disclose this limitation for the same reasons as for limitation 1g. *See supra.* at IV.A.1.d. More specifically, this limitation requires “generating an ok signal that is displayed to a user to indicate that said stored data stream is authentic.” However, Glass fails to generate an “ok” signal that is displayed to a user. Glass discloses maintaining a “record of the transaction” on the server. EX1005 at 10:54-58. Petitioner argues that this “describes logging each step of the authentication process.” Pet. at 38. However, as above, this only means that a file on the server is

updated with the result of each transaction. First, because all transactions are logged there is no “ok signal” as recited in claim limitation 1h. EX1005 at 9:61-64 Second, there is no disclosure in Glass describing that it would be “displayed to the user” as opposed to merely being logged in the file with the results of all other transactions. *Id.*

Because Petitioner fails to show that Glass discloses “generating an ok signal that is displayed to a user to indicate that said stored data stream is authentic,” the Petition fails to show that Glass teaches limitation 1h of claim 1.

2. Claims 2-6

Claims 2 through 6 depend from claim 1. Ex. 1001, cls. 2-6. Petitioner’s arguments in Ground 1 for claims 2 through 6 are therefore based on Petitioner’s arguments for Ground 1, claim 1, from which they depend, which fail as discussed above. Pet. at 38-41; *supra.* at IV.A.1.a-IV.A.1.e Thus, Petitioner has not demonstrated that claims 2 through 6 are invalid.

B. Ground 2: Rieger Fails to Render Obvious the Challenged Claims

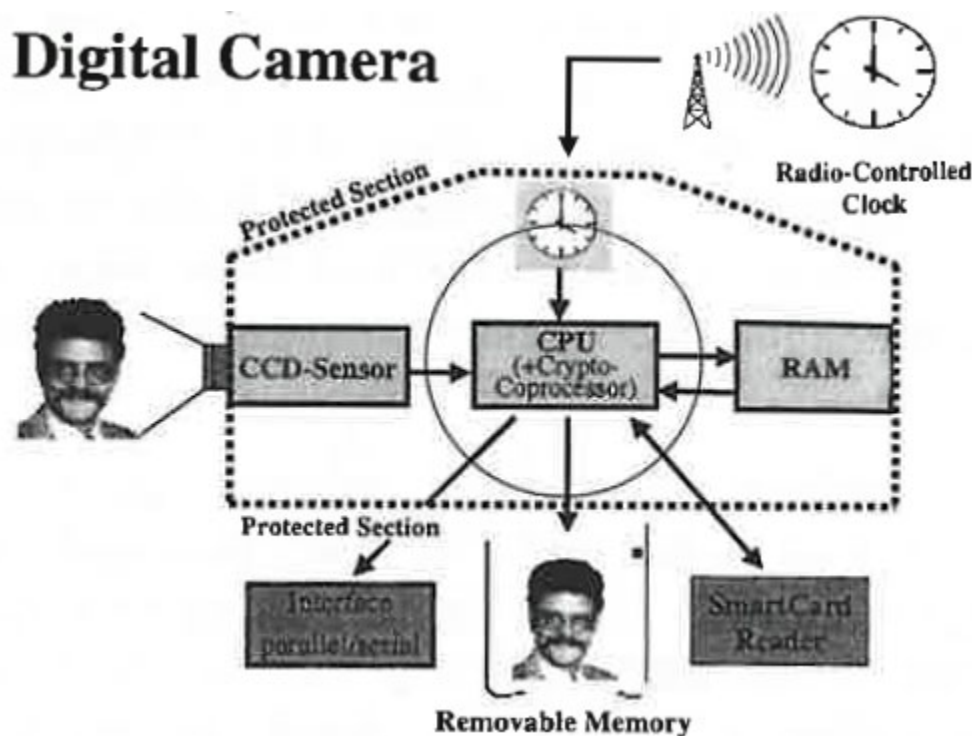
1. Claim 1

(a) Rieger Fails to Disclose a “utilizing a sensor, which is tightly coupled to said memory, to generate at least one internal and unique parameter” under Petitioner’s own Proposed Claim Construction [limitation 1b]

Rieger fails to meet this limitation for similar reasons as Glass. *See supra.* at IV.A.1.b. Claim 1 requires, in part, “utilizing a sensor, which is tightly coupled to

said memory, to generate at least one internal and unique parameter.” As previously discussed Petitioner asserts that the claim language “a sensor, which is tightly coupled to said memory” should be construed as “a sensor coupled to said memory *via conductive traces or leads.*” *See supra.* at III.A, Pet. at 9-10. Although Patent Owner does not agree that this construction is correct (*see supra.* at III.A), in the event that the Board adopts Petitioner’s proposed construction for purposes of deciding whether inter partes review should be instituted, like Glass, Petitioner fails to identify any teaching in Rieger showing that the sensor (or camera) is coupled to the memory via “conductive traces or leads.” Pet. at 26-29.

Petitioner first identifies that Rieger describes a digital camera which includes a “Protected Section” which includes several components including a CCD sensor, a CPU, RAM, and an internal clock. Pet. at 44, citing EX1005 at 4, Fig. 3. Petitioner argues that the CCD sensor is “electrically connected” to the memory in Rieger’s Fig. 3. Pet. at 44. However, Petitioner misrepresents the teaching of Rieger, because the Figure in fact illustrates a one-way connection from the CCD-Sensor to the CPU, and the figure in turn depicts a two-way connection between the CPU and RAM. Figure 3 illustrates no direct connection between the CCD-Sensor and RAM, by conductive traces or otherwise.



Rieger, Figure 3

Petitioner attempts to overcome the clear deficiency of Rieger in teaching Petitioner's own proposed claim construction by citing Dr. Xiong's expert declaration. However, Dr. Xiong fails to identify anything in Rieger showing that the sensor and the memory are coupled *by conductive leads and traces*. EX1003 at ¶171. Instead, Dr. Xiong merely notes that Figure 3 illustrates "a data path from the sensor to memory." *Id.* However, almost everything in computers and digital electronic devices are connected to each other by data paths in that data can typically move from one component to another in the device. On the other hand, connections between components via conductive leads and traces, language from Petitioner's own proposed construction, requires more. This is especially true given that

Rieger's Figure 3 fails to even illustrate any direct connection between the CCD-Sensor and the RAM, with the CPU interposed between the two components. However, the mere existence of a data path is not sufficient to show a connection by "conductive leads or traces" as Petitioner's construction requires. Indeed, as previously stated, computers connected to the Internet have a data path to share information, but these computers, which can be separated by thousands of miles, are not connected by "conductive leads or traces" as Petitioner's proposed construction requires. *See supra.* at IV.A.1.b.

Petitioner also argues that Figure 2A of the '828 "illustrates a sensor (Sensor Set) connected through a processor to a memory (Recorder)" and cites the prosecution history of the '828 Patent. Pet. at 27 (citing EX1002 at 277). However, the prosecution history does not indicate that every line in Figure 2, and in every Figure generally, illustrates tight coupling. In fact, the '828 Patent repeatedly recites specifically that the sensor is tightly coupled to the memory, specifically stating, "A key to verifiable authenticity is to insure that the authentication information generation is tightly coupled to the sensor set and recorder." EX1001 at 3:16-18. The '828 Patent further recites, "During the operation of the camera, internal security 14 is monitored to detect the integrity of the tight coupling of the sensor set and the recorder 6." EX1001 at 4:65-67. As such, it is not the mere presence of a line in Figure 2 that denotes the tight coupling, but rather the description of the coupling

from the specification itself. Furthermore, the “Recorder” illustrated in Figure 2A of the ’828 Patent is not RAM memory, but rather is a 3.5” Floppy Drive which writes to 3.5” Floppy Disk Removable Recording Media. *Id.* at Fig. 2A.

Further, neither Petitioner nor Petitioner’s expert offers any opinion arguing or showing that Petitioner’s proposed construction is inherent in Glass or in the prior art. Moreover, neither Petitioner nor Petitioner’s expert offers any non-conclusory opinion showing why Petitioner’s proposed construction, especially including Petitioner’s proposed “conductive traces or leads” construction, is satisfied.

Because Petitioner fails to show that Rieger discloses “a sensor, which is tightly coupled to said memory” under Petitioner’s own proposed claim construction, the Petition fails to show that Rieger teaches limitation 1b of claim 1.

(b) Rieger Fails to Disclose “monitoring the integrity of the tight coupling between said memory and said sensor” under Petitioner’s own Proposed Claim Construction [limitation 1c]

As discussed above, Petitioner fails to show that Rieger discloses “a sensor, which is tightly coupled to said memory” under Petitioner’s own proposed claim construction. *See supra.* at IV.B.2.a. It therefore follows that, because Petition fails to show the existence of the tight coupling between the RAM memory and the CCD-Sensor in Rieger, the Petition likewise fails to show that Rieger discloses

“monitoring the integrity of the tight coupling between said memory and said sensor” under Petitioner’s own proposed construction for the same reasons.

Petitioner notes that Rieger includes a “protective compartment” having a “protective shield” which can be configured to delete a secret key stored in the processor if a change in potential is detected. Pet. at 49 (citing EX1006 at 4). However, claim limitation 1c requires “monitoring the integrity of the tight coupling between said memory and said sensor when said at least one internal and unique parameter is generated.” The alternative design is therefore distinguishable for at least three reasons. First, the monitoring of limitation 1c is directed to “the integrity of the tight coupling between said *memory* and said *sensor*.” However, the “secure compartment” described in Rieger is directed to a collection of components “including the CCD sensor the camera CPU..., the RAM, the internal clock, a back-up power supply and the required connector cables” rather than to the coupling between the memory and the sensor as recited in limitation 1c. EX1005 at 4. Second, the limitation is directed to the “*integrity* of the tight coupling,” but nothing in the description of the secure compartment is directed to insuring the integrity of the tight coupling between the sensor and the memory. EX1005 at 5:13-41. In other words, any monitoring is not directed at the coupling, nor more specifically the integrity of the coupling. Third, as explained above, Petitioner asserts that the term “a sensor, which is tightly coupled to said memory” means “a sensor coupled to said

memory via conductive traces or leads.” *See supra.* at III.A. Nothing in the description of Rieger’s secure compartment is directed to, or even mentions, whether the coupling between any sensor and any memory is by conductive traces or leads, let alone insuring the integrity of any such traces or leads. *See also supra.* at IV.B.1.a.

Because Petitioner fails to show that Rieger discloses “monitoring the integrity of the tight coupling between said memory and said sensor,” nor does Petitioner show that Rieger meets Petitioner’s own proposed claim construction, the Petition fails to show that Glass teaches limitation 1c of claim 1.

(c) Rieger Fails to Disclose “generating an error signal that is displayed to a user to indicate that said stored data stream is not authentic” [limitation 1g]

Rieger fails to disclose this limitation. More specifically, in the event that the data stream is determined not to be authentic, the limitation requires “generating an error signal that is displayed to a user to indicate that said stored data stream is not authentic.” However, Rieger fails to disclose generating an error signal that is displayed to a user. Rather, as Petitioner implicitly concedes, Rieger only discloses comparing hash values, but there is no discussion in Rieger that describes actually generating an error signal that is displayed to the user. EX1006 at 11-12. Instead, the disclosure only describes comparing hash values in order to verify integrity of texts; the disclosure in Rieger is silent as to whether, or if, that information is

presented to users. *Id.* However, this communication to the user of an error is precisely the subject of this limitation.

Because Petitioner fails to show that Rieger discloses “generating an error signal that is displayed to a user to indicate that said stored data stream is not authentic,” the Petition fails to show that Rieger teaches limitation 1g of claim 1.

(d) Rieger Fails to Disclose “generating an ok signal that is displayed to a user to indicate that said stored data stream is authentic” [limitation 1g]

Rieger fails to disclose this limitation for the same reasons as for limitation 1g. *See supra.* at IV.B.1.c. More specifically, this limitation requires “generating an ok signal that is displayed to a user to indicate that said stored data stream is authentic.” However, Rieger fails to generate an “ok” signal that is displayed to a user for the same reason Rieger fails to generate an “error” signal for limitation 1f: the section describing the integrity test in Rieger identified by Petitioner only describes comparing hash values in order to verify integrity of texts; the disclosure in Rieger is silent as to whether, or if, that information is presented to users. Pet. at 56-57; EX1006 at 11-12. However, this communication to the user of an error is precisely the subject of this limitation. Rieger is silent as to whether, or how, any results are presented to users.

Because Petitioner fails to show that Rieger discloses “generating an ok signal that is displayed to a user to indicate that said stored data stream is authentic,” the Petition fails to show that Rieger teaches limitation 1h of claim 1.

2. Claims 2-6

Claims 2 through 6 depend from claim 1. Ex. 1001, cls. 2-6. Petitioner’s arguments in Ground 2 for claims 2 through 6 are therefore based on Petitioner’s arguments for Ground 1, claim 1, from which they depend, which fail as discussed above. Pet. at 57-61; *supra*, IV.B.1.a-IV.B.1.d Thus, Petitioner has not demonstrated that claims 2 through 6 are invalid.

C. Grounds 3-4: Exif 2.0 or Exif 2.1 Fail to Render Obvious the Challenged Claims

1. Claim 1

Petitioner’s obviousness arguments in Grounds 3-4 for alleged obviousness of claim 1 are based on Petitioner’s arguments that the Glass and Rieger references, discussed above relating to Grounds 1-2, respectively, invalidate claim 1. Pet. at 62. In fact, Petitioner advances no additional invalidity arguments relating to claim 1 based upon Exif 2.0 and Exif 2.1, merely citing to Petitioner’s previous arguments and conclusorily stating that the references “provide more detail about the specific metadata fields available for digital cameras.” *Id.* Petitioner’s arguments fail as discussed above. *See supra.* at IV.A.1, IV.B.1. More specifically, because Petitioner has failed to demonstrate that Glass and Rieger discloses each limitation

of claim 1, Petitioner's arguments in Grounds 3-4 for claim 1 fail for the same reasons discussed above. *Id.*

2. Claims 2-6

Claims 2 through 6 depend from claim 1. EX1001, cls. 2-6. Petitioner's arguments in Grounds 3-4 for claims 2 through 6 are therefore based on Petitioner's arguments for claim 1, from which they depend, which fail as discussed above. Pet. at 62-67; *supra*, IV.A.1, IV.B.1 Thus, Petitioner has not demonstrated that claims 2 through 6 are invalid.

D. Grounds 5-8: Serret-Avila fails to Render Obvious the Challenged Claims

1. Claim 1

a) Petitioner Fails to Show That It Would Have Been Obvious to Modify Glass and Rieger to add Serret-Avila

Petitioner argues it would have been obvious to modify Glass and Rieger to add Serret-Avila. Pet. at 67. However, Petitioner's obviousness theory suffers from several fatal flaws, none of which are addressed in Petitioner's purported motivation to combine.

First, Serret-Avila is non-analogous art and therefore does not "qualif[y] as prior art for an obviousness determination under § 103." *In re Klein*, 647 F.3d 1343, 1348 (Fed. Cir. 2011). A prior art reference is analogous prior art if: (1) "the art is from the same field of endeavor" or (2) "the reference [] is reasonably pertinent to

the particular problem with which the inventor is involved.” *Id.* A reference satisfies the “reasonably pertinent” test if “because of the matter with which it deals, [it] logically would have commended itself to an inventor’s attention in considering his problem.” *Id.* Petitioner makes no effort to show that Serret-Avila is analogous art under either prong of the test.

As to the first prong of the analogous art test, Serret-Avila clearly fails. Serret-Avila relates to a “verify[ing] the authenticity of [a] communication” by using “check values... constructed from the original content of the communication.” EX1011 at Abstract. Serret-Avila is not directed towards authenticating digital images, nor does Serret-Avila even reference authenticating digital photographs or images. *Id.* Glass, on the other hand, focuses on “securely transmitting biometric data over a network contains a sensor, preferably a camera.” EX1005 at Abstract. Rieger focuses on “ensuring the integrity and authenticity of photographic images during the image-recording phase.” EX1006 at 1.

A POSITA would therefore recognize that Serret-Avila is generally in the field of internet transaction or e-commerce security. By contrast, a POSITA would recognize that Glass and Rieger are generally in the field of endeavor of digital imaging security. A POSITA would regard the field of digital image validation as a separate field of endeavor from the field of internet security because validation of digital images to ensure the integrity and authenticity of the images involves unique

problems specific to detecting manipulation of images. *See, e.g.*, EX1006 at 1 (“it is becoming increasingly difficult to detect and show proof of professional image manipulation aided by digital methods.”). A POSITA would therefore regard such fields as separate.

As to the second prong of the analogous art test, regarding whether the reference “is reasonably pertinent to the particular problem with which the inventor is involved” Serret-Avila also fails. *In re Klein*, 647 F.3d at 1348. In the specification of the ’828 patent, the purpose of the “error signal” recited in limitation 1g and of the “ok signal” recited in limitation 1h is to inform the user whether or not the images include either errors or if security has been compromised. EX1001 at 8:45-50 (“ImageGuard appears if no internal errors are detected and the security is not compromised. NONVERIFIED (or other indication of compromise) appears if security is compromised within the system.”). On the other hand, because Serret-Avila is not directed, and does not even discuss, authenticating digital images nor any aspects of security relating to digital images. *See, e.g.*, EX1006 at Abstract. In light of these significant differences in field of use, purpose, problems solved, and manner of solution, Serret-Avila would not “have commended itself to an inventor’s attention in considering” the problems solved by the ’828 Patent. Consequently, Serret-Avila is not analogous art with Glass nor Rieger.

b) Petitioner Fails to Show That Modifying Glass and Rieger to add Serret-Avila Renders Obvious Claim 1

Petitioner's obviousness arguments in Grounds 5-8 for alleged obviousness of claim 1 are based on Petitioner's arguments that the Glass and Rieger references, discussed above relating to Grounds 1-2, respectively, invalidate limitations [1a]-[1e] of claim 1. Pet. at 67, 69-72. In fact, Petitioner advances no additional invalidity arguments relating to limitations [1a]-[1e] of claim 1 based upon Serret-Avila, merely citing to Petitioner's previous arguments. *Id.* at 62. Petitioner's arguments fail as discussed above. *See supra.* at IV.A.1.a-IV.A.1.c, IV.B.1.a-IV.B.1.b. More specifically, because Petitioner has failed to demonstrate that Glass and Rieger discloses each limitation of claim 1, Petitioner's arguments in Grounds 5-8 for claim 1 fail for the same reasons discussed above. *Id.*

1. Claims 2-6

Claims 2 through 6 depend from claim 1. EX1001, cls. 2-6. Petitioner's arguments in Grounds 5-8 for claims 2 through 6 are therefore based on Petitioner's arguments for claim 1, from which they depend, which fail as discussed above. *Supra*, IV.D.1. Thus, Petitioner has not demonstrated that claims 2 through 6 are invalid.

V. THE BOARD SHOULD EXERCISE ITS SECTION 314(a) DISCRETION TO DENY INSTITUTION

A. Section 314(a): Parallel Litigation Weighs Against Institution

The parallel district court litigation is proceeding weighs against institution of this Petition. While it is abundantly clear that institution of this IPR should be denied on the merits, there also is ample reason for the Board to deny institution on discretionary grounds. As Petitioner admits, the '828 Patent is concurrently asserted against it in the Central District of California. As discussed further below, the factors set out in *Apple Inc. v Fintiv, Inc.*, IPR2020-00019, Paper 11 (Mar. 20, 2020), weigh against institution. Given the lack of merit of this Petition, there is simply no need for the Board to waste valuable resources in a race against the co-pending proceedings.

B. Factor-3: Litigation Investment

This factor weighs in favor of discretionary denial. Plaintiff in the district court case has already exchanged preliminary infringement and related document disclosure. EX2002 (Claim Construction Scheduling Order). The parties have also exchanged terms for claim construction, preliminary constructions, and exchanged extrinsic evidence, the District Court has held its claim construction hearing, and the District Court has held its claim construction hearing and issued a Tentative Claim Construction Order. *Id.*, EX1020. In addition, the Central District of California, where the district court case is pending, has a median time-to-trial of 27.7 months.

EX2003 (Docket Navigator, “How Top US Patent Courts Compare on Median Time-to-Trial Statistics”). The complaint in the district court case was filed on August 1, 2023. EX2004 (Original Complaint). Consequently, using median time-to-trial as a guide, the district court case can be expected to be tried near the end of 2025. Thus, considerable investment will have been expended in the litigation, with more likely to have been expended before the Board reaches a decision.

C. Factor-5: Petitioners Are Litigation Defendants

Petitioner is a defendant in the co-pending litigation. This factor weighs in favor of discretionary denial.

D. Factor-6: Other Circumstances, Including the Merits

For at least the reasons set forth in this Preliminary Response, the petition lacks merit and that institution is properly denied on this basis as well.

VI. CONCLUSION

For the above reasons, Patent Owner requests that institution of this Petition for *inter partes* review be denied.

Date: December 11, 2024

Respectfully submitted,

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Certificate of Service 37 C.F.R. § 42.6(e)

The undersigned certifies that on December 11, 2024, I will cause true and correct copies of the foregoing Patent Owner's Preliminary Response, and all associated exhibits or appendices referred to therein, to be served electronically upon the following attorneys who have consented to service via email. Pet. at 2-3.

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Certificate of Compliance Pursuant to 37 C.F.R. § 42.24

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