FILED: July 14, 2020

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

Altamont Software, Inc.
Petitioner

v.

Sorna Corporation
Patent Owner.

Case: IPR2019-00218
U.S. Patent No. 7,965,408 B2

Before J. JOHN LEE, SHEILA F. McSHANE, and SHARON FENICK,
Administrative Patent Judges.

NOTICE OF APPEAL
TO THE UNITED STATES COURT OF APPEALS
FOR THE FEDERAL CIRCUIT
BY PETITIONER ALTAMONT SOFTWARE, INC.

Pursuant to 35 U.S.C. §§ 141, 142, and 319, and in accordance with 37 C.F.R. §§ 90.2-90.3, Petitioner Altamont Software, Inc. ("Altamont") appeals from the Final Written Decision of the Patent Trial and Appeal Board (the "Board") entered on May 13, 2020 (Paper No. 37) ("Final Written Decision"), and from all underlying findings, determinations, rulings, opinions, orders, and decisions regarding the *inter partes* review of U.S. Patent No. 7,965,408 (the " '408 Patent"). A copy of the Final Written Decision is attached.

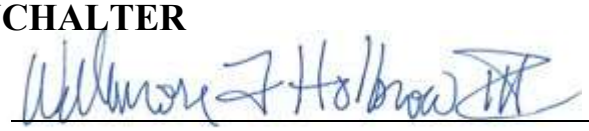
In accordance with 37 C.F.R. § 90.2(a)(3)(ii), Altamont states that the issues on appeal include, but are not limited to: the Board's determination that claims 1-19 of the '408 Patent are not rendered obvious under 35 U.S.C. § 103; the Board's construction of those claims; the Board's consideration of expert testimony, prior art, and other evidence in the record; and the Board's factual findings, conclusions of law, or other determinations supporting or related to those issues, as well as all other issues decided adversely to Altamont in any orders, decisions, rulings, and opinions.

This Notice of Appeal is being e-filed with the Clerk's Office for the United States Court of Appeals for the Federal Circuit, along with payment of the required docketing fees. In addition, a copy of this Notice of Appeal is being filed simultaneously with the Patent Trial and Appeal Board.

Respectfully submitted,

Dated: July 14, 2020

BUCHALTER

By: 

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Paper 37
Entered: May 13, 2020

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

ALTAMONT SOFTWARE, INC.,
Petitioner,

v.

SORNA CORPORATION,
Patent Owner.

IPR2019-00218
Patent 7,965,408 B2

Before J. JOHN LEE, SHEILA F. McSHANE, and SHARON FENICK, *Administrative Patent Judges.*

McSHANE, *Administrative Patent Judge.*

JUDGMENT
Final Written Decision
Determining No Challenged Claims Unpatentable
35 U.S.C. § 318(a)

I. INTRODUCTION

We have jurisdiction to hear this *inter partes* review under 35 U.S.C. § 6. This Final Written Decision is issued pursuant to 35 U.S.C. § 318(a). For the reasons discussed herein, we determine that Petitioner has not shown, by a preponderance of the evidence, that claims 1–19 ("the challenged claims") of U.S. Patent No. 7,965,408 B2 (Ex. 1001, "the '408 patent") are unpatentable.

A. Procedural Background

Altamont Software, Inc. ("Petitioner") filed a Petition requesting *inter partes* review of the challenged claims of the '408 patent pursuant to 35 U.S.C. §§ 311–319. Paper 1 ("Pet."). Petitioner also filed the supporting Declaration of Steven Horii, M.D. to support its positions. Ex. 1011. Sorna Corporation ("Patent Owner") filed a Preliminary Response to the Petition. Paper 12 ("Prelim. Resp."). Patent Owner also filed the Declaration of Omid E. Kia, Ph.D. to support its positions. Ex. 2002. Pursuant to 35 U.S.C. § 314(a), on May 15, 2019, we instituted *inter partes* review on the following grounds:

Claims Challenged	35 U.S.C. §	References
1, 2, 6–11, 14–19	§ 103(a)[1]	Kahle,[2] DICOMView,[3] MicroTech[4]

[1] The Leahy-Smith America Invents Act ("AIA"), Pub. L. No. 112-29, 125 Stat. 284, 287–88 (2011), amended 35 U.S.C. § 103, and was effective March 16, 2013. Because the application from which the '408 patent issued was filed before this date, the pre-AIA version of § 103 applies.
[2] U.S. Patent No. 5,518,325, filed February 28, 1994, issued May 21, 1996. Ex. 1002.
[3] DICOMView REVIEWSTATION, USER'S GUIDE, Heartlab Inc., 1998. Ex. 1003.

Claims Challenged	35 U.S.C. §	References
3–5, 12, 13	§ 103(a)	Kahle, DICOMView, MicroTech, Farrell[5]

See Paper 20 ("Inst. Dec.").

Patent Owner filed a Patent Owner Response ("PO Resp."). Paper 24. Patent Owner also filed the Second Declaration of Omid E. Kia, Ph.D. to support its positions. Ex. 2011. Petitioner filed a Reply ("Pet. Reply") to the Patent Owner Response. Paper 29. Petitioner also filed the supporting Reply Declaration of Steven Horii, M.D. Ex. 1017. Patent Owner filed a Sur-Reply to Petitioner's Reply ("PO Sur-reply"). Paper 30.

An oral hearing was held on February 7, 2020. A transcript of the hearing is included in the record. Paper 36 ("Tr.").

B. Related Proceedings

The parties indicate that the '408 patent has been asserted in several district court cases. Pet. 1–3; Paper 6, 1–2. The parties also indicate that the '408 patent was the subject of IPR2015-00037, which was filed by a different petitioner and terminated due to settlement prior to institution. Pet. 3; Paper 6, 2; IPR2015-00037, Paper 20 (PTAB May 4, 2015).

C. The '408 Patent

The '408 patent is entitled "Medical Data Recording System" and issued on June 21, 2011 from an application filed on January 3, 2001. Ex. 1001, codes (22), (45), (54). The '408 patent claims priority to U.S.

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[4] IMAGEMAKER MJ CD-R PRODUCTION SYSTEM USER'S MANUAL, MicroTech Conversion Systems, Pub. No. IM-104, Rev. 2, 1998. Ex. 1004.

[5] U.S. Patent No. 5,717,841, filed March 8, 1996, issued February 10, 1998. Ex. 1005.

Provisional Application No. 60/205,751, filed on May 19, 2000. *Id*. at code (60).

The ’408 patent states that filing and record keeping for medical images such as x-rays can be labor-intensive and error prone, and, thus, sets forth as an object of the invention to have an indication of “the information contained on a disc [stored medical imaging data] printed on the disc for reference and filing and for automatically creating a directory of the information stored on all the discs.” *See* Ex. 1001, 1:29–36.

More specifically, the invention is directed to data recording associated with medical data information that uses Digital Imaging and Communications in Medicine (“DICOM”) protocols. Ex. 1001, 1:48–57. Figure 1, reproduced below, is a schematic of the system.

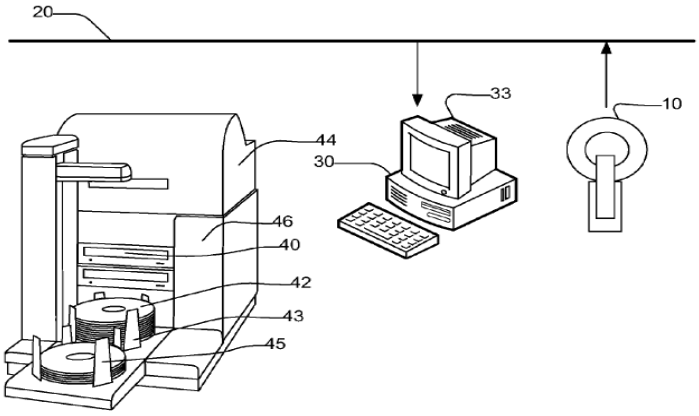


Figure 1

Figure 1 shows a schematic of the invention, with medical imaging device 10 such as an x-ray, CAT scan, magnetic resonance imaging, or sonogram device, which generates information and either transmits it or stores it for later transmission through communication network 20, such as the internet, to computer 30. Ex. 1001, 2:66–3:5. Software is used to receive data at computer 30 from communication network 20, using a standard digital

protocol for receiving digital imaging data from imaging device 10. *Id*. at 3:39–44. Computer 30 receives information in DICOM format through a software module and parses it. *Id*. at code (57), 4:1–37. A subdirectory is created for each patient, and for each study of a patient, another subdirectory is created under the patient directory. *Id*. at 4:3–6. Computer 30 can be used to select information to be stored by compact disc writer 40 and to select what information is to be printed by printer 44 on compact discs ("CDs") 42. *Id*. at 3:5–8. Software instructs compact disc writer 40 to store information on CDs 42 and to print information by printer 44 on the label of CDs 42, according to the selections made. *Id*. at 3:5–8, 5:45–54. In a method of the invention, new incoming files are parsed and stored, jobs are created, and jobs are processed on a patient-by-patient basis for recording files on CDs and printing selected information on the CDs. *Id*. at 4:1–5:54.

Claims 1 and 14 are the independent claims of the '408 patent, and both are method claims. *See* Ex. 1001, 6:56–7:21, 8:7–40. Claims 1 and 14 are reproduced below, with bracketed designations added to the limitations for reference purposes.

1. A medical data recording method comprising:

> [a] receiving medical data information in DICOM format through a software module and parsing patient identification information and study information from the received medical data information, the medical data further comprising one or more files,
>
> [b] storing the parsed patient identification information and parsed study information, the stored parsed study information and patient information coming from the one or more files,
>
> [c] storing DICOM image information coming from the one or more files,

[d] noting the end of the received medical data information through the software module for each patient,

[e] creating a job containing medical data for a patient, and medical data image viewing software, and

[f] providing print information for an autoloader control software, the print information having selected fields obtained from an automatic scan of the stored parsed patient identification information and the stored parsed study information,

[g] submitting the job to the autoloader control software, and

[h] recording said DICOM image information from the one or more files on a recording media,

[i] recording other files as defined by DICOM on the recording media,

[j] recording on said recording media in response to the job, the medical data image viewing software and the medical data and

[k] automatically printing the selected fields of the automatic scan of the stored parsed patient identification information and the stored parsed study information on the recording media to label the recording media.

14. A medical data recording method comprising:

[a] receiving medical data information in DICOM format through a software module communicatively coupled to a network, and

[b] extracting patient identification information and extracting study information from the received medical data information,

[c] storing DICOM image information coming from the medical data information,

[d] storing the extracted patient identification information and extracted study information, from the medical data information;

[e] automatically scanning the stored extracted patient identification information and the stored extracted study information for selected fields from one or more files,

[f] noting the end of the received medical data information through the software module for each patient,

> [g] creating a job for a patient containing medical data and medical data image viewing software, and
>
> [h] providing print information for an autoloader control software, the print information having the selected fields obtained from the automatically scanning of the stored extracted patient identification information and the stored extracted study information,
>
> [i] submitting the job to the autoloader control software and recording at least one DICOM image on a disc,
>
> [j] recording other files as defined by DICOM on the disc recording on the disc the job such that the medical data image viewing software is recorded on the disc along with the medical data, and
>
> [k] automatically printing the selected fields of the stored extracted patient identification information and the stored extracted study information, the selected fields used to label the disc.

Ex. 1001, 6:56–7:21, 8:7–40.

II. ANALYSIS

A. Person of Ordinary Skill in the Art

Based on the testimony of Dr. Horii, Petitioner contends that a person of ordinary skill in the art would have:

> (i) several years of experience or education in computer programming, including use of the DICOM Standard, (ii) at least two years of experience at a medical facility relating to medical imaging (e.g., X-rays)[,] (iii) at least three years of experience in the design, use and/or implementation of computer systems and software designed to receive, store and transfer data, including use of the DICOM protocol, and (iv) familiarity with the technology relating to recording data on a "[recordable CD ('CD-R')]" using a CD recorder capable of also automatically printing a label on the CD-R.

Pet. 10–11 (citing Ex. 1011 ¶ 30).

Patent Owner's expert, Dr. Kia, testifies that although he recognizes experience may be substituted for education in some cases, in this case, no relevant experience is mentioned by Petitioner "that can parallel the missing educational elements such as programming, discrete structures, organization of programming languages, algorithms, and mathematics." Ex. 2011 ¶ 22. Dr. Kia disagrees with Petitioner's view that a person of ordinary skill should have experience at a medical facility relating to medical imaging because this experience does not develop the necessary knowledge that goes into building an imaging system or combining existing systems to make a new system. *Id*. Dr. Kia further testifies that one of ordinary skill does not require specific experience with recording data on a CD-R using a CD recorder, but rather must have experience in integrating software modules for CD recording capability into a system for recording data on a CD-R using a CD recorder. *Id*. ¶ 24. Dr. Kia testifies that a person of ordinary skill in the art must have "(i) a bachelor's degree in computer science or in related field, (ii) at least two years of experience working with DICOM standard information including CD authoring done via automation, (iii) at least two years experience in computer system design flow, (iv) and, at least two years of experience in development of medical imaging technologies." *Id*. ¶ 25.

In light of the field of the invention and asserted prior art, we agree with Dr. Kia's view that possessing specific experience in a medical facility relating to medical imaging or specific experience in CD recording is not necessary here. However, based on the entirety of record, we agree with Petitioner and Dr. Horii that work experience would have been an acceptable substitute for education in light of the software design complexity and application of that software, as reflected in the field of the invention and

prior art. *See* Pet. 10; Ex. 1011 ¶ 30. Further, in view of the invention and prior art, we modify Dr. Kia's proposed work qualifications in the development of medical imaging technologies to be more specific to software development in that technology.

In our Institution Decision, we applied the following description of the level of ordinary skill: (i) a bachelor's degree in computer science or a related field or, as a substitute, at least three years of work or research experience in computer programming; (ii) at least two years development experience working with DICOM protocols; and (iii) at least two years of experience in the development of software for medical imaging technologies. Dec. 10. We find that a preponderance of the evidence of record supports that definition for the reasons explained above and, thus, maintain this definition. We note, however, that our claim construction and patentability analyses would reach the same findings and determinations if we were to adopt the level of ordinary skill in the art proposed by Petitioner or Patent Owner.

B. Claim Construction

Although our Rules were amended to change the Board's interpretation of claim terms to be in accordance with the standard used in federal district court (*see* 37 C.F.R. § 42.100(b) (2019))[6], the Petition was filed on November 8, 2018, which is prior to the November 13, 2018 effective date for the amendment. Thus, we interpret claim terms in the '408 patent according to the broadest reasonable interpretation in light of the

[6] *See* Changes to the Claim Construction Standard for Interpreting Claims in Trial Proceedings Before the Patent Trial and Appeal Board, 83 Fed. Reg. 51,340 (Oct. 11, 2018) (now codified at 37 C.F.R. pt. 42 (2019)).

specification. *See* 37 C.F.R. § 42.100(b) (2018). Under that standard, and absent any special definitions, we give claim terms their ordinary and customary meaning, as they would be understood by one of ordinary skill in the art at the time of the invention. *In re Translogic Tech., Inc*., 504 F.3d 1249, 1257 (Fed. Cir. 2007).

"parsing" and "extracting"

Petitioner advocates that the broadest reasonable interpretation of "parsing" (claim 1) and of "extracting" (claim 14) is "'retrieving' data from a data source." Pet. 7. Dr. Horii, Petitioner's expert, testifies that there is no explicit definition of the terms in the '408 patent, but that the '408 patent states, "The file . . . contains the information extracted from the last image of the study." Ex. 1011 ¶ 37 (citing Ex. 1001, 4:28–31). Dr. Horii further testifies that "[a]lthough these are different terms with different meanings, it appears that both claim 1 and claim 14 use the terms interchangeably." *Id*.

Patent Owner asserts that "parse" should be construed to mean "break DICOM part 10 file data into smaller chunks using a key-value pair so that a program can act upon the information." PO Resp. 29. Patent Owner further argues that the proper construction of "extract" is to "draw out data from DICOM part 10 files using a key-value pair." *Id*.

Patent Owner argues that parsing does not simply identify information but, per the claim, also "acts" to make patient identification and study information available for storage. PO Resp. 29. Dr. Kia, Patent Owner's expert, provides supporting testimony that DICOM data follows a key-value data representation model, where a known set of keys are associated with values according to a standard specification. Ex. 2011 ¶ 39. Dr. Kia also testifies that the only information parsed or extracted are DICOM part 10 files (*id*. ¶ 43), and that the object of both the "parsing" and "extracting"

terms are DICOM part 10 files (PO Resp. 30). Dr. Kia further testifies that the header contains metadata related to the image, such as patient and study information, and patient identification information and study information are rendered from the DICOM part 10 file, where this information is the data elements parsed and extracted in claims 1 and 14. Ex. 2011 ¶¶ 43–44.

At oral hearing, Patent Owner further explained that its position for the term "parsing" is premised on the claim's requirements that the data being acted on is DICOM part 10 files, as referred to in the '408 patent. *See* Tr. 35:3–11 (citing Ex. 1001, 4:1–4). Patent Owner, however, states that arguments related to the understanding of the claim term "parsing" would not have "much of an impact" on how the prior art references are analyzed. *Id*. at 48:8–20.

We discern no explicit definition for the terms "parsing" and "extracting" in the specification, nor does the specification disclose the use of a key-value pair for parsing. *See* Ex. 1001, code (57), 3:66–67, 4:1–2, 4:29–31, 4:38–42. Thus, we are not persuaded by Patent Owner's arguments in support of its proposed claim construction. Our view is that Patent Owner's arguments on claim construction of "parsing" and "extracting" are directed more to the relationship of the claimed parsing and extracting to "information in DICOM format," as recited in claims 1 and 14, than to the "parsing" and "extracting" terms themselves. Because the claims elsewhere specify that the information is in DICOM format, we need not include DICOM format requirements in the "parsing" and "extracting" term constructions. *See infra* Section II.C.4.b.2.a.

Consistent with the Institution Decision, we remain persuaded that Petitioner's proposed interpretation of "extracting" as "retrieving" is consistent with the ordinary meaning of the term and its use in claim 14 and

specification. *See* Ex. 1001, 4:30; Dec. 7. Accordingly, we maintain this construction for the purposes of this Decision.

With respect to "parsing," however, the applicant opted to use different terms in claims 1 and 14, respectively, and we decline to ascribe the same meaning to the terms. Rather, in determining the broadest reasonable interpretation, and consistent with the Institution Decision, we accord ordinary meaning to the term "parse" in view of the specification, that is, "identify smaller chunks of information so that an application can act on the information," and, accordingly, we interpret "parsing" as "identifying smaller chunks of information so that an application can act on the information." *See id.* at code (57), 3:66–67, 4:1–2, 4:38–42; Ex. 3002; *see also* Dec. 7–8.

Other Terms

We determine that no other term requires an express construction for us to render this Final Written Decision. *See Vivid Techs., Inc. v. Am. Sci. & Eng'g, Inc.*, 200 F.3d 795, 803 (Fed. Cir. 1999).

C. Obviousness of Claims 1, 2, 6–11, 14–19 over Kahle, DICOMView, and MicroTech and of Claims 3–5, 12 and 13 over Kahle, DICOMView, MicroTech, and Farrell

Petitioner contends that claims 1, 2, 6–11, and 14–19 would have been obvious over Kahle, DICOMView, and MicroTech, and claims 3–5, 12, and 13 would have been obvious over Kahle, DICOMView, MicroTech, and Farrell. Pet. 15–59. To support its contentions, Petitioner provides explanations as to how the prior art teaches each claim limitation. *Id*. Petitioner also relies upon the Declaration and Reply Declaration of Steven Horii, M.D., to support its positions. *See* Ex. 1011; Ex. 1017. Patent Owner counters that the prior art fails to teach some of the limitations of the claims

and that insufficient rationale to combine the prior art has been provided by Petitioner. PO Resp. 32–59. Patent Owner relies upon the First and Second Declarations of Omar Kia, Ph.D. to support its positions. *See* Exs. 2002, 2011.

On this complete record, we determine that Petitioner has not met its burden to show by a preponderance of the evidence that claims 1, 2, 6–11, and 14–19 would have been obvious over Kahle, DICOMView, and MicroTech, or that claims 3–5, 12, and 13 would have been obvious over Kahle, DICOMView, MicroTech, and Farrell. We begin our discussion with a brief summary of Kahle, DICOMView, and MicroTech, then assess issues related to the testimony of Dr. Horii, and then address the evidence, analysis, and arguments presented by the parties for independent claims 1 and 14. As discussed below, we need not address the merits of the dependent claims.

1. Kahle (Ex. 1002)

Kahle is directed to a method for labeling discs with information extracted from the data stream sent from a storage location to a CD burner and printer. Ex. 1002, code (57). The method provides for transferring digital information in the form of a digital data stream from a storage location, with the use of a controller to receive a portion of the digital data stream. *Id*. Kahle's system is depicted in Figure 3, reproduced below.

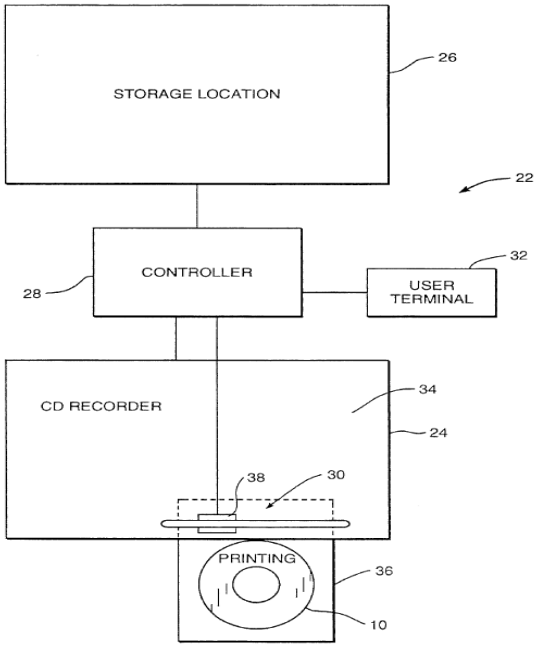


FIG. 3

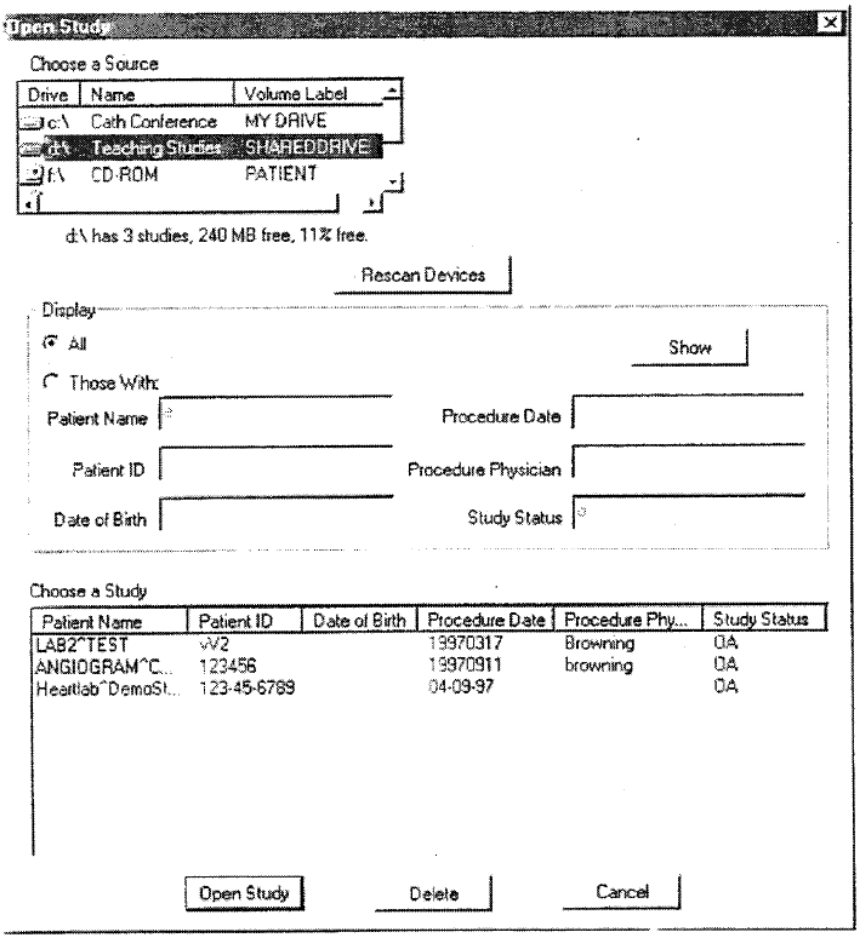
In Figure 3 above, digital data in storage location 26 is transferred to computer or controller 28. Ex. 1002, 5:45–47. The transfer of digital information from storage location 26 is controlled by controller 28, where a digital data stream is created that is fed to CD recorder 24. *Id*. at 5:47–50. In an embodiment, a portion of the digital data stream that is transferred to CD recorder 24 can be extracted by controller 28 and delivered to printer 30. *Id*. at 5:58–60. Controller 28 also extracts the portion of the digital data stream having title information, with software using parameter tables to "parse[] the data stream, extract data fields, and compose the title information." *Id*. at 5:64–6:2. Printer 30 produces a visual label on the CD without human intervention. *Id*. at 6:2–3.

Under 35 U.S.C. § 311(b), a petitioner may bring its challenges on the basis of prior art consisting of patents or printed publications. 35 U.S.C. § 311(b) (2012). We agree with Petitioner's contention that Kahle is prior art under § 102(b) because it was issued on May 21, 1996, prior to the

earliest possible priority date of the '408 patent, May 19, 2000. Pet. 15; *see also* Ex. 1001, code (60); Ex. 1002, code (45).

2. DICOMView (Ex. 1003)

DICOMView is a guide for users of desktop angiographic review software. Ex. 1003, 1. DICOMView explains that work began in 1982 to develop a standard for the digital exchange of medical images, which has developed into the DICOM standard. *Id.* at 5. DICOMView explains the general features of DICOMView software and provides a guide for its use. *See id.* at 11– 50. DICOMView software allows users to open and view DICOM studies. *Id*. at 14, 44–46. Reproduced below is a graphic of an example of a dialog box for opening studies.



Id. at 20. The above graphic is an example of a dialog box for opening studies. DICOMView also allows browsing of a CD and searching of studies using search criteria in different search fields. *Id*. at 19–21. Search fields are shown in the reproduced table below.

Search Field	Usage
Patient Name	Lists studies for all matching names.
Patient ID	List studies for matching patient ID.
Date of Birth	Patient DOB entered in cath lab.
Procedure Date	Date study was performed.
Procedure Physician	Physician name entered at the cath lab console at the time of study acquisition.
Study Status.	Shows "A" if a preloaded study also appears on a CD.

Id. at 21. The table reproduced above identifies the search fields used in browsing and searching in DICOMView. *Id*. DICOMView's "Copy Study" function allows copying of a medical study to a CD writer and writing selected studies onto CD media. *Id*.

Petitioner asserts that DICOMView was published in 1998 and qualifies as prior art under §§ 102(a) and 102(b). Pet. 15–16. Petitioner provides the Declaration of Robert Petrocelli, who was founder and Chief Executive Officer of Heartlab Cardiac Solutions from November 1994 through March 2006, which sold DICOMView Review Station, Version 1.9. Ex. 1013 ¶¶ 1–2. Mr. Petrocelli testifies that DICOMView was published and provided to the public along with DICOMView products sold in 1998. *Id*. ¶ 3. Mr. Petrocelli testifies that DICOMView includes a copyright date of 1998, and Heartlab personnel were careful to ensure that the copyright date matched up with the date that they began shipping the product. *Id*. Mr. Petrocelli testifies that locating paperwork on sales back to the late 1990s was challenging, but his Declaration includes an invoice showing a sale of the DICOMView Review Station product in August 1999. *Id*. ¶ 4, Appendix

A. Patent Owner offers no arguments or evidence contrary to the testimony on the DICOMView document, and does not dispute that DICOMView is prior art. *See generally* PO Resp.

"Printed publication" has been interpreted to mean that the reference must have been "sufficiently accessible to the public interested in the art" before the critical date. *In re Klopfenstein*, 380 F.3d 1345, 1348 (Fed. Cir. 2004). "A reference is considered publicly accessible if 'persons interested and ordinarily skilled in the subject matter or art, exercising reasonable diligence, can locate it.'" *Samsung Elecs. Co. v. Infobridge Pte. Ltd*., 929 F.3d 1363, 1369 (Fed. Cir. 2019) (quoting *Acceleration Bay, LLC v. Activision Blizzard Inc.*, 908 F.3d 765, 772 (Fed. Cir. 2018)).

Here, Mr. Petrocelli presents sufficient evidence that DICOMView was available to purchasers of DICOMView Review Station, who would have reasonably included "the public interested in the art," by 1998. Thus, the preponderance of evidence presented by Petitioner is sufficient to demonstrate that DICOMView qualifies as a printed publication and was available prior to the earliest possible priority date of the '408 patent. Based on the record evidence, we conclude that DICOMView qualifies as prior art.

3. MicroTech (Ex. 1004)

MicroTech is a user manual for a production system including hardware (a computer system and the CD drives connected to it) and associated software, for automated production of CD-R copies. Ex. 1004, 9, 11. The production system is directed to setting up CD copy jobs and to making and verifying CD-R copies. *Id*. at 11–12. MicroTech's production system includes a utility (AUDIODAT) that can copy digital audio data from a Digital Audio Tape (DAT) in order to make CD-R copies of a disc containing the audio from the DAT. *Id*. at 135. To determine the end of a

recording of an audio DAT tape, AUDIODAT may (1) look for an error when reading the tape; (2) look for a specific program counter reading; or (3) look for a period of silence of a specific length. *Id*. at 139.

Petitioner contends that MicroTech was published in February 1998 and qualifies as prior art at least under 35 U.S.C. §§ 102(a) and 102(b). Pet. 16. Petitioner refers to the publication date of MicroTech appearing on its cover page. *See* Ex. 1004, 1. Petitioner also refers to the Declaration of Corwin Nichols of MicroTech Systems, Inc., who testifies that MicroTech's 1998 User's Manual was included in the packaging of every MicroTech CD Recorder sold, and hundreds of this product were sold in 1998. Ex. 1012 ¶¶ 1, 5. Patent Owner offers no arguments or evidence contrary to this testimony on the MicroTech document, and does not dispute that the document is prior art. *See generally* PO Resp.

Here, Mr. Nichols presents sufficient evidence that MicroTech was available to any purchasers of MicroTech CD Recorder, who would have reasonably included "the public interested in the art," by 1998. Thus, the preponderance of evidence presented by Petitioner is sufficient to show that MicroTech qualifies as a printed publication and was available prior to the earliest possible priority date of the '408 patent. Based on the record evidence, we conclude that MicroTech qualifies as prior art.

4. Analysis

To prevail in challenging Patent Owner's claims, Petitioner must demonstrate by a preponderance of the evidence that the claims are unpatentable. 35 U.S.C. § 316(e). A patent claim is unpatentable under 35 U.S.C. § 103(a) if the differences between the claimed subject matter and the prior art are such that the subject matter, as a whole, would have been obvious at the time the invention was made to a person having ordinary skill

in the art to which said subject matter pertains. *KSR Int'l Co. v. Teleflex Inc.*, 550 U.S. 398, 406 (2007). The question of obviousness is resolved on the basis of underlying factual determinations including (1) the scope and content of the prior art; (2) any differences between the claimed subject matter and the prior art; (3) the level of ordinary skill in the art; and (4) objective evidence of nonobviousness. *Graham v. John Deere Co.*, 383 U.S. 1, 17–18 (1966).

a) Testimony of Dr. Horii

Patent Owner argues that Petitioner's expert, Dr. Horii, is not a person of ordinary skill in the art, because he does not have a degree in computer science. PO Resp. 6. Patent Owner asserts that, although Dr. Horii alleged that he had "extensive" experience in computer programming (Ex. 1011 ¶ 8), Dr. Horii stated at his deposition that that he did not do any actual programming in relation to his work with the DICOM Standards Committee working group. PO Resp. 6 (citing Ex. 2013, 8:11–21). Patent Owner asserts that the majority of Dr. Horii's experience in writing code took place prior to 1968, with some occurring in the 1970s, but there is no showing that he has three years of programming experience. *Id*. (citing Ex. 2013, 9:16–10:9). Patent Owner further argues that Dr. Horii has no development experience in working with DICOM protocols because he: (1) has not worked on the design of a DICOM CD recorder; (2) has never written code for a product with information taken from a DICOM file; and (3) has not used object-oriented code, databases, or code libraries, such as those that are used for DICOM-related problems. *Id*. at 6–7 (citing Ex. 2013, 18:6–8, 23:5–7, 56:11–12, 56:53–56). Patent Owner asserts that Dr. Horii is a radiologist, who has experience in the use of medical imaging technology

for medical diagnostic purposes but has no development experience. *Id*. at 7.

Dr. Horii's curriculum vitae indicates that he has a medical degree, but has no computer science degree or equivalent. Ex. 1011, 50. Dr. Horii was, however, a member of the DICOM Standards Committee, which was responsible for the development of standards for exchanging DICOM images on various media, and has extensive experience with the use of DICOM standards. *See id.* ¶¶ 6–10; *see also id.* at 52–55, 73–86 (curriculum vitae). Dr. Horii testifies that he served in multiple capacities in the DICOM Standards Committee, including Co-Chairman. *Id*. ¶ 7. Dr. Horii also served as a radiologist and information technology expert for the Digital Imaging Network Systems (DINS) project; was Co-Director of the Medical Informatics Group at the University of Pennsylvania Medical Center, which was involved in the development of picture archiving and communication systems (PACS) technology; and has co-authored many publications on DICOM for organizations such as the Institute of Electrical and Electronics Engineers (IEEE). *Id*. ¶¶ 5–6, pp. 79–83.

We agree with Patent Owner that Dr. Horii's qualifications as one of ordinary skill in the art are lacking, at least to the extent his work experience in computer programming is discounted because it dates from the 1960s and 70s. *See* Ex. 2013, 9:16–10:9. Dr. Horii, however, does not need to be a person of ordinary skill in the art to provide useful testimony in this proceeding. *See SEB S.A. v. Montgomery Ward & Co., Inc*., 594 F.3d 1360, 1373 (Fed. Cir. 2010). Instead, in order to testify in this proceeding, Dr. Horii must have sufficient specialized "knowledge, skill, experience, training, [and] education" to demonstrate that his testimony is likely to "assist the trier of fact" in understanding the evidence and in determining

whether the challenged claims are unpatentable. *Id.* Here, Dr. Horii has extensive experience in the development of computer-based DICOM-based systems, as noted above. Although Dr. Horii admittedly has not performed hands-on programming of these types of systems himself, he has beta tested software (Ex. 2013, 18:6–8); has worked on specifications for software (*id*. at 23:5–10); has knowledge of incorporation of software libraries (*id*. at 23:17–20); has written interface requirements for devices and performed validation and verification of DICOM products (*id*. at 31:12–33:13); and has knowledge of object-oriented software design (*id*. at 56:15–57:1). In light of Dr. Horii's background and experience in these areas, which would necessitate familiarity with the principles of programming DICOM systems, we decline to dismiss consideration of his opinions on the '408 patent and prior art, and instead, we weigh them commensurately with his experience.

b) Independent Claims 1 and 14

Petitioner relies on the combination of Kahle and DICOMView as teaching the majority of the limitations of independent claims 1 and 14 except for limitations 1[d] and 14[f], for which Petitioner relies also upon the teachings of MicroTech in combination with Kahle and DICOMView. Pet. 15–37, 43–46. The parties present disputed issues predominantly related to limitations 1[a] and 1[b] of claim 1, and the parallel limitations of 14[a], 14[b], and 14[d] (*see* PO Resp. 32–38, 50–51; Pet. Reply 8–11, 19–20; PO Sur-reply 12–16), and we direct our discussion to those limitations.

(1) Petitioner's Contentions Generally

Regarding claim limitation 1[a], Petitioner argues that Kahle teaches receiving a data stream of a file, where the data stream is parsed and certain information is extracted from the data. Pet. 24 (citing Ex. 1002, 5:45–6:7).

Petitioner relies on Kahle's disclosure of information being parsed and extracted for labeling as "title information," which does not limit the title information to any particular type of information. *Id*. (citing Ex. 1002, 4:11–18). Petitioner acknowledges that Kahle does not explicitly disclose that the received data is medical data in DICOM format or that the information parsed is patient identification information and study information. *Id*. Dr. Horii testifies that it would have been obvious to a person of ordinary skill in the art to modify the teachings of Kahle for "'any type of data' to explicitly record medical data on a CD and extract patient identification information and study information from the data for the label." Ex. 1011 ¶ 54. Petitioner also relies upon DICOMView, with DICOMView teaching a system with software that receives medical data information in DICOM format when a user selects the "Open Study" or "Copy Study" function. Pet. 25 (citing Ex. 1003, 6, 14). Petitioner further asserts that, as part of selecting a study, a user may search using patient identification information and study information, "thereby separating and retrieving the patient identification information and study information from the DICOM files." *Id*. (citing Ex. 1003, 21–22).

Petitioner asserts that a person of skill in the art would understand that Kahle's teachings of receiving a data stream of a file for parsing/extracting data fields for generating a label "are applicable to any type of data to be recorded on the CD, including medical data information such as DICOM image information, and any type of desired information of the DICOM image information may be parsed from the data for the CD's label." Pet. 24–25 (emphasis omitted). Dr. Horii provides testimony (Ex. 1011 ¶¶ 47, 54, 70), and references Kahle's disclosure that:

> The title information will uniquely identify the information recorded on the CD-R. The title information can include, but is not limited to, the name of the particular database file being recorded on the CD-R, a brief description of the type of information recorded on the CD-R, a table of contents, or the like. Further, the title information can contain information relating to distribution, mailing, filing, retrieval, security, controlled copy number, etc.

Ex. 1002, 4:11–18 (emphasis added); *see* Ex. 1011 ¶ 46; Pet. 18.

For the teaching of "storing the parsed patient identification information and parsed study information" of limitation 1[b], Petitioner relies on Kahle's disclosure that its software "uses 'parameter tables to parse[] the data stream, extract data fields, and compose the title information.'" Pet. 27 (quoting Ex. 1002, 5:64–6:2). Petitioner asserts that "[t]he parsed information must necessarily be stored at least temporarily for the software to extract the data fields and compose the title information," with Dr. Horii providing supporting testimony. *Id.*; Ex. 1011 ¶ 73.

Petitioner asserts that Kahle does not explicitly disclose that the parsed information is patient identification or study information, but any differences from limitation 1[b] would have been obvious to one of skill in the art because DICOMView focuses on creating CDs featuring medical images in DICOM format with patient information and study information, and such information would have been stored. Pet. 27 (citing Ex. 1011 ¶ 74).

(2) Deficiencies Relating to the Prior Art Teachings of Limitations 1[a], 1[b], 14[a], 14[b], and 14[d]

In the Petition, for the teachings of limitations 1[a], 1[b], 14[a], 14[b], and 14[d], Petitioner relies on Kahle and DICOMView in view of the

knowledge of one of ordinary skill in the art. Pet. 24–27, 43–46. We discuss these assertions and disputed issues below.

(a) Kahle

Petitioner primarily focuses on Kahle for the parsing and storing limitations of claim limitations 1[a] and 1[b], and similar limitations 14[a] and 14[b]. *See* Pet. 24–27, 45–46; *see also* Tr. 33:20–21. As Petitioner acknowledges, Kahle does not disclose that its labeling system is used for medical data (*see* Pet. 19, 24), but Petitioner argues that Kahle is not limited to any particular type of information and, therefore, can be applied to any type of data, including DICOM information. Pet. 24–25. The Petition relies upon a portion of Kahle's disclosure below for the teaching of limitation 1[a]. *See id*. at 24.

> In a first embodiment, a portion of the digital data stream that is transferred to the CD recorder 24 can be extracted by the controller 28 and delivered to a printer 30. The portion of the data stream that is extracted by the controller 28 contains title information as previously described. The title information is sent to the printer 30 to print a visual label on the CD-R 10. To extract the portion of the digital data stream having the title information, the controller 28 uses software available from vendors such as Bell & Howell, Chicago, Ill. This software uses parameter tables to parse[] the data stream, extract data fields, and compose the title information.

Ex. 1002, 5:58–6:2.

For limitation 1[b], Petitioner relies on the parameter tables in Kahle for parsing a data stream, and argues that the parsed data would have to be stored at least temporarily for the software to extract the data fields and compose the title information. Pet. 27 (citing Ex. 1011 ¶ 73).

In his Declaration provided with the Petition, Dr. Horii testifies regarding Kahle's teachings relating to limitations 1[a] and 1[b] as follows:

(a) Kahle does not limit the type of information being extracted so the teachings apply to any type of data including medical image data (Ex. 1011 ¶¶ 47, 70); (b) it would have been obvious to one of ordinary skill in the art to modify the teachings of Kahle to explicitly extract patient identification information and study information to allow for a "highly desirable result," that is, to directly obtain label information, which includes patient identification and study information, without human intervention (*id*. ¶¶ 54–55); (c) the DICOM standard made it easy to retrieve patient and study information via metadata in what is called the header, and the difference between the data extracted in Kahle and that claimed "is nothing more than the 'type' of information and is therefore dictated by nothing more than the intended use" (*id*. ¶ 71); (d) it "would be well within the skill set of a [person of ordinary skill] to extract patient and study information from the data stream data in DICOM format" (*id*. ¶ 49); (e) "since the purpose of labeling a CD is to reflect its contents (see Kahle, Ex. 1002 at 1:28-30; '408 Patent, Ex 1001 at 1:29-36[)], it would have been simple for a [person of ordinary skill] . . . to apply the teachings of Kahle to automatically retrieve patient identification information and study information from the medical data" (*id*. ¶ 72); and (f) Kahle discloses the use of parameter tables to parse and extract data fields, and the parsed information must be stored at least temporarily (*id*. ¶ 73).

Patent Owner asserts that DICOM is a standardized file format infrastructure using particularized DICOM-specific metadata, with data containing an image and header, and with the header containing metadata related to the image such as patient and study information. PO Resp. 18–19, 30 (citing Ex. 1011 ¶¶ 22–23, 43–44). Patent Owner further contends that under claims 1 and 14, the patient identification and study information are

the data elements parsed and extracted from the DICOM part 10 data. *Id*. at 30. In support, Dr. Kia testifies that the information parsed and extracted are DICOM part 10 files, which include the header containing metadata related to the image, such as patient and study information. Ex. 2011 ¶ 43 (citing Ex. 1001, 4:1–7).

Patent Owner argues that the parameter table relied upon in the Petition does not explain how to search the DICOM file for a tag and then act on that information. PO Resp. 33 (citing Ex. 2013, 76:22–78:4). Patent Owner refers to Dr. Horii's testimony that Kahle's teachings are more "general and just says that he has examples of the kinds of things that can be in there [the data stream]," and that the software module necessary to extract the information is not disclosed in Kahle. *Id*. (alterations in original) (quoting Ex. 2013, 72:19–23) (citing Ex. 2013, 80:10–13).

Dr. Kia further testifies that applying Kahle's process to metadata rich formats, such as DICOM, would require that the parameter table be modified and extended to look for a series of contiguous data. Ex. 2011 ¶ 79. Dr. Kia testifies that for some of the more complex elements, an extension of the parameter table is necessary to encapsulate the complexities of the metadata such as the key-value pairs found in DICOM information, and this requirement is also supported by Dr. Horii's testimony that extra processing is required beyond the functionalities of Kahle's parameter table to meet the claim limitations. *Id*. (citing Ex. 2013, 77:8–78:2, 92:19–93:1). Dr. Kia also testifies that "[t]he Kahle disclosure capitalizes on what is constant in a data stream to identify title information to parse on a disc." Ex. 2002 ¶ 50. Dr. Kia testifies that with the use of Kahle's parameter table, only parameters such as the DICOM keys used in the DICOM image information

would have a chance to be captured and rendered, but not their associated values, which separate the patients apart. Ex. 2011 ¶ 80.

According to Patent Owner, Petitioner does not present any prior art that teaches parsing unique DICOM formatted files. PO Resp. 2–3, 21. Patent Owner further asserts that, based on Dr. Horii's testimony, Kahle teaches only mapping information, and that a second piece of software is needed for parsing it. *Id*. at 32. Patent Owner refers to Dr. Horii's testimony, which states:

> [T]o me, the parameter table is exactly what -- it's a table. It's a way to map one thing into something else but it doesn't actually have the software to do -- we have a software to do a match, but it doesn't have the software to then take that data out. I think that's another module.

Id. (quoting Ex. 2013, 92:19–93:1).[7]

The record supports that the reference to the "medical data information in DICOM format" in claims 1 and 14 refers to a header containing metadata related to the image, including patient and study information, in DICOM part 10 files, and, more particularly, that metadata with DICOM keys consequently would have to be used in the steps of parsing, extracting, and storing of patient identification and study information, as the claims require. We do not discern that there is a dispute

[7] In his Reply Declaration, Dr. Horii further testifies that his deposition testimony should not be construed to mean that Kahle does not teach a program capable of parsing/extracting data, but rather that "the algorithm used to code parsing and extracting in Kahle would be different from the program used to code the parameter table and if [he] were writing the code, it would be two different programs/sets of code." Ex. 1017 ¶ 83. This distinction is not apparent from the context of Dr. Horii's deposition testimony. *See* Ex. 2013, 91:9–92:11. Additionally, as discussed below, Dr. Horii proposes changes to Kahle's parameter table for use with DICOM formatted data in his Reply Declaration.

between the parties on this issue. This is based on the experts' testimony, including Dr. Horii's testimony, particularly in his Reply Declaration, which we discuss in greater detail below. *See* Ex. 1001 ¶¶ 23, 49, 71; Ex. 1017 ¶¶ 25, 59, 80, 81, 85; Ex. 2002 ¶¶ 29, 30, 41, 50, 62, 68–70; Ex. 2011 ¶¶ 39, 43, 67, 72, 73, 77–80, 91, 92, 97–99, 105, 108, 109, 127. As such, the prior art asserted needs to sufficiently demonstrate a teaching of parsing medical data information in DICOM part 10 files, and storing parsed patient identification information and parsed study information (claim 1), as well as extracting and storing such information (claim 14), in order to demonstrate obviousness of the independent claims.

"Unlike district court litigation—where parties have greater freedom to revise and develop their arguments over time and in response to newly discovered material—the expedited nature of [*inter partes* reviews] bring with it an obligation for petitioners to make their case in their petition to institute." *See Intelligent Bio-Systems, Inc. v. Illumina Cambridge*, *Ltd.*, 821 F.3d 1359, 1369 (Fed. Cir. 2016). Thus, petitioners in *inter partes* review proceedings must adhere to the requirement that the initial petition identify "with particularity" the "evidence that supports the grounds for the challenge to each claim." *Id*. (quoting 35 U.S.C. § 312(a)(3)). In an *inter partes* review, the petitioner has the burden from the onset to show with particularity why the patent it challenges is unpatentable. *Harmonic Inc. v. Avid Tech., Inc*., 815 F.3d 1356, 1363 (Fed. Cir. 2016). This burden never shifts to the patent owner. *See Dynamic Drinkware LLC v. Nat'l Graphics, Inc*., 800 F.3d 1375, 1378 (Fed. Cir. 2015) (citing *Tech. Licensing Corp. v. Videotek, Inc*., 545 F.3d 1316, 1326–27 (Fed. Cir. 2008)). Furthermore, the petitioner does not satisfy its burden of proving obviousness by employing

"mere conclusory statements." *In re Magnum Oil Tools Int'l, Ltd.*, 829 F.3d 1364, 1380 (Fed. Cir. 2016).

The Petition relies upon the teachings of Kahle and the use of its parameter table for teaching limitations 1[a] and 1[b], the "parsing" and "storing" steps for patient identification information and study information, and we agree with Patent Owner that the Petition fails to provide sufficient support for its assertions that Kahle teaches these claim elements as used with DICOM formatted data in the view of one of ordinary skill in the art. In particular, Dr. Horii's deposition testimony points out deficiencies in Kahle's processing of data as applied to DICOM formatted data. *See* Ex. 2013, 72:19–21 (Q. Does Kahle disclose the software necessary to perform that search? A. No.), 80:10–13 (Q. Is there any guidance given in Kahle for how to accomplish that type of search on DICOM-formatted data? A. No.). This is consistent with Patent Owner's assertion, in view of Dr. Kia's testimony, that Kahle's type of processing of the data stream would not work on DICOM formatted data to parse and store, or extract and store, patient identification and study information. PO Resp. 34 (citing Ex. 2002 ¶ 67). As Dr. Kia testifies, with the use of Kahle's parameter table only, parameters such as DICOM keys would have a chance to be captured and rendered, but the associated values that separate the patients apart would not. Ex. 2011 ¶ 80.

More particularly, the claims require that the "patient identification information" and "study information" be parsed and stored under claim 1 or extracted and stored under claim 14, and the evidence of record indicates that in order to accomplish this for DICOM formatted data, additional modifications would have to be made to Kahle's teachings. As identified below, these modifications are beyond merely applying Kahle's teachings,

as disclosed, to DICOM-type data—which undermines Dr. Horii's testimony, provided in the Declaration that accompanied the Petition, that any difference between the data extracted in Kahle (that is, the "title information") and the claimed DICOM information "is nothing more than the 'type' of information and is therefore dictated by nothing more than the intended use." *See* Ex. 1011 ¶ 71. In the Declaration provided with the Petition, Dr. Horii refers to the metadata in a DICOM header, but does not do more than state in conclusory manner that "it would be obvious" to modify those teachings (*id*. ¶¶ 54, 71) and that it would be "simple" to do so (*id*. ¶ 72). Dr. Horii also testifies that it "would be well within the skill set of a [person of ordinary skill] to extract patient and study information from the data stream data in DICOM format." *Id*. ¶ 49.

The nature and extent of the modifications required for Kahle are newly presented in Petitioner's Reply, with Dr. Horii testifying that it is possible to create a parameter table that could be used to parse and extract DICOM files. Pet. Reply 9–10 (citing Ex. 1017 ¶¶ 80–81, 83; Ex. 2013, 72:24–73:6). More specifically, in his Reply Declaration, Dr. Horii testifies that a person of ordinary skill in the art may create a parameter table that can be used to parse and/or extract DICOM format data, and one method is to create a database table where the table has a column containing DICOM keys and a second column with "the associated values could be used to extract the needed information for the label, the metadata necessary to create the DICOMDIR [(DICOM directory)], and the image data to be written to the disc." Ex. 1017 ¶ 81. At deposition, Dr. Horii also testified on the use of a database table as follows:

> Q. Does Kahle disclose the software necessary to perform that search?

> A. No. I believe that Kahle is more general and just says that he has examples of kinds of things that can be in there but . . .
> Q. That's fine. Could you yourself create a parameter table to parse or extract a DICOM file?
> A. Could I create one? If I call it a parameter table, yes, I could create something that would be used to do that. *In my case, it would be a database table*.

Ex. 2013, 72:19–73:6 (emphasis added).

> A. . . . *It would be much simpler to do this* [(extract the value that follows the tag for examinations for one patient)] *in a* "*[Structured Query Language ('SQL')]" database where you could set up a query as one DICOM select -- or [SQL] select message and send it off and do it*.[8]
> Q. Would you describe that as the same as a parameter table?
> A. The root stuff underneath could be described as a parameter table. But the [SQL] database table, some people might call it a parameter table. I'd call it a [SQL] database table.
> Q. Is there any guidance given in Kahle for how to accomplish that type of search on DICOM-formatted data?
> A. No.

Id. at 79:23–80:13 (emphases added).

Dr. Horii's testimony in his Reply Declaration and at deposition indicates his view that additional functionality for DICOM formatted data is required in the form of a database table created to include DICOM keys and values that could be used to extract information, with metadata necessary to create the DICOMDIR.

Dr. Horii further testifies that "the parameter table, described as one embodiment in Kahle, was simply a design choice," and a person of ordinary skill "would have known of and could have easily incorporated other design options to accommodate the DICOM format." Ex. 1017 ¶ 81; *see also* Ex.

[8] At deposition, Dr. Horii also described alternative DICOM query retrieve software modifications that would be required for Kahle, but defers to the use of SQL database tables as simpler. *See* Ex. 2013, 77:5–80:2.

1011 ¶ 50. Dr. Horii testifies that a person of ordinary skill "who intended to implement a device that would accept DICOM Messages from a network and then format those as DICOM Files . . . would design the software in the 'controller' that Kahle describes, to interface with the DICOM network," and "[w]hether or not this is regarded as separate software or integrated with the controller software is irrelevant." *Id*. ¶ 82.

In our view, Dr. Horii's testimony included with Petitioner's Reply, "crosses the line from the responsive to the new." *Ariosa Diagnostics v. Verinata Health, Inc*., 805 F.3d 1359, 1368 (Fed. Cir. 2015). We recognize that a petitioner may include arguments and evidence in a reply brief that are responsive to arguments raised in the patent owner's response brief. *Apple Inc. v. Andrea Elec. Corp*., 949 F. 3d 697, 705–06 (Fed. Cir. 2020). In this instance, however, the modifications that Dr. Horii testifies would be necessary to use Kahle with the claimed DICOM-formatted data constitute an integral part of Petitioner's case-in-chief that was omitted from the Petition. The modifications include the creation of a database table with a specific column structure that could extract the needed information for the label, the metadata necessary to create the DICOMDIR, and the image data to be written to the disc. The extensive scope of these required changes in Petitioner's Reply buttresses Patent Owner's argument that Kahle would not have been sufficient to teach parsing and storing, or extracting and storing, DICOM formatted patient information and image information, as the Petition initially alleged. Although Petitioner attempts to cast its new arguments as responses to arguments in Patent Owner's Response, our view is that the later-proposed modifications represent a new line of evidence and argument intended to belatedly add teachings of necessary functionality beyond the implementation of Kahle described in the Petition, and these

assertions should have properly been presented with particularity in the Petition in view of the claim limitation's requirements requiring use with DICOM format data.

Even considering Petitioner's later-raised modifications to Kahle in its Reply, claims 1 and 14 require the specific steps of receiving DICOM format medical data information, parsing or extracting some of it, and storing that data. Dr. Horii testifies that it was a "design choice" for Kahle to use a parameter table, and other design options (database table with additional programming) could be used. *See* Ex. 1017 ¶ 81. But a finding of obviousness based simply on design choice is precluded where the difference between the claimed feature and prior art results in a functional difference, as is the case here. *In re Gal*, 980 F.2d 717, 719 (Fed. Cir. 1992). Moreover, we are mindful "of the distortion caused by hindsight bias and must be cautious of arguments reliant upon *ex post* reasoning." *KSR*, 550 U.S. at 421. The full record, including Dr. Kia's credible and persuasive testimony and Dr. Horii's admissions during his deposition, as discussed above, supports that Kahle's teachings are limited and its type of processing of the data stream would not work on DICOM formatted data without significant modifications for which Kahle provides no teachings or guidance. Thus, we agree with Patent Owner that Petitioner employs impermissible hindsight in its Reply and its assertions of additional modifications to the teachings of Kahle. *See* PO Resp. 34; PO Sur-reply 14–15.

In sum, we determine that Petitioner has not carried its burden to present sufficient evidence to demonstrate that Kahle teaches limitations 1[a], 1[b], 14[a], 14[b], and 14[d].

(b) DICOMView

The Petition also relies on DICOMView as teaching limitations 1[a], 14[a], and 14[b]. Pet. 24–27; Ex. 1011 ¶ 48; *see also* Ex. 1017 ¶ 84; Tr. 15:16–16:16, 32:21–33:14.

In relevant part, the Petition states that for DICOMView:

> As part of selecting a study, a user may search using patient identification information (e.g., patient name, patient ID, dat[e] of birth) and study information (e.g., procedure date, procedure physician, study status), thereby separating and retrieving the patient identification information and study information from the DICOM files. Ex. 1003 at p. 22, "Copy Study" Dialog; see also table on p. 21.

Pet. 25.

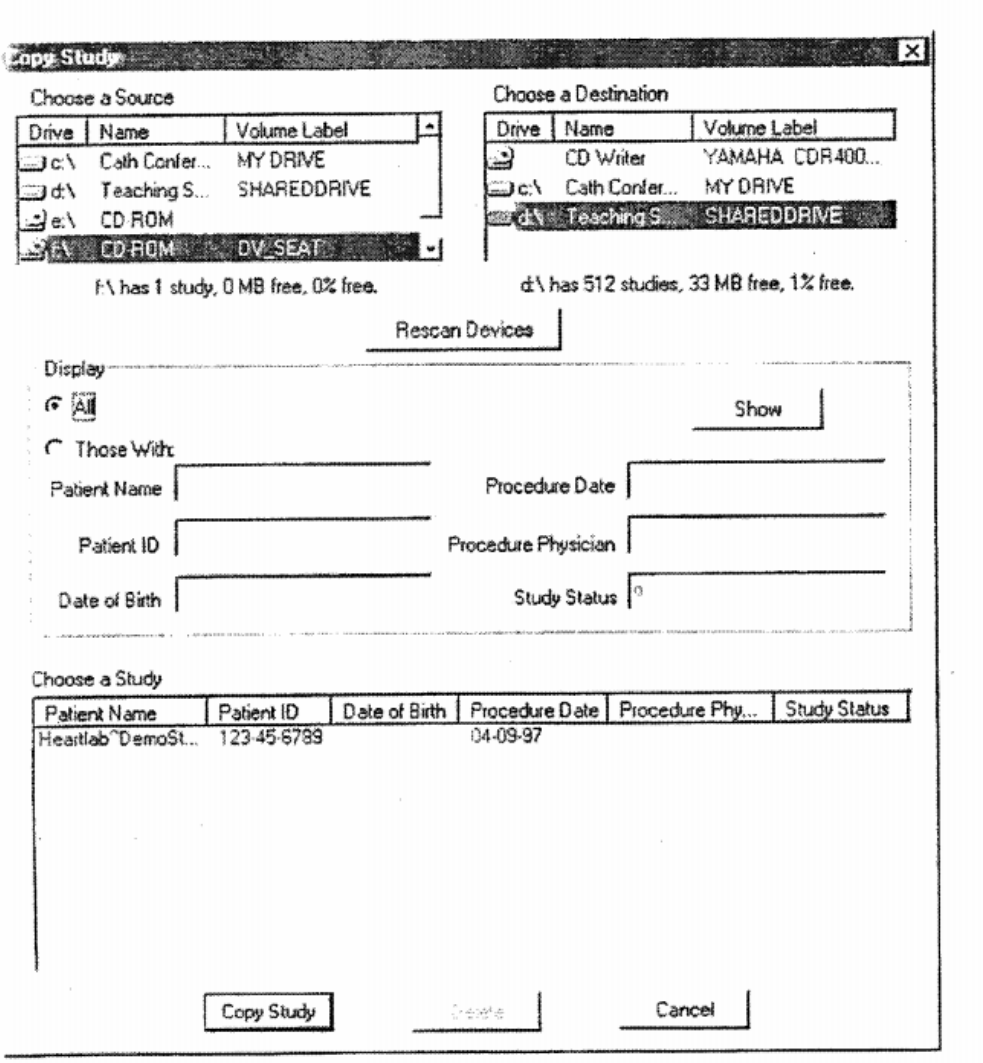
Dr. Horii's testifies that, in view of DICOMView's selection of a patient's study and "Copy Study" functions, patient and study information is parsed and extracted from medical data information in DICOM format. Ex. 1011 ¶¶ 48, 70; Ex. 1017 ¶ 84. Dr. Horii testifies in support of the Petition by referring to the dialog box of DICOMView, which is "populated with the retrieved pat[i]ent and study information." Ex. 1011 ¶ 48. Dr. Horii further testifies:

> [I]t would have been obvious to place the patient and study information on the label as that is the most useful identifying information for a physician when reviewing the CDs or when a technician or administrator files the CD. It also would be well within the skill set of a [person of ordinary skill] to extract patient and study information from the data stream data in DICOM format in view of Kahle and DICOMView for placement on the label of the CD containing the patient's study. The DICOM Standard made it very easy to retrieve patient and study information accompanying the DICOM image. In what is often referred to as the "header," the DICOM standard requires accessible (i.e., "retrievable") metadata, namely, patent and study information. (Exhibit 1007, p. 52–53).

Ex. 1011 ¶ 49. In his Reply Declaration, Dr. Horii further testifies that a person of ordinary skill in the art would have understood "that patient and study information in DICOM format had already been retrieved by the time the information is presented to the user on the screen." Ex. 1017 ¶ 85.

In support of Patent Owner's positions, Dr. Kia testifies that in DICOMView, study data is stored on a drive or is preloaded in the system, and the reference discloses only manual selection of studies to record on a CD. Ex. 2002 ¶ 44. Dr. Kia further testifies that although studies may be selected, DICOMView "teaches a rudimentary technique to select and record entire studies onto a disc, there is no alleged separation of any subset of data . . . In DICOMView the files saved on the media are duplicates of the files marshaled or preloaded onto the system, and have a static file structure." Ex. 2011 ¶ 107; Ex. 2002 ¶ 45;

Reproduced below is a graphic of an example of a dialog box for copying studies referenced by Petitioner. Pet. 25–26.



The above graphic is an example of a dialog box for copying studies. Ex. 1003, 22. The dialog boxes in DICOMView allows browsing of a CD and searching of studies using search criteria in different search fields. *See id*. at 19–21.

We agree with Patent Owner's contention that the evidence indicates that the DICOMView functions of selecting and copying entire studies onto a disc by the act of "Copying Study" fail to teach parsing patient and study information, but rather teach that the studies (files) are copied over in their entirety. *See* PO Resp. 35. Further, although the Petition provides little supporting evidence or explanation, Petitioner's arguments also include that

DICOMView's searching with the dialog box "separate[s] and retriev[es] the patient identification information and study information from the DICOM files," by "populat[ing] . . . the retrieved pat[i]ent and study information" in the dialog box, which appears to refer to the inclusion of patient and study information in the "Choose a Study" box in the bottom portion of the graphic above. *See* Pet. 25; Ex. 1011 ¶ 48. Petitioner fails to identify, however, the manner in which this information is retrieved by the use of the dialog box query, and Dr. Horii does not provide further support on this issue beyond conclusory statements. *See* Pet. 20, 24–27; Ex. 1011 ¶¶ 48–49, 70–71, 74. DICOMView itself shows only that the dialog box query is used for searching different search fields, and Petitioner does not identify sufficient evidence indicating whether a DICOM header is used for parsing or extracting in DICOMView.

Petitioner refers to Dr. Kia's deposition testimony for support that, in DICOMView, patient and study information was sourced from DICOM headers. Pet. Reply 10–11. We note that Dr. Kia testimony on DICOMView's operation is qualified by the use of "presumed" operation or "are indicative of DICOM tags." *See* Ex. 1016, 111:10–14, 113:21–114:5. Further, Dr. Kia's testimony on retrieval of information refers to "files that ha[ve] the DICOM parity information that presumably reads the DICOM information," but there is no evidence provided that the file parity information is determined as part of dialog box querying in DICOMView. *See* Ex. 1016, 121:13–22.

Although the parties' experts disagree as to whether DICOMView grants user access to DICOM metadata (*see* Ex. 1017 ¶ 111; Ex. 2002 ¶ 46; Ex. 2011 ¶ 72), both experts indicate that source code for DICOMView

operation was not available to them. *See* Ex. 2013, 135:8–24, 132:16–18; Ex. 1016, 111:21–112:4.

Additionally, limitation 1[a] requires that the medical information "received" through a software module is that which is then parsed for patient identification and study information. Patent Owner argues that, in DICOMView, the studies are files "in the CD-ROM drive, OEC Jaz drive, or preloaded [to the] system [you are on,]" or are in files already present in a static file structure on a network storage device prior to searching. *See* PO Resp. 35; Ex. 1003, 11, 13. Dr. Horii testifies "that patient and study information in DICOM format had already been retrieved by the time the information is presented to the user on the screen." Ex. 1017 ¶ 85. We agree with Patent Owner that the evidence of record indicates that static files are stored locally or on a network system, and Petitioner identifies no evidence that a software module in DICOMView receives the medical data information for parsing. *See also* Pet. 24–27.

We determine that Petitioner has not carried its burden to present sufficient evidence and support that DICOMView teaches limitations 1[a], 1[b], 14[a], and 14[b]. As discussed, the disclosures in DICOMView are too limited to demonstrate the prior art's teachings of these limitations, and Dr. Horii's supporting testimony is conclusory. *See* Pet. 25–27; Pet. Reply 9–11; Ex. 1011 ¶¶ 48, 49, 70, 71; Ex. 1017 ¶¶ 58, 84, 85, 88; Ex. 1003, 20–21, 44–46; s*ee also* 37 C.F.R. 42.65(a) ("Expert testimony that does not disclose the underlying facts or data on which the opinion is based is entitled to little or no weight"). Further, we find Dr. Kia's testimony discussed above about the deficiencies of DICOMView's teachings to be credible and persuasive.

(c) DICOMView in Combination with Kahle

The Petition states that it would be "obvious and simple" for a person of ordinary skill "to retrieve patient identification information and study information from the DICOM information in a data stream in view of Kahle and DICOMView for ultimate placement on the label of the CD containing the patient's study." Pet. 26 (citing Ex. 1011 ¶ 49). In view of this assertion, we also consider DICOMView in combination with Kahle for the teachings of limitations 1[a], 1[b], 14[a], 14[b], and 14[d]. *See* Pet. 20, 24–27, 42–46. Petitioner generally states that it would be obvious for one of skill to retrieve the patient identification information and study information from the DICOM information in the data stream in view of Kahle and DICOMView, but the Petition does not identify any specific teachings of the prior art references proposed to work in combination for the teachings of limitations 1[a], 14[a], and 14[b], except to the extent that DICOMView generally teaches the use of DICOM type data that could fall into "any type of data" that allegedly could be used in Kahle. *See id*. at 24–27. As discussed, *supra* Section II.C.4.b.2.a, Kahle's teachings are insufficient to support obviousness because significant additional modifications (that were not presented in the Petition) are required to enable use with DICOM data. Thus, even a suggestion to use DICOM data generally per DICOMView does not address those issues with Kahle. Further, we have determined that, individually, neither Kahle nor DICOMView sufficiently teach the parsing/extracting elements of limitations 1[a] and 14[b], and insufficient evidence is presented by Petitioner identifying how the prior art references in combination teach these limitations.

We determine that Petitioner has not carried its burden to present sufficient evidence to demonstrate that Kahle in combination with

DICOMView teaches limitations 1[a], 1[b], 14[a], 14[b], and 14[d] of independent claims 1 and 14.

c) Dependent Claims 2–13 and 15–19

Petitioner argues that dependent claims 2, 6–11, and 15–19 would have been obvious in view of Kahle, DICOMView, and MicroTech, and dependent claims 3–5, 12, and 13 would have been obvious over Kahle, DICOMView, MicroTech, and Farrell. Pet. 38–50 (claims 2, 6–11, 15–19), 52–59 (claims 3–5, 12, 13).

Claims 2–13 depend ultimately from independent claim 1, and claims 15–19 depend ultimately from independent claim 14. *See* Ex. 1001, 6:56–8:55. Because we have concluded that Petitioner has failed to demonstrate sufficient prior art teachings or suggestions for the limitations of independent claims 1 and 14, we reach the same conclusion with respect to dependent claims 2–13 and 15–19. *See Mylan Pharms. Inc. v. Research Corp. Techs., Inc*., 914 F.3d 1366, 1376 (Fed. Cir. 2019) ("Dependent claims, with added limitations, are generally not obvious when their parent claims are not." (citing *W.L. Gore & Assocs., Inc., v. Garlock, Inc*., 721 F.2d 1540, 1555 (Fed. Cir. 1983))).

d) Objective Indicia of Nonobviousness

Patent Owner presents argument and evidence on objective indicia of non-obviousness. PO Resp. 10–18. Because we determine that Petitioner has not demonstrated sufficiently that the prior art would have taught each of the limitations of challenged claims 1–19, we need not determine whether Patent Owner's evidence of objective indicia of nonobviousness weighs even further against a conclusion of obviousness. *See Hamilton Beach Brands, Inc. v. f'real Foods, LLC*, 908 F.3d 1328, 1343 (Fed. Cir. 2018) (holding, in affirming Board decision determining that petitioner had not

shown unpatentability, that "objective indicia of nonobviousness" "need not [be] addressed" because the court "affirmed the Board's findings regarding the failure of the prior art to teach or suggest all [claim] limitations"); *Palo Alto Networks, Inc. v. Finjan, Inc.*, 748 F. App'x 317, 324 (Fed. Cir. 2018) (non-precedential) (affirming Board decision holding that petitioner failed to establish unpatentability due to a lack of disclosure of a claim limitation, without reaching secondary considerations, and holding that "it was not necessary for the Board to consider" expert testimony "limited to the issue of secondary considerations").

e) Summary

Accordingly, we find that Petitioner has not shown by a preponderance of the evidence that independent claims 1 and 14 of the '408 patent would have been obvious over Kahle, DICOMView, and MicroTech; dependent claims 2, 6–11, and 15–19 would have been obvious in view of Kahle, DICOMView, and MicroTech; or dependent claims 3–5, 12, and 13 would have been obvious over Kahle, DICOMView, MicroTech, and Farrell.

III. CONCLUSION

In summary:

Claims	35 U.S.C. §	References	Claims Shown Unpatentable	Claims Not Shown Unpatentable
1, 2, 6–11, 14–19	103(a)	Kahle, DICOMView, MicroTech		1, 2, 6–11, 14–19
3–5, 12, 13	103(a)	Kahle, DICOMView, MicroTech, Farrell		3–5, 12, 13
Overall Outcome				1–19

IV. ORDER

Accordingly, it is

ORDERED that Petitioner has not demonstrated by a preponderance of the evidence that any one of claims 1–19 of U.S. Patent 7,965,408 B2 is unpatentable; and

FURTHER ORDERED that because this is a Final Written Decision, parties to the proceeding seeking judicial review of the decision must comply with the notice and service requirements of 37 C.F.R. § 90.2.

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CERTIFICATE OF SERVICE

The undersigned hereby certifies that, in addition to being filed with the Patent Trial and Appeal Board electronically with the United States Patent and Trademark Office, the original of the foregoing NOTICE OF APPEAL TO THE UNITED STATES COURT OF APPEALS FOR THE FEDERAL CIRCUIT BY PETITIONER ALTAMONT SOFTWARE, INC. is being filed by hand on July 14, 2020 with the Director of the United States Patent and Trademark Office:

Director of the United States Patent and Trademark Office
c/o Office of the General Counsel
Madison Building East, Room 10B20
600 Dulany Street
Alexandria, VA 22314-5793

Dated: July 14, 2020

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CERTIFICATE OF SERVICE

The undersigned hereby certifies that a true and correct copy of the foregoing NOTICE OF APPEAL TO THE UNITED STATES COURT OF APPEALS FOR THE FEDERAL CIRCUIT BY PETITIONER ALTAMONT SOFTWARE, INC. and the prescribed fees are being filed electronically on July 13, 2020 with the Clerk's Office of the United States Court of Appeals for the Federal Circuit:

United States Court of Appeals for the Federal Circuit
717 Madison Place, N.W., Suite 401
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Dated: July 14, 2020

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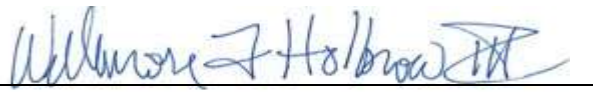
By: 

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The undersigned hereby certifies that a true and correct copy of the foregoing NOTICE OF APPEAL TO THE UNITED STATES COURT OF APPEALS FOR THE FEDERAL CIRCUIT BY PETITIONER ALTAMONT SOFTWARE, INC. is being served on the following counsel of record for Patent Owner by filing this document electronically with the United States Patent & Trademark Office as well as delivering a copy via email to the following:

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