UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

FUJIFILM CORPORATION
Petitioner-Appellee

v.

SONY CORPORATION
Patent Owner-Appellant

Inter Partes Review IPR2017-01356
Patent 7,016,137

NOTICE OF APPEAL TO THE UNITED STATES COURT OF APPEALS FOR THE FEDERAL CIRCUIT

BY SONY CORPORATION

Notice is hereby given under 35 U.S.C. §§ 141 and 142 and 28 U.S.C. § 1295(a)(4)(A) that Patent Owner Sony Corporation ("Sony") appeals to the U.S. Court of Appeals for the Federal Circuit for the instant matter, *inter partes* review IPR2017-01356, *Fujifilm Corporation v. Sony Corporation.* Sony appeals the Final Written Decision of the Patent Trial and Appeal Board ("Board"), entered December 20, 2018 (attached).

Sony appeals all grounds of unpatentability of claims 1-4 of U.S. Patent No. 7,016,137. Specifically, Sony appeals the Board's conclusion and underlying findings that claims 1-4 would be unpatentable under 35 U.S.C. § 103 over Ikeda II and Platte, Ikeda II and ECMA Standard, and Takayama and ECMA Standard, including the Board's construction of the following claim terms: "tape-oriented recording and/or reproducing means," "memory accessing means," "information acquiring means," "operation controlling means," and "once said magnetic tape is formatted." Sony further appeals the Board's denial of Sony's motion to amend under 35 U.S.C. § 316(d) and 37 C.F.R. § 42.121, including the Board's conclusion and underlying findings that Sony did not meet its burden of production with respect to the written description requirement, the Board's construction of "stored in an area of memory that cannot be rewritten," and the Board's conclusion and underlying findings that proposed substitute claims 6-9 would not be patentable over the prior art. Sony appeals all other issues decided adversely to

Patent Owner in any orders, decisions, rulings, and opinions; the Board's consideration and analysis of the expert testimony, prior art, and other evidence in the record; and the Board's factual findings, conclusions of law, or other determination supporting or relating to the above issues.

Pursuant to 37 C.F.R. § 90.3, this appeal is timely, having been duly filed within 63 days after the date of Final Written Decision.

Respectfully Submitted,

Date: February 21, 2019

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CERTIFICATE OF SERVICE

I, Andrew S. Baluch, certify that the documents referenced below:

NOTICE OF APPEAL TO THE UNITED STATES COURT OF APPEALS FOR THE FEDERAL CIRCUIT BY SONY CORPORATION

together with attachments were caused to be served upon counsel of record and filed in the United States Patent and Trademark Office and the Court of Appeals for the Federal Circuit in this matter on February 21, 2019 by causing them to be delivered by hand delivery; via electronic mail; via electronically filing the document with the USPTO's E2E system; as follows:

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United States Court of Appeals for the Federal Circuit (**via hand delivery**)
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United States Patent & Trademark Office (**via electronic filing in E2E**)
Patent Trial and Appeal Board

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UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

FUJIFILM CORPORATION,
Petitioner,

v.

SONY CORPORATION,
Patent Owner.

Case IPR2017-01356
Patent 7,016,137 B2

Before JEFFREY S. SMITH, BART A. GERSTENBLITH, and PATRICK M. BOUCHER, *Administrative Patent Judges*.

SMITH, *Administrative Patent Judge*.

FINAL WRITTEN DECISION
35 U.S.C. § 318(a) and 37 C.F.R. § 42.73

I. INTRODUCTION

We have jurisdiction under 35 U.S.C. § 6. This Final Written Decision issues pursuant to 35 U.S.C. § 318(a). For the reasons that follow, we determine Petitioner has shown by a preponderance of the evidence that claims 1–4 of U.S. Patent No. 7,016,137 B2 (Ex. 1001, "the '137 patent") are unpatentable.

Petitioner, Fujifilm Corporation, filed a Petition for *inter partes* review of claims 1–4 of the '137 patent. Paper 1 ("Pet."). Patent Owner, Sony Corporation, filed a Preliminary Response. Paper 7 ("Prelim. Resp."). In our Decision to Institute, we instituted *inter partes* review on all claims challenged in the Petition, but not on all grounds. Paper 10. After our Decision to Institute, the Supreme Court issued its decision in *SAS Institute Inc. v. Iancu*, 138 S. Ct. 1348 (2018). Both parties informed the Board that they would not seek institution on all grounds in the Petition. Paper 24. Given that neither party seeks *SAS*-based relief, we did not, and do not, *sua sponte* revive the non-instituted grounds. "Finality and expedition interests strongly counsel against such action. And so does the Court's emphasis on the petitioner's control of the contours of the proceeding." *PGS Geophysical AS v. Iancu*, 891 F.3d 1354, 1363 (Fed. Cir. 2018).

Patent Owner filed a Response to the Petition. Paper 19 ("PO Resp."). Petitioner filed a Reply. Paper 26 ("Reply").

Patent Owner also filed a contingent Motion to Amend. Paper 20 ("Mot."). Petitioner filed an Opposition. Paper 27 ("Opp."). Patent Owner filed a Reply in support of its Motion. Paper 29 ("PO Reply"). Patent Owner's Motion is contingent on any of the challenged claims being found unpatentable.

Petitioner filed a Motion to Exclude Evidence, namely, Exhibits 2049 and 2050, Patent Owner filed an Opposition, and Petitioner filed a Reply in support of its Motion to Exclude. Papers 34, 38, 42.

Patent Owner filed a Motion to Seal Exhibits 2018, 2026, 2028, 2030, 2035, and 2046. Paper 21. Patent Owner's Motion to Seal includes a proposed Protective Order (App. A to the Motion), and indicates that the parties agree to entry of the Order. *Id.* at 2.

We determine by a preponderance of the evidence that claims 1–4 are unpatentable. We deny Petitioner's Motion to Exclude, deny Patent Owner's Motion to Amend, grant Patent Owner's Motion to Seal, and enter the parties' proposed Protective Order.

A. Related Matters

The '137 patent is the subject of the following related litigations:

Sony Corporation, et al. v. Fujifilm Holdings Corporation, et al., Case No. 337-TA-1036 (ITC); and

Sony Corporation, et al. v. Fujifilm Holdings Corporation et al., Case No. 1:16-cv-25210 (S.D. Fla.). Pet. 1; Paper 4.

Claim 5 of the '137 patent is the subject of IPR2016-01181. Paper 4.

B. The '137 Patent

The '137 patent relates generally to a tape cassette containing a magnetic tape for use in a tape drive apparatus capable of recording and/or reproducing information to and/or from the tape cassette. Ex. 1001, 1:7–12. In the "Background of the Invention," the '137 patent states that "management information or the like is needed for the drive [apparatus] to manage appropriately its recording and/or reproduction of data to and/or

from the magnetic tape. The management information includes information about diverse locations on the magnetic tape as well as a use history of the tape." *Id.* at 1:5, 25–30.

In some prior art tape cassettes, management information was stored on the magnetic tape itself, for example at the beginning of the tape or at the beginning of each of multiple partitions of the tape. *Id.* at 1:31–33. But, when management information must be accessed from such a cassette tape, the magnetic tape must be physically advanced to the portion thereof on which the relevant management information is stored, which creates time delays. *Id.* at 1:59–67.

In at least one prior art tape cassette "a nonvolatile memory is installed within a tape cassette enclosure so that the memory may accommodate management information." *Id.* at 2:8–11. Although this arrangement avoided having to advance the magnetic tape to access management information, it was susceptible to tampering such that "the initially installed nonvolatile memory might be removed from within the enclosure and replaced by an illicit nonvolatile memory." *Id.* at 2:32–35.

The '137 patent also stores management information not on the magnetic tape but on a separate memory medium within the tape cassette, making it accessible regardless of the tape's position. Figure 1 of the '137 patent is reproduced below.

FIG. 1

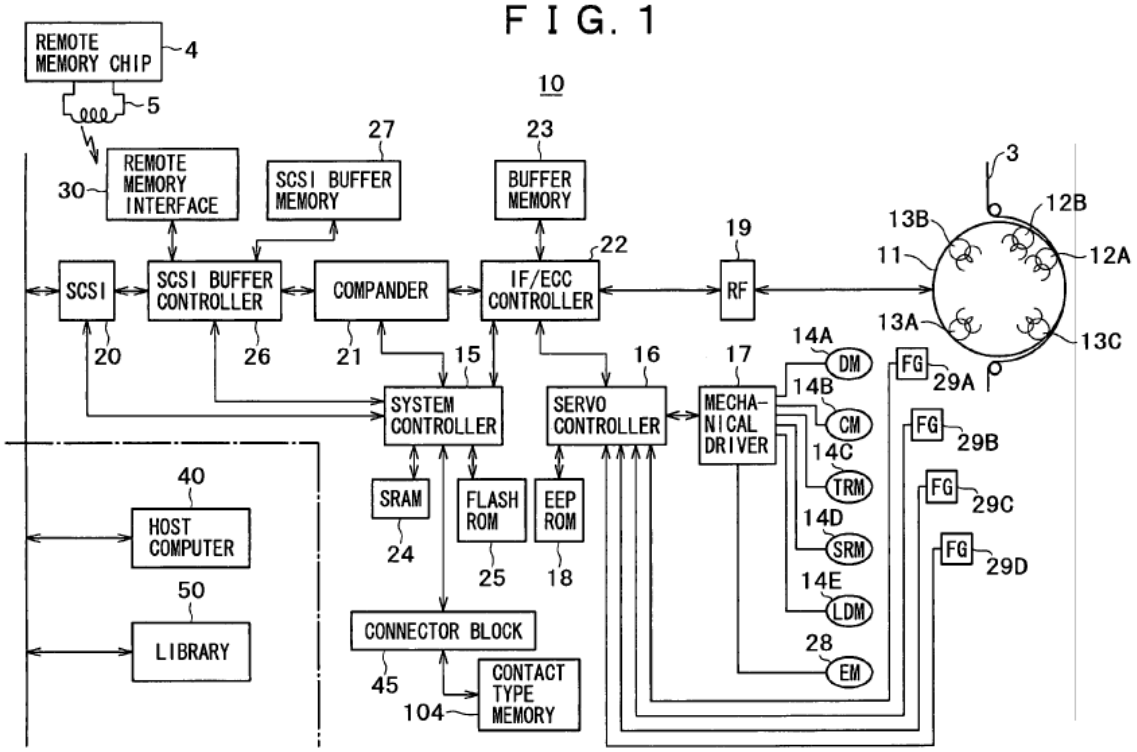


Figure 1 illustrates tape streamer drive 10 compatible with tape cassette 1 equipped with remote memory chip 4. Ex. 1001, 7:39–41. The tape streamer drive operates on the helical scan principle, discussed further below, in recording and reproducing data to and from magnetic tape 3 in the tape cassette. *Id.* at 7:42–44. Rotary drum 11 has two write heads 12A and 12B and three read heads 13A, 13B, and 13C. Ex. 1001, 7:45–50.

Figure 3A of the ’137 patent is reproduced below.

FIG. 3A

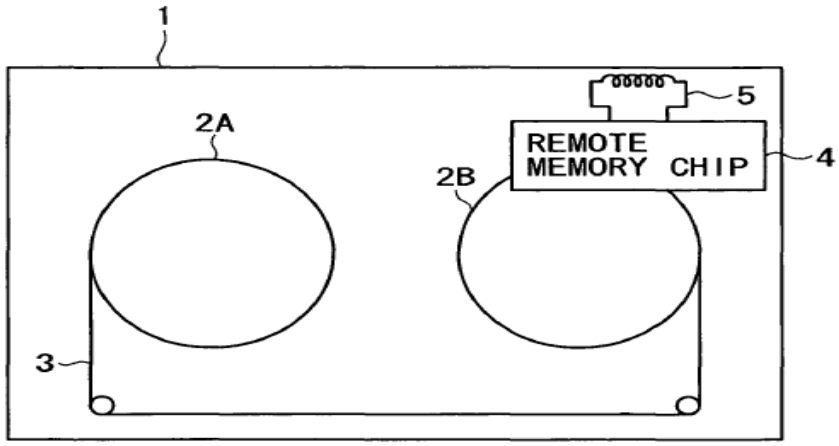


Figure 3A illustrates tape cassette 1 containing remote memory chip 4 furnished with antenna 5, which allows the chip to communicate data wirelessly with a remote memory interface of a compatible tape streamer drive. Ex. 1001, 5:46–50. The memory holds management information for managing write and/or read operations to and/or from the magnetic tape. *Id.* at 4:12–14; 5:52–62. “The memory accommodates format state designation information designating an unformatted state when the magnetic tape has yet to be formatted. The format state designation information further designates a formatted state once the magnetic tape is formatted.” *Id.* at 4:14–19. The ’137 patent discusses how the format designation information is used to reveal whether a tape may have been tampered with. *Id.* at 4:26–43.

C. Illustrative Claim

Independent claim 1 is illustrative of the claimed subject matter:

1. A tape drive apparatus comprising:

tape-oriented recording and/or reproducing means for recording and/or reproducing information to and/or from a magnetic tape housed in a tape cassette furnished as a recording medium, said tape cassette being loaded in the apparatus;

> memory accessing means for accessing a memory which is incorporated in said tape cassette furnished as said recording medium and which holds management information for write and/or read operations to and/or from said magnetic tape, said memory accessing means writing and/or reading information to and/or from said memory following the accessing;
>
> information acquiring means for acquiring format state designation information from said memory by causing said memory accessing means to access said memory for information retrieval, said format state designation information designating an unformatted state when said magnetic tape has yet to be formatted, said format state designation information further designating a formatted state once said magnetic tape is formatted; and
>
> operation controlling means which, based at least on specifics of the acquired format state designation information and on a result of a read operation on said magnetic tape by said tape-oriented recording and/or reproducing means, controls a write and/or a read operation on said recording medium.

D. Asserted Grounds of Unpatentability

We instituted *inter partes* review for the following grounds of unpatentability:

References	**Basis**	**Challenged Claims**
Ikeda II[1] and Platte[2]	§ 103	1–4
Ikeda II and ECMA Standard[3]	§ 103	1–4
Takayama[4] and ECMA Standard	§ 103	1–4

[1] Japanese Patent Application Publication No. 2000-113653 published Sept. 30, 1998 (Ex. 1006).
[2] U.S. Patent No. 6,128,148 issued Oct. 3, 2000 (Ex. 1005).
[3] "8 mm Wide Magnetic Tape Cartridge for Information Interchange – Helical Scan Recording – AIT-3 Format," 2002 (Ex. 1003).
[4] Japanese Patent Application Publication No. 2000-268443 published Sep. 29, 2000 (Ex. 1007).

II. DISCUSSION

A. Claim Construction

In an *inter partes* review proceeding based on a petition filed prior to November 13, 2018, we construe claim terms in an unexpired patent according to their broadest reasonable construction in light of the specification of the patent in which they appear. 37 C.F.R. § 42.100(b) (2016); *Cuozzo Speed Techs., LLC v. Lee*, 136 S. Ct. 2131, 2144–46 (2016) (upholding the use of the broadest reasonable interpretation standard applied in *inter partes* reviews). Consistent with the broadest reasonable construction, claim terms are presumed to have their ordinary and customary meaning as understood by a person of ordinary skill in the art in the context of the entire patent disclosure. *In re Translogic Tech., Inc.*, 504 F.3d 1249, 1257 (Fed. Cir. 2007). An inventor may provide a meaning for a term that is different from its ordinary meaning by defining the term in the specification with reasonable clarity, deliberateness, and precision. *In re Paulsen*, 30 F.3d 1475, 1480 (Fed. Cir. 1994).

"Construing a means-plus-function claim term is a two-step process. The court must first identify the claimed function. Then, the court must determine what structure, if any, disclosed in the specification corresponds to the claimed function." *Williamson v. Citrix Online, LLC*, 792 F.3d 1339, 1351 (Fed. Cir. 2015) (en banc) (citation omitted). In cases involving a special purpose computer-implemented means-plus-function limitation, the Federal Circuit requires "that the specification disclose an algorithm for performing the claimed function." *Media Rights Techs., Inc. v. Capital One Fin. Corp.*, 800 F.3d 1366, 1374 (Fed. Cir. 2015). "A description of the function in words may disclose, at least to the satisfaction of one of ordinary

skill in the art, enough of an algorithm to provide the necessary structure under § 112, ¶ 6." *Typhoon Touch Techs., Inc. v. Dell, Inc.*, 659 F.3d 1376, 1386 (Fed. Cir. 2011). Several claim terms explicitly recite that they are "means" for performing a function, and the parties do not dispute that § 112, ¶ 6 governs the construction of these terms. *See* Pet. 17–20; PO Resp. 23–32.

1. "tape-oriented recording and/or reproducing means"

Claim 1 recites "tape-oriented recording and/or reproducing means" with the function of "recording and/or reproducing information to and/or from a magnetic tape housed in a tape cassette furnished as a recording medium."

Petitioner contends the '137 patent discloses the corresponding structure as "a tape streamer drive 10 that operates on the helical scan principle . . . [using] a rotary drum 11 with two write heads . . . and three read heads." Pet. 17 (citing Ex. 1001, 7:42–50). Petitioner's declarant, John Koski, testifies that one of ordinary skill in the art would have understood the corresponding structure disclosed in the specification to be that of a helical scan system using a rotary drum with two write heads and three read heads. Ex. 1008 ¶¶ 111–112 (citing Ex. 1001, Fig. 1, 7:11–13, 7:42–50, 9:15–16).

In our Decision to Institute, we construed "tape-oriented recording and/or reproducing means" as being a means-plus-function limitation with the function of recording and/or reproducing information to and/or from a magnetic tape housed in a tape cassette furnished as a recording medium, and with the corresponding structure encompassing at least a tape streamer

drive that operates on the helical scan principle using a rotary drum with two write heads and three read heads and equivalents. Paper 10, 8.

Patent Owner contends that the Board's construction in the Decision to Institute is too narrow. PO Resp. 24. According to Patent Owner, the helical scan system and the rotary drum are not necessary to perform the function of recording or reproducing information. *Id.* at 25–26. Patent Owner contends the corresponding structure encompasses a linear transport system in addition to a helical scan system. *Id.* at 26. Patent Owner, relying on testimony of its declarant, James A. Bain, Ph.D., contends that the corresponding structure is a tape streamer drive with write head(s) and/or read head(s). *Id.* at 24 (citing Ex. 2018 ¶¶ 75–77). Dr. Bain testifies that he does not understand what components beyond a drum and heads are included in a helical scan system. Ex. 2018 ¶ 82. Dr. Bain testifies that the rotary drum disclosed in the '137 patent does not perform the function of recording or reproducing information; rather, it operates with the drum motor to provide relative motion between the heads and tape to facilitate the recording process. *Id.* ¶ 83.

Petitioner contends that Patent Owner's proposed construction, by omitting the helical scan principle using a rotary drum, seeks to capture structures not disclosed in the specification, such as linear scan systems, which use a linear array of heads to write data in linear tracks, instead of a rotating drum to write in diagonal data tracks. Reply 7–8 (citing Ex. 1008 ¶¶ 76–78, 82). Petitioner contends that 35 U.S.C. § 112, ¶ 6 requires construing a means plus function limitation to "cover the corresponding structure . . . described in the specification," and the only structure disclosed in the specification is that of a helical scan system using a rotary drum. *Id.*

at 8 (citing Ex. 1001, 7:38–50; Ex. 1008 ¶¶ 111–112). Petitioner, relying on testimony of Mr. Koski, contends that in helical scan systems, the heads are mounted on the rotary drum, as illustrated in Figure 1 of the '137 patent, and the drum rotates such that the heads move over the tape in diagonal tracks. *Id.* (citing Ex. 1001, Fig. 1; Ex. 1008 ¶¶ 76–78, 82). Petitioner contends that the heads disclosed in the '137 patent would not be able to read or write data without the drum because no other mechanism would allow the heads to move relative to the tape. *Id.*

The '137 patent discloses operating the drive "on the helical scan principal in recording and reproducing data to and from the magnetic tape 3 in the tape cassette 1," using a rotary drum having write heads and read heads structured with different angles. Ex. 1001, Fig. 1, 7:38–51. The '137 patent does not disclose any other structure for recording or reproducing data to or from the magnetic tape. Mr. Koski testifies that a helical scanning system mounts heads on a rotating cylindrical drum and writes data on magnetic tape as a diagonal stripe. Ex. 1008 ¶ 76.

We agree with Petitioner, that Patent Owner's proposed construction would encompass structure not described in the specification of the '137 patent. Reply 7–8. We rely on Mr. Koski's testimony in determining that the corresponding structure described in the specification of the '137 patent, namely, a rotary drum having heads structured with different azimuth angles and operating on the helical scan principal in recording and reproducing data, describes a helical scanning system that writes data on the magnetic tape as a diagonal stripe. Ex. 1001, 7:38–51; Ex. 1008 ¶¶ 76, 111–112. Thus, we construe the claimed "tape-oriented recording and/or reproducing means" as a means-plus-function limitation with the function of

recording and/or reproducing information to and/or from a magnetic tape housed in a tape cassette furnished as a recording medium, and with the corresponding structure encompassing at least a tape streamer drive that operates on the helical scan principle using a rotary drum with two write heads and three read heads and equivalents.

2. "memory accessing means"

Claim 1 recites "memory accessing means" with the functions of "accessing a memory which is incorporated in said tape cassette furnished as said recording medium and which holds management information for write and/or read operations to and/or from said magnetic tape," and "writing and/or reading information to and/or from said memory following the accessing." In the Decision to Institute, we construed "memory accessing means" as a means-plus-function limitation with the functions of accessing a memory which is incorporated in said tape cassette furnished as said recording medium and which holds management information for write and/or read operations to and/or from said magnetic tape, and writing and/or reading information to and/or from said memory following the accessing, and with the corresponding structure encompassing at least either a remote interface or a connector block and equivalents. Paper 10, 9.

Patent Owner does not contest our preliminary construction; rather, relying on testimony of Dr. Bain, Patent Owner contends that the corresponding structure should not require additional structure proposed by Petitioner. PO Resp. 27 (citing Ex. 2018 ¶ 86). Dr. Bain testifies that he agrees with our construction of this limitation from the Decision to Institute. Ex. 2018 ¶ 86. In Reply, Petitioner adopts our preliminary construction of

this term. Reply 9. Accordingly, we adopt our construction of this term from the Decision to Institute, as produced above.

3. "information acquiring means"

Claim 1 recites "information acquiring means" with the function of "acquiring format state designation information from said memory by causing said memory accessing means to access said memory for information retrieval." In our Decision to Institute, we construed "information acquiring means" as a means-plus-function limitation with the function of acquiring format state designation information from said memory by causing said memory accessing means to access said memory for information retrieval and with the corresponding structure encompassing at least a general purpose processor programmed to perform step S104 of the '137 patent to read data from memory and to place data into RAM and equivalents. Paper 10, 9–10.

Petitioner contends the '137 patent discloses the corresponding structure as system controller 15 executing step S104 of Figure 15. Pet. 18 (citing Ex. 1001, 18:59–62 ("step S104, the system controller 15 reads data from the MIC and places them illustratively into the SRAM 24")). Patent Owner, relying on testimony from both Mr. Koski and Dr. Bain, proposes the corresponding structure for the "information acquiring means" is a WORM-enabled controller programmed to perform step S104 of the '137 Patent. PO Resp. 27–29 (citing Ex. 2008, 41:13–23, 64:19–65:10; Ex. 2018 ¶¶ 87–89, 91). Patent Owner's declarant, Dr. Bain, initially testified that a system controller is a well-known type of microprocessor that performs basic functions to control the system such as processing, receiving, and storing data. Ex. 2001 ¶ 69. Dr. Bain subsequently testified that the

system controller is not any kind of general purpose processor, but needs to be a WORM-enabled controller, in order to detect the tampering mentioned in the background section of the '137 patent. Ex. 2018 ¶ 91 (citing Ex. 1001, 2:61–3:5; Ex. 2008, 41:13–23, 64:19–65:10).

Petitioner contends that Dr. Bain is now improperly reading unclaimed limitations from the specification into the claims, such as WORM-enabled controller, and that Dr. Bain does not explain this reversal of opinion. Reply 9–10. Petitioner contends that the example provided in the background section is not necessarily embodied in the claims. *Id.* (citing Ex. 1022, 130:5–137:4). Petitioner further contends that Patent Owner mischaracterizes Mr. Koski's testimony. *Id.* at 9.

Mr. Koski initially testified that the structure corresponding to the "information acquiring means" is "system controller 15 and the algorithm shown in FIG. 15, Step S104." Ex. 1008 ¶ 115 (citing Ex. 1001, Fig. 1, 18:59–62). Mr. Koski's cross-examination testimony, cited by Patent Owner, includes the following exchange:

> Q. Where is the fact that the tape cassette is WORM feature equipped detected in flow chart figure 15?
>
> A. It is detected, for instance, in step S104, read data from MIC and hold them.
>
> Q. And in order for the flow chart to distinguish between a WORM and a non-WORM cassette, must the algorithm include programming to make that distinction?
>
> A. For the generation that supports WORM, that's correct.

Ex. 2008, 41:13–23. Here, Mr. Koski does not testify that the system controller must be a WORM-enabled controller, but rather, that the system controller is a WORM-enabled controller for "the generation that supports WORM." Neither the claim language nor step S104, shown in Figure 15 and described in the detailed description of the '137 patent, however,

requires step S104 ("read data from MIC and hold them") to be performed exclusively by the generation that supports WORM. Ex. 1001, Fig. 15, 18:59–62.

Patent Owner also cites to Mr. Koski's cross-examination testimony about the claimed operation controlling means, which includes the following exchange:

> Q. You said that it's the operation controlling means which is controlling step S119, right?
> A. It arrives at step S119.
> Q. Operation controlling means is the system controller 15, correct?
> A. Correct.
> Q. And in order to perform the function described in this paragraph, the last full paragraph of column 19, would you agree that the system controller 15 is a WORM-enabled controller?
> MR. KNIERIM: Objection to form.
> A. Yes. I think it -- I would agree that it's a WORM controller.
> Q. Because if it were not a WORM controller, it could not perform step S119 as described here in the last full paragraph of column 19, correct?
> A. Correct.

Ex. 2008, 64:15–65:10. Here, Mr. Koski testifies that the controller that performs step S119 is a WORM-enabled controller. Mr. Koski is not testifying to the controller performing step S104. Further, as discussed below in our construction of "operation controlling means," step S119 is not required to be performed by the controller. We determine that Mr. Koski's initial testimony is consistent with his cross-examination testimony.

Dr. Bain's second declaration testimony, that requires system controller 15 to be a WORM-enabled controller, conflicts with his first declaration testimony that a "system controller is a well known type of

microprocessor that performs basic functions to control the system . . . in which it is used" and that the "process of acquiring information (i.e., data) is a basic function that can be achieved without any special programming needed in the system controller." Ex. 2001 ¶¶ 69–71; Ex. 2018 ¶¶ 88–91. Further, Dr. Bain, when asked on cross-examination whether a tape drive with a system controller that was not WORM enabled could read the contents of a MIC, testifies that "it certainly could." Ex. 1022, 135:16–20.

The Federal Circuit has held that "the specification is always highly relevant to the claim construction analysis. Usually, it is dispositive; it is the single best guide to the meaning of a disputed term." *Phillips v. AWH Corp.*, 415 F.3d 1303, 1315 (Fed. Cir. 2005). We resolve the conflict between Mr. Koski and Dr. Bain, and between Dr. Bain's different testimonies, by relying on the disclosure of the specification of the '137 patent, which describes step S104 as "read data from MIC and hold them," but does not describe step S104 to include detecting a WORM feature of the cassette. Ex. 1001, Fig. 15, 18:59–62. Accordingly, we adopt our preliminary construction of the claimed "information acquiring means" from our Decision to Institute, reproduced above.

4. "operation controlling means"

Claim 1 recites "operation controlling means" with the function of "control[ling] a write and/or a read operation on said recording medium" based on "specifics of the acquired format state designation information and on a result of a read operation on said magnetic tape by said tape-oriented recording and/or reproducing means." In our Decision to Institute, we construed "operation controlling means" recited in claim 1 as a means-plus-function limitation with the function of controlling either a write operation,

or a read operation, or both, based on specifics of the acquired format state designation information and on a result of a read operation on said magnetic tape, with the corresponding structure encompassing at least a general purpose processor programmed to perform at least one of steps S119–122 of Figure 15 of the '137 patent and equivalents. Paper 10, 11.

Petitioner contends the '137 patent discloses the corresponding structure as system controller 15 carrying out an algorithm described with reference to Figure 15, which controls a write and/or read operation. Pet. 18–19 (citing Ex. 1001, 10:48–51; Ex. 1008 ¶¶ 117–121). Petitioner's declarant, Mr. Koski, testifies that the algorithm of Figure 15 of the '137 patent is described in column 17, line 60 through column 23, line 56, and includes step S122 to write data once to unrecorded areas on the magnetic tape and to read data from the recorded areas of the tape. Ex. 1008 ¶ 118 (citing Ex. 1001, 20:9–23).

Patent Owner contends that the corresponding structure is a WORM-enabled controller programmed to perform at least step S119 of Figure 15 of the '137 patent. PO Resp. 29–30 (citing Ex. 2018 ¶ 96). According to Patent Owner, both experts agree that system controller 15 must be a WORM-enabled controller. *Id.* at 30. We disagree with Patent Owner that both experts agree that system controller must be a WORM-enabled controller, as discussed in our construction of "information acquiring means" above.

Patent Owner contends that performing at least one of steps S119–S122 would encompass "only . . . step S122 to be programmed," and would conceivably permit an illegitimate cartridge to undergo normal read and write operations, thereby defeating the anti-tampering functionality of the

’137 patent. *Id.* (citing Ex. 2018 ¶ 96). According to Patent Owner, the corresponding structure should be construed as system controller 15 programmed to perform the anti-tampering step S119. *Id.*

Petitioner contends that Dr. Bain’s original declaration illustrates why requiring step S119 is improper. Reply 10 (citing Ex. 2001 ¶ 73). Dr. Bain initially testified that each one of steps S119 to S122 “individually controls a given write and/or read operation (for S122, if the tape is WORM, the drive will cancel any command to overwrite the recorded areas).” Ex. 2001 ¶ 73.

Dr. Bain’s original testimony is consistent with the claim language and the specification of the ’137 patent. The claim language recites controlling only a write operation, or controlling only a read operation, or controlling both. Step S119 of Figure 15 performs a sequence corresponding to a corrupted tape cassette to disable the tape stream driver in both read and write operations. Ex. 1001, 19:43–48. Step S120 performs a sequence corresponding to a blank, or unformatted, magnetic tape, to cause the tape to be formatted. *Id.* at 20:61–21:6. Step S121 performs a sequence corresponding to a tape cassette with its magnetic tape formatted defectively, similar to that of the blank tape in step S120. *Id.* at 21:33–38. Step S122 performs a sequence corresponding to the format of the tape, to write data to unrecorded areas and to read data from recorded areas. *Id.* at 20:10–23.

In light of the explicit claim language, the disclosures in the specification, and Dr. Bain’s original testimony that each of steps S119 to S122 “individually controls a given write and/or read operation,” and in the same sentence, testifying that step S122 alone controls such an operation, we do not agree with Patent Owner that step S119 is required. Accordingly, we adopt our preliminary construction of this term, reproduced above.

Claim 2 recites "said operation controlling means" performs the function of "determin[ing] whether there exists a predetermined logical structure in said management information retrieved as a result of said read operation on said magnetic tape by said tape-oriented recording and/or reproducing means for write and/or read operations to and/or from said magnetic tape." Ex. 1001, 24:55–60.

Patent Owner contends that the corresponding structure for the "operation control means" recited in claim 2 includes a WORM-enabled controller. PO Resp. 31–32. We disagree, as discussed in our construction of claim 1 above.

Mr. Koski testifies that the '137 patent discloses the corresponding structure in Figure 15 step S106, and column 19 lines 7–13. Ex. 1008 ¶ 119. Dr. Bain testifies that step S106 is one way to carry out the function, as the system controller "checks the currently held system log data from the magnetic tape to determine whether the system log has a logical data structure based on a stipulated format." Ex. 2001 ¶ 78 (citing Ex. 1001, 19:10–13).

We construe the structure corresponding to the function of determining whether there exists a predetermined logical structure in said management information as encompassing at least a general purpose processor programmed to perform step S106 of Figure 15 of the '137 patent and equivalents.

Claim 3 recites "said operation controlling means" performs the function of "determin[ing] whether a reproduced signal is obtained as a result of said read operation on said magnetic tape by said tape-oriented

recording and/or reproducing means, said read operation retrieving data from a predetermined area of said magnetic tape." Ex. 1001, 24:62–67.

Patent Owner contends that the corresponding structure for the "operation control means" recited in claim 3 includes a WORM-enabled controller. PO Resp. 31–32. We disagree as discussed in our construction of claim 1 above.

Mr. Koski testifies that the '137 patent discloses the corresponding structure in step S109 of Figure 15 and column 20 lines 24–39. Ex. 1008 ¶ 120. Dr. Bain testifies that the '137 patent discloses corresponding structure as either step S109 or step S105 of Figure 15. Ex. 2001 ¶ 82 (citing Ex. 1001, 20:27–37).

We construe the structure corresponding to the function of determining whether a reproduced signal is obtained as a result of said read operation on said magnetic tape as encompassing at least a general purpose processor programmed to perform either step S105 or step S109 of Figure 15 of the '137 patent and equivalents.

5. "formatted"

Petitioner contends that the term "formatted" recited in claims 1 and 4 should be construed to mean "a signal has been recorded on the magnetic tape making it ready to accept user data." Pet. 19–20. Patent Owner does not address this term in the Patent Owner Response.

Absent a material dispute, the Board need not construe claim terms. *Vivid Techs., Inc. v. American Sci. & Eng'g, Inc.*, 200 F.3d 795, 803 (Fed. Cir. 1999). We determine this term does not require an express construction to resolve the parties' dispute.

6. "format state designation information"

Patent Owner contends "format state designation information" recited in claims 1 and 4 should be construed as "information indicating whether a tape is formatted, and if so, information indicating the format type." PO Resp. 32 (citing Ex. 2018 ¶¶ 99–115). To support this contention, Patent Owner cites to embodiments of the specification of the '137 patent that disclose format state as "formatted or unformatted, and format type." *Id.* at 34 (citing Ex. 1001, 19:26–34, 20:1–8, 23:41–49, 24:1–5). Petitioner contends that the specification of the '137 patent describes "format state designation information" without reference to "format type" several times. Reply 11–12 (citing Ex. 1001, 3:43–47, 24:1–5).

Both Petitioner and Patent Owner cite to column 24, lines 1 to 5, of the '137 patent to support their differing contentions. The commonly cited portion of the '137 patent discloses "[a]n item of the management information held in the memory constitutes format state designation information (MIC logical format type) designating the format state (formatted or unformatted) of the magnetic tape." Ex. 1001, 24:1–5. In addressing the MIC Logical Format Type disclosed by Ikeda II, discussed further below, Mr. Koski testifies that the MIC Logical Format Type field "by its very name indicates that it includes format type information." Ex. 1023 ¶ 77 (citing Ex. 1006 ¶ 53); Ex. 1008 ¶ 161. We rely on the '137 patent's description of the format state designation information as including "MIC logical format type," in construing "format state designation information" as encompassing at least information indicating whether a tape is formatted and information indicating a format type.

7. "once said magnetic tape is formatted"

Claims 1 and 4 each recite "said format state designation information designating a formatted state once said magnetic tape is formatted." Ex. 1001, 24:45–57, 25:19–21.

Patent Owner proposes construing this term as "storing the format state designation information in an area of memory that cannot be rewritten after the tape is formatted." PO Resp. 43. Patent Owner contends this proposed construction is consistent with the '137 patent's disclosure, that the "tape streamer drive 10 will not rewrite this area during its normal operations." *Id.* at 44–45 (quoting Ex. 1001, 19:37–39). Patent Owner, relying on a dictionary definition of the word "once," contends the meaning of "once" should be limited to "whenever" and construed as defining structural memory, otherwise, the word "once" is emptied of its essential meaning. *Id.* at 46–47 (citing Ex. 2018 ¶¶ 118, 121). According to Patent Owner, from the perspective of an end user using the tape, the memory has been locked in place and converted to read-only memory, and cannot be undone by reformatting as explained by the specification. *Id*.

Petitioner contends that Patent Owner's proposed construction improperly imports unclaimed subject matter into the claims. Reply 12–13 (citing Ex. 1023 ¶ 69). Mr. Koski testifies that "[b]ased on my knowledge and experience in the industry and the field of magnetic tapes and tape drives, [Read-Only Memory] ROM is memory that can never be re-written after its manufacture. It has no facility for writing, and therefore requires no further write protection to ensure that it is never re-written." Ex. 1023 ¶ 69.

We rely on Mr. Koski's testimony in determining that read-only memory can never be re-written after its manufacture. The specification of

the ’137 patent discloses, at best, that “tape streamer drive 10 will not rewrite this area *during its normal operations*.” Ex. 1001, 19:37–39 (emphasis added). Contrary to Patent Owner’s contention, the specification of the ’137 patent does not disclose that the format state designation information is stored in an area of memory that can never be re-written after the manufacture of the memory. Further, the specification of the ’137 patent does not explain a structural difference between a normal operation, when the tape streamer drive does not rewrite the memory, and an abnormal operation, when the tape streamer drive rewrites the memory.

The claim term recites a description of what the format state designation information designates “once” the magnetic tape is formatted, but does not recite structural limitations of the memory, nor distinguish normal operations and operations other than normal. The rest of the specification similarly discloses what the designation information designates once the tape is formatted, but does not disclose that the designation information includes structural limitations of memory. The definition of “once” cited by Patent Owner also does not describe structural limitations of the memory.

It appears that Patent Owner’s proposed construction of “once said magnetic tape is formatted” is designed to construe the claimed memory as requiring read-only portions, without actually construing the memory as so limited. Patent Owner does not persuade us that the broadest reasonable construction of “said format state designation information designating a formatted state once said magnetic tape is formatted” requires storing the format state designation information in an area of memory that cannot be rewritten after the tape is formatted.

We determine that this claim term does not otherwise require an express construction to resolve a dispute in this proceeding.

We also determine that none of the other terms require express construction to resolve a dispute.

B. Obviousness

A claim is unpatentable under 35 U.S.C. § 103(a) if "the differences between the subject matter sought to be patented 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 skill in the art; and (4) objective evidence of nonobviousness, i.e., secondary considerations, if in evidence. *See Graham v. John Deere Co. of Kansas City*, 383 U.S. 1, 17–18 (1966).

"A determination of whether a patent claim is invalid as obvious under § 103 requires consideration of all four *Graham* factors, and it is error to reach a conclusion of obviousness until all those factors are considered." *Apple Inc. v. Samsung Elecs. Co.*, 839 F.3d 1034, 1048 (Fed. Cir. 2016) (en banc) (citations omitted). "This requirement is in recognition of the fact that each of the *Graham* factors helps inform the ultimate obviousness determination." *Id.*

"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) (citing 35 U.S.C. § 312(a)(3) (requiring *inter partes* review petitions to identify "with particularity . . . the evidence that supports the grounds for the challenge to each claim")). This burden never shifts to 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)) (discussing the burden of proof in *inter partes* review).

Thus, to prevail in an *inter partes* review, Petitioner must explain how the asserted prior art or the proposed combinations of prior art would have rendered the challenged claims unpatentable. At this final stage, we determine whether a preponderance of the evidence of record shows that the challenged claims would have been obvious over the proposed combinations of prior art. Here, Patent Owner does not offer any evidence or argument pertaining to objective indicia of non-obviousness. Thus, our discussion focuses on the first three *Graham* factors.

C. Level of Ordinary Skill in the Art

Petitioner proposes that a "person of ordinary skill in the art would have earned a bachelor's degree in Electrical Engineering, Mechanical Engineering, or a closely related field (such as Computer Engineering), and would have two to three years of experience in the field of magnetic tape systems." Pet. 16. Patent Owner does not oppose the level of skill proposed by Petitioner. Consistent with the level of ordinary skill in the art reflected by the prior art of record, *see Okajima v. Bourdeau*, 261 F.3d 1350, 1355 (Fed. Cir. 2001); *In re GPAC Inc.*, 57 F.3d 1573, 1579 (Fed. Cir. 1995); *In re Oelrich*, 579 F.2d 86, 91 (CCPA 1978), we adopt Petitioner's unopposed position as to the level of ordinary skill in the art.

D. Obviousness in view of Ikeda II and Platte

Petitioner contends claims 1–4 are unpatentable over Ikeda II and Platte.

1. Ikeda II

Ikeda II discloses a tape drive device and recording medium, for performing recording/reproducing operations on a magnetic tape housed in a cassette equipped with a memory-in-cassette (MIC), when the tape cassette is loaded into the drive. Ex. 1006, Title, ¶¶ 11, 13–14. Figure 1 of Ikeda II[5] is reproduced below.

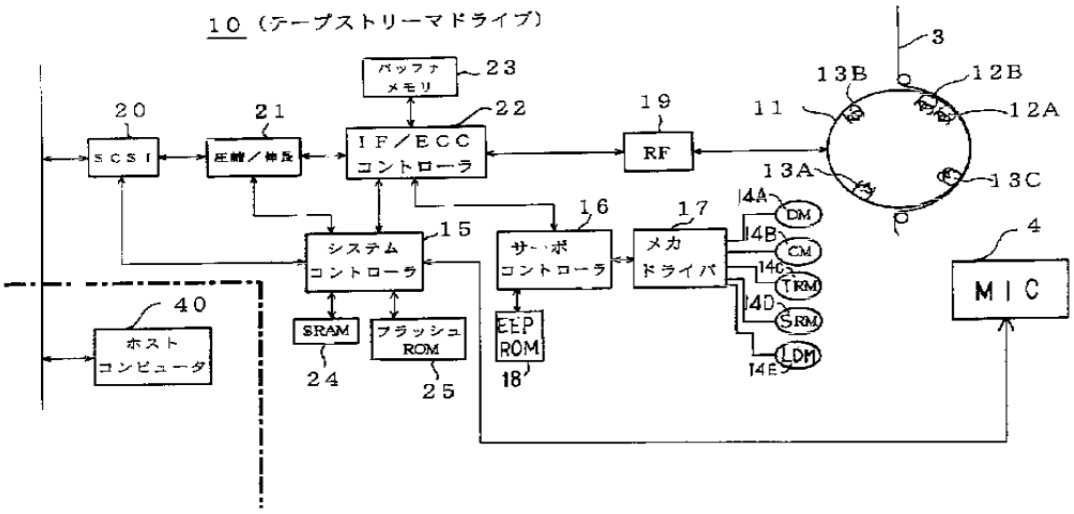


Figure 1 shows tape streamer drive 10 that performs recording and/or reproducing of information on magnetic tape 3 of cassette 1 using the helical scanning method. Ex. 1006 ¶ 14. Two recording heads 12A and 12B and three reproducing heads 13A, 13B, and 13C are provided on rotating drum 11. *Id.* Figure 1 also shows memory in cassette (MIC) 4. *Id.* ¶ 24.

[5] The reference numerals shown in Figure 1 of Ikeda II and Figure 1 of the '137 patent identify similar components.

System controller 15 can read information recorded on the MIC, or update management information in the MIC, via terminal pins. *Id.*

Ikeda II discloses storing management information in the MIC, including the use history of the magnetic tape, for the purpose of managing the recording/reproducing operations of the tape streamer drive. *Id.* ¶ 70. Ikeda II discloses that performing recording or reproducing will be determined based on the read-out of the system data from the MIC, and the read-out of the system area recorded on the magnetic tape. *Id.* ¶¶ 95–97.

2. Platte (Ex. 1005)

Platte relates to an electronic memory device for a magnetic tape cassette and a recording and/or reproducing apparatus. Ex. 1005, 1:12–14. Figure 4 of Platte is reproduced below.

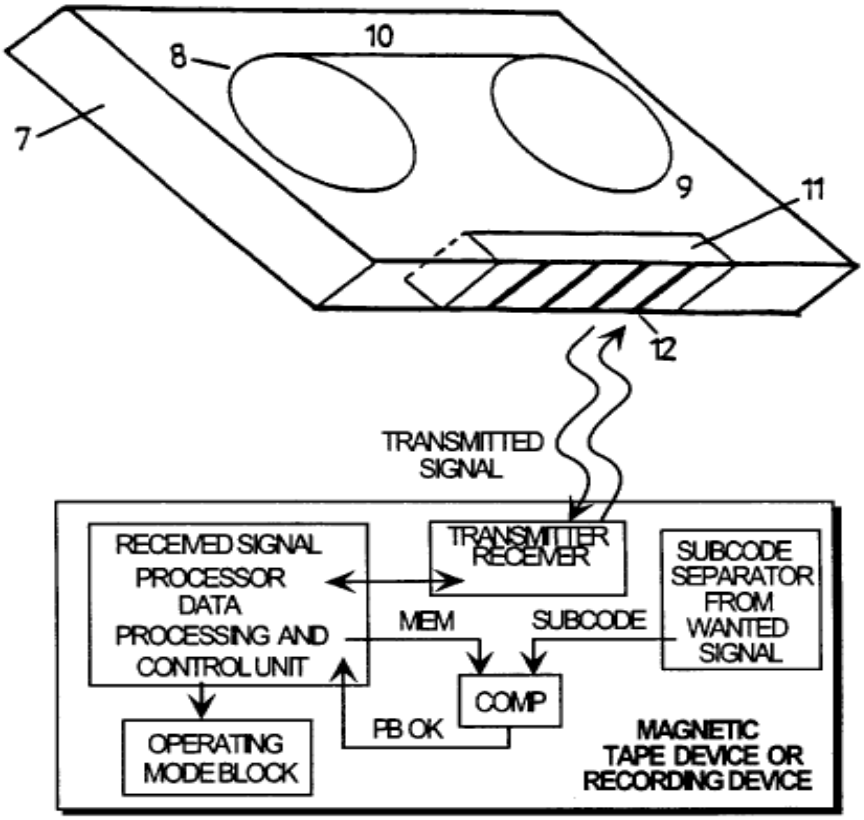
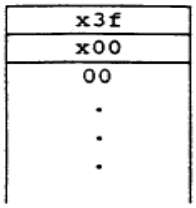


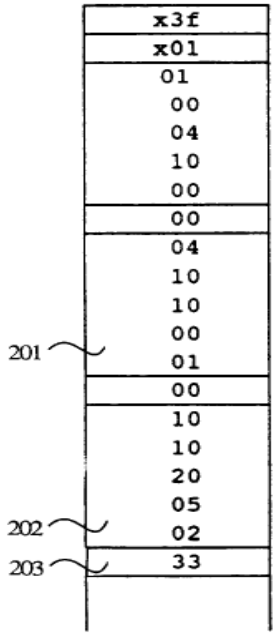
Figure 4 illustrates a "magnetic tape cassette with a memory device contained within it." Ex. 1005, 2:25–26. Within magnetic tape cassette 7, magnetic tape 10 is wound on two reels 8 and 9. *Id.* at 4:39–41. Memory device 11 can be connected with or coupled to a read and/or write facility provided in a magnetic tape device, that serves as an interface or a means of transmitting signals from the memory device to the magnetic tape, or vice versa. *Id.* at 4:41–49.

Figures 1–3 of Platte illustrate data stored by the memory device in different embodiments that correspond to different uses of the cassette. *Id.* at 2:13–24. Figures 1 and 2 of Platte are reproduced below.



Fixed data
Usage, here: blank cassette
Data records, still empty

Fig. 1



Fixed data
Usage, here: private, camcorder
Start min
sec
Finish min
sec
Additional data, here: free access allowed
Additional data, here: empty
Start min
sec
Finish min
sec
Additional data, here: overwrite blocked
Additional data, here: empty
Start min
sec
Finish min
sec
Additional data, here: playback blocked
Additional data, here: indentification for playback

Fig. 2

Figures 1 and 2 respectively illustrate the memory content for a blank tape and for a cassette used by a private user for the first time. Ex. 1005, 2:13–20. The first byte, such as hexadecimal representation x3f in Figures 1 and 2, contains "information about the cassette itself, the type of cassette, the length of the magnetic tape contained therein or the type of the magnetic tape," and "[t]his information does not change." *Id.* at 2:35–40. Information on the use of the cassette is stored in the second byte, and can be altered only once, when the cassette is first used. *Id.* at 2:41–44. The 00 value shown in Figure 1 identifies the cassette as blank. *Id.* at 2:45–50. The 01 value shown in Figure 2 identifies the first time usage as a camcorder. *Id.* at 2:51–54.

3. Application of Ikeda II and Platte to Claims 1 and 4

"tape-oriented recording and/or reproducing means"

Claim 1 recites "tape-oriented recording and/or reproducing means for recording and/or reproducing information to and/or from a magnetic tape housed in a tape cassette furnished as a recording medium, said tape cassette being loaded in the apparatus." Ex. 1001, 24:28–32. Claim 4 recites a similar limitation. *Id.* at 25:3–6. Petitioner contends these limitations are disclosed by Ikeda II's description of a tape drive for reading and writing information from or to a magnetic tape housed in a cassette "by the helical scanning method for the magnetic tape 3 of the loaded tape cassette 1," where "the tape cassette [is] equipped with a MIC," and "inside the tape cassette . . . the reel hubs 2A and 2B have been provided." Pet. 28–29 (quoting Ex. 1006 ¶¶ 11, 14).

"memory accessing means"

Claim 1 recites

> memory accessing means for accessing a memory which is incorporated in said tape cassette furnished as said recording medium and which holds management information for write and/or read operations to and/or from said magnetic tape, said memory accessing means writing and/or reading information to and/or from said memory following the accessing.

Ex. 1001, 24:33–39. Claim 4 recites a similar limitation. *Id.* at 25:7–13.

Petitioner contends these limitations are disclosed by Ikeda II's description of "[w]hen the tape cassette main body [is] loaded in the tape streamer drive, this MIC 4 will be connected so as to be able to input and output the data with the system controller 15 via the terminal pins . . . [i]n this way, the system controller 15 will be possible to read out management information which has been recorded in the MIC 4, or update the management information." Pet. 29 (quoting Ex. 1006 ¶ 24). Petitioner contends Ikeda II discloses that the management information includes "partition information (system log) [with] various information on the use history of the magnetic tape in the partition . . . for the purpose of managing the recording/reproducing operations of the tape streamer drive itself." *Id.* (quoting Ex. 1006 ¶ 70).

"information acquiring means"

Claim 1 recites

> information acquiring means for acquiring format state designation information from said memory by causing said memory accessing means to access said memory for information retrieval, said format state designation information designating an unformatted state when said magnetic tape has yet to be formatted, said format state designation information further

> designating a formatted state once said magnetic tape is formatted.

Ex. 1001, 24:40–47. Claim 4 recites a similar limitation. *Id.* at 25:14–21.

Petitioner contends the combination of Ikeda II and Platte meets these limitations. Pet. 30. Petitioner contends Ikeda II accesses management information stored in the memory via the terminal pins of the tape drive, and uses SCSI interface 20 to issue an instruction to system controller 15 to execute the data writing/read-out for the MIC. *Id.* (citing Ex. 1006 ¶¶ 13, 24, 26). According to Petitioner, Ikeda II acquires management information from memory that includes information on the use history of the magnetic tape, including partition information, drive utilization information, and an MIC logical format type. *Id.* at 26, 30 (citing Ex. 1006 ¶¶ 40–53, 70). Petitioner contends that the management information of Ikeda II does not disclose a flag to indicate whether the magnetic tape is blank. *Id.* at 30.

Petitioner contends Platte discloses information on the use of a cassette stored in the second byte of memory, and that this information can be altered just once when the cassette is first used, afterwards, this information cannot be altered. *Id.* at 30–31 (citing Ex. 1005, 2:41–45). Mr. Koski testifies that Platte discloses setting the second byte to 00 when the cassette is blank, and setting the second byte to 01 once when the cassette is first recorded. Ex. 1008 ¶¶ 143–144 (citing Ex. 1005, 2:41–49, 3:13–16), 165. Mr. Koski testifies that setting the value of the second byte to 00 designates an unformatted state, and setting the value of the second byte to 01 designates a formatted state. *Id.* ¶¶ 144, 166.

Petitioner contends that a person of ordinary skill in the art would have included the field indicating whether the tape is formatted as disclosed by Platte, in the MIC logical format type field of Ikeda II, for the benefit of

simplifying and speeding up the determination of whether the loaded tape is formatted, to block unlawful recording or reproduction operations on the magnetic tape. Pet. 27–28 (citing Ex. 1008 ¶¶ 173–175; Ex. 1005, 1:45–54; 4:1–10; Ex. 1006 ¶¶ 51–52). Petitioner also contends that combining the known technique of storing a dedicated format flag in the memory of a cassette as taught by Platte, and the known technique of operating a tape drive as taught by Ikeda II, does no more than yield the predictable result of providing tamper and corruption protection of the tape cassette by blocking/enabling certain operations. *Id.* at 28 (citing Ex. 1008 ¶ 176).

Patent Owner contends the second byte of Platte indicates whether a tape was used, but does not indicate whether the tape is formatted, and therefore does not disclose "format state designation information" as claimed. PO Resp. 49–50 (citing Ex. 2008, 134:12–25; Ex. 2018 ¶¶ 138–140). Mr. Koski testifies that the second byte of Platte indicates whether a tape is formatted. Ex. 1008 ¶¶ 143–144, 165–167. Mr. Koski testifies that the MIC Logical Format Type field in the MIC of Ikeda II "by its very name indicates that it includes format type information." Ex. 1023 ¶ 77 (citing Ex. 1006 ¶ 53); Ex. 1008 ¶ 161. Mr. Koski further testifies that including the second byte of Platte with the MIC Logical Format Type management information of Ikeda II provides the benefit of a dedicated format flag to simplify determining whether the tape is formatted, and provides the benefit of controlling recording and reproducing operations to protect the tape from tampering and unlawful use. Ex. 1008 ¶¶ 174–177.

We rely on Mr. Koski's testimony in determining Platte's dedicated format flag indicates whether a tape is formatted, and Ikeda II's Logical Format Type field indicates the format type. *Id.* ¶¶ 143–144, 161, 165–167;

Ex. 1023 ¶ 77. We agree with Petitioner and Mr. Koski that the combination of Platte's dedicated format flag and Ikeda II's MIC Logical Format Type teaches format state designation information that includes information indicating whether a tape is formatted, and information indicating the format type, within the meaning of claim 1. Pet. 27; Ex. 1006 ¶¶ 51–53; Ex. 1005, 2:41–45, 3:13–16; Ex. 1008 ¶¶ 142–144, 163–165. We rely on Mr. Koski's testimony and determine that a person of ordinary skill in the art would have added the dedicated format flag of Platte to the existing MIC logical format type stored in the MIC of Ikeda II for the benefit of providing a dedicated format flag in the MIC to simplify determining whether the tape is formatted. Pet. 27; Ex. 1008 ¶¶ 174–177; Ex. 1005, Figs. 1–3, 2:41–57, 2:65–67, 3:12–20.

Patent Owner contends that because Platte's second byte has nothing to do with formatting, Platte does not teach "format state designation information further designating a formatted state *once said magnetic tape is formatted*" as claimed. PO Resp. 55–56 (citing Ex. 2018 ¶¶ 140–141). In particular, Patent Owner contends that Platte does not teach storing the format state designation information in an area of memory that cannot be rewritten after the tape is formatted. *Id.* Platte teaches that information on whether the cassette is blank "can be altered just once when the cassette is first used, afterwards this information too cannot be altered." Ex. 1005, 2:41–48, 3:13–16; Ex. 1008 ¶¶ 165–166. We determine that Platte teaches storing format information in an area of memory that cannot be rewritten after the tape is formatted, and that the combination of Ikeda II and Platte teaches "format state designation information further designating a formatted state once said magnetic tape is formatted" as claimed. Ex. 1005,

2:41–45, 3:13–16; Ex. 1008 ¶¶ 165–166, 168; Ex. 1023 ¶¶ 76–81; Ex. 1022, 216:21–217:16.

Patent Owner contends that Ikeda II does not disclose the "information acquiring means" as claimed, because the system controller of Ikeda II is not a WORM-enabled controller. PO Resp. 53–54 (citing Ex. 2018 ¶¶ 321–322). According to Patent Owner, Ikeda II does not disclose controlling a drive operation based on a comparison of data obtained from the tape and the memory. *Id.*

Petitioner contends that the scope of claim 1 does not encompass WORM functionality. Reply 17. Petitioner further contends that even under Patent Owner's narrower construction of requiring WORM functionality, the combination of Ikeda II and Platte teaches this limitation. *Id.* at 17–18 (citing Ex. 1006 ¶¶ 24, 26; Ex. 1005, 3:22–25; Ex. 1022, 208:16–214:12; Ex. 1023 ¶¶ 82–84). Mr. Koski testifies that "Platte discloses the following functionality: Protection against unwanted overwriting or erasure of already existing recordings is achieved in that a recording device always performs a comparison between the current tape position and the entries in the memory." Ex. 1023 ¶ 82 (citing Ex. 1005, 3:22–25). Mr. Koski testifies that this disclosure of Platte teaches WORM functionality, and that a person of ordinary skill in the art would have incorporated Platte's teaching of WORM functionality into the tape drive apparatus of Ikeda II to accomplish the goal of preventing unwanted overwriting of data as taught by Platte. *Id.* ¶¶ 82–83 (citing Ex. 1005, 3:21–30; Ex. 1022, 208:16–214:12, 215:5–13). Dr. Bain provides testimony that is consistent with that of Mr. Koski. Ex. 1022, 208:16–214:12 (agreeing that a system which protects against unwanted overwriting or erasure of recorded data would be a WORM

system), 215:5–13. Although we do not construe the claims as requiring WORM functionality, we rely on the testimonies of Mr. Koski and Dr. Bain in determining that the combination of Ikeda II and Platte teaches the claimed "information acquiring means" even under Patent Owner's narrow construction requiring WORM functionality.

"operation controlling means"

Claim 1 recites

> operation controlling means which, based at least on specifics of the acquired format state designation information and on a result of a read operation on said magnetic tape by said tape-oriented recording and/or reproducing means, controls a write and/or a read operation on said recording medium.

Ex. 1001, 24:48–53. Claim 4 recites a similar limitation. *Id.* at 26:1–5.

Petitioner contends the combination of Ikeda II and Platte meets these limitations. Pet. 31. Petitioner contends Ikeda II discloses servo controller 16 connected with system controller 15 to execute processing of the entire system. *Id.* (citing Ex. 1006 ¶ 18). According to Petitioner, system controller 15 performs a read-out of system data in the MIC, and after this, magnetic tape 3 will be made to travel, and the read-out of the system area, which has been recorded on the magnetic tape 3, will be carried out for controlling read/write operations of the tape drive. *Id.* (citing Ex. 1006 ¶¶ 95–97). Petitioner contends that Ikeda II does not disclose using a dedicated field from memory to indicate whether the tape is formatted to control operations of the drive. *Id.* at 30.

Petitioner contends Platte discloses a dedicated field in memory to indicate whether the tape is formatted and to control operations of the drive. *Id.* at 31 (citing Ex. 1008 ¶ 173). According to Petitioner, Platte's control operations cause the content of the memory device to be continuously

recorded as a subcode along with the recording of the wanted signal on the magnetic tape. *Id.* at 23 (citing Ex. 1005, 4:24–32). Petitioner contends Platte discloses that blocking is rendered possible by comparing memory content with the subcode stored on the magnetic tape, and playback is then only executed if a certain part of the subcode coincides with a certain entry in the memory. *Id.* at 23–24 (citing Ex. 1005, 5:13–22).

Patent Owner contends that Platte does not teach using the "specifics of the acquired format state designation information to control a write and/or a read operation" as claimed. PO Resp. 50–52. According to Patent Owner, Petitioner proposes adding only the second byte of Platte to the system of Ikeda II, not the entirety of the subcode of Platte. *Id.* at 50. Patent Owner contends that Platte discloses that playback is only executed if a certain part of the subcode stored on the magnetic tape coincides with a certain entry in the memory, but Platte does not explain what the certain part of the subcode and the certain entry in the memory are. *Id.* at 51 (citing Ex. 1005, 5:13–18; Ex. 2018 ¶ 151). Patent Owner contends the certain entry could be, but is not necessarily, the second byte stored in the memory. *Id.* at 50–52 (citing Ex. 1005, Fig. 3, 3:54–60, 5:3–22; Ex. 2018 ¶¶ 151–153; Ex. 2008, 121:21–127:11). Patent Owner contends that using the second byte to control playback is not inherently performed by Platte. *Id.* (citing Ex. 2018 ¶¶ 151–153).

The relevant inquiry to determine obviousness, however, is whether the claimed subject matter would have been obvious to those of ordinary skill in the art in light of the combined teachings of those references. *In re Keller*, 642 F.2d 413, 425 (CCPA 1981). Platte teaches reliably blocking an undesired recording function, if the cassette already contains recordings not

to be overwritten or erased, through an entry in the memory. Ex. 1005, 1:45–54, 3:30–33, 4:24–32, 5:13–18. Platte teaches that unauthorized persons could alter the content of the memory positions characterizing authorization, and provides the remedy of comparing a certain entry in the memory with a certain part of the subcode on the tape to control recording and reproducing operations. Ex. 1005, 4:21–28, 1:45–57. Mr. Koski testifies that the certain entry can be the dedicated format flag taught by Platte (Ex. 2008, 122:7 –8, 122:15–18, 124:8–12), which indicates whether the tape is blank (Ex. 1008 ¶¶ 166–167; Ex. 1023 ¶ 80). We rely on Mr. Koski's testimony and determine that storing the dedicated format flag of Platte, which indicates whether the tape is blank or has data written on it (Ex. 1005, 3:13–16), as an entry in the MIC of Ikeda II, and comparing the dedicated format flag entry of the MIC with a corresponding part of the subcode stored on the tape as taught by Platte (*id.* at 4:24–30, 5:13–18), yields the predictable result of preventing unwanted overwriting of recorded data on the tape (*id.* at 1:45–54, 3:22–33), even when unauthorized persons alter the content of the MIC (*id.* at 4:21–32) as taught by Platte. *KSR Int'l Co. v. Teleflex Inc.*, 550 U.S. 398, 416 (2007).

Patent Owner contends that Ikeda II alone does not teach WORM functionality of the claimed "operation controlling means," and is not programmed to detect tampering by performing step S119 described in the '137 patent. PO Resp. 54–55. Petitioner contends that the scope of the "operation controlling means" is broader than a WORM-enabled controller, and does not require performing step S119 of the '137 patent. Reply 18. Petitioner further contends that, even under Patent Owner's narrow construction, the combination of Ikeda II and Platte teaches "operation

controlling means" that includes WORM functionality and detects tampering. *Id.* (citing Ex. 1023 ¶¶ 82–83). As we discussed in our analysis of the claimed "information acquiring means" above, we rely on Mr. Koski's testimony in determining that the combination of Ikeda II and Platte teaches WORM functionality and detecting tampering; therefore, the combination teaches the claimed "operation controlling means" even under Patent Owner's narrower construction requiring WORM functionality and performing tamper detection. Ex. 1023 ¶¶ 82–83 (citing Ex. 1005, 3:21–30; Ex. 1022, 208:16–214:12, 215:5–13).

Patent Owner contends that the Petition does not show that a person of ordinary skill in the art would have been motivated to modify Ikeda II using Platte in the manner set forth in the Petition. PO Resp. 56. Patent Owner contends that Platte says nothing about using the second byte to protect from tampering and unlawful use. *Id.* at 57–60 (citing Ex. 2018 ¶¶ 150–155). Patent Owner contends that Platte does not mention WORM functionality or the security issues it creates in securing user data from overwriting. *Id.* at 58–59 (citing Ex. 2018 ¶¶ 123–127, 164–165). Petitioner contends that the combination of Ikeda II and Platte teaches WORM functionality, and also teaches using the second byte of Platte to protect the system of Ikeda II from tampering. Reply 17–21.

We agree with Petitioner that the combination of Ikeda II and Platte teaches WORM functionality, as discussed in our analysis of the claimed "information acquiring means" above. *See* Reply 17–18 (citing Ex. 1006 ¶¶ 24, 26; Ex. 1005, 3:22–25; Ex. 1023 ¶¶ 82–83; Ex. 1022, 208:16–214:22). We agree with Petitioner, that the combination of Ikeda II and Platte teaches using the second byte to provide anti-tampering functionality,

as discussed in our analysis of the claimed "operation controlling means" above. *See* Reply 20 (citing Ex. 1008 ¶¶ 174–177; Ex. 2008, 132:20–133:22; Ex. 1005, 1:45–54, 3:22–25; Ex. 1023 ¶¶ 80–83).

Patent Owner contends the combination of Ikeda II and Platte does not teach the claimed "operation controlling means," because "[e]xactly how the system controller 15 would use Platte's 'second byte,' however, remains unclear." PO Resp. 54 (citing Ex. 2008, 131:5–133:22). Mr. Koski, when asked on cross-examination whether a person of ordinary skill would need to make any changes to the computer program in the processor in Ikeda II in order to execute steps S119 through S122 of Figure 15 of the '137 patent, testifies that

> the structure of the program would remain the same . . . . The flow chart would be the same . . . . Ikeda II requires the addition of the dedicated flag from Platte to provide that. And doing so is obvious given Ikeda II in light of Platte . . . the information from Platte is what makes that change possible. Or obvious.

Ex. 2008, 131:5–133:22. Mr. Koski testifies that it would have been within the ability of a person of ordinary skill in the art to modify the existing MIC Logical Format Type field of Ikeda II to include Platte's dedicated format flag to control recording and reproducing operations. Ex. 1008 ¶¶ 168, 172–176. We rely on Mr. Koski's testimony in determining that modifying Ikeda II to include Platte's dedicated format flag to control recording and reproducing operations was within the level of ordinary skill. *See In re Keller*, 642 F.2d at 425; *Leapfrog Enters., Inc. v. Fisher-Price, Inc.*, 485 F.3d 1157, 1162 (Fed. Cir. 2007) (citing *KSR*, 550 U.S. at 419).

Patent Owner contends that recording the contents of the memory as continuous subcode on the tape to provide anti-tampering functionality as taught by Platte would cause the system of Ikeda II to experience a

slowdown, which is contrary to Ikeda II's intended purpose of expediting the operational speed of the drive. PO Resp. 60–61 (citing Ex. 2018 ¶¶ 165, 167–174). Petitioner, relying on testimony of Dr. Bain, contends that if the actual load time of Ikeda II is taken into account, the load penalty associated with the proposed modification to Ikeda II in view of Platte would be orders of magnitude lower or there would be no load penalty at all. Reply 19–20 (citing Ex. 1022, 268:16–274:24 ("And, yes, there are scenarios where the factor is down to one."); Ex. 1023 ¶¶ 70–74). Mr. Koski testifies that there would be no load penalty associated with the modification of Ikeda II to Platte. Ex. 1023 ¶¶ 70–74. We rely on the testimonies of Dr. Bain and Mr. Koski in determining that there would be little to no load time penalty resulting from the modification of Ikeda II in view of the disclosure of Platte.

Patent Owner contends that the Petition does not allege that a person of ordinary skill in the art would have had a reasonable expectation of success in combining Ikeda II and Platte. PO Resp. 61–62. Petitioner contends that the Petition sets forth evidence and analysis showing that a person of ordinary skill in the art would have had a reasonable expectation of success. Reply 21 (citing Pet. 26–33). We agree with Petitioner in determining that the Petition and supporting testimony of Mr. Koski show that a person of ordinary skill in the art would have reasonably expected that combining the known techniques taught by Platte and Ikeda II would have successfully yielded the predictable result of providing tamper protection of a tape cassette by blocking or enabling certain operations. Pet. 26–33; Ex. 1008 ¶¶ 166–168, 174–176; Ex. 2008, 131:5–133:22; Ex. 1023 ¶¶ 77–83.

We determine that Petitioner shows, by a preponderance of the evidence, that claims 1 and 4 are unpatentable under 35 U.S.C. § 103(a) because the subject matter of the claims would have been obvious over the combination of Ikeda II and Platte to one of ordinary skill in the art at the time of the invention.

3. Dependent Claims 2 and 3

Claim 2 recites "said operation controlling means determines whether there exists a predetermined logical structure in said management information retrieved as a result of said read operation on said magnetic tape by said tape-oriented recording and/or reproducing means for write and/or read operations to and/or from said magnetic tape." Ex. 1001, 24:55–60. Petitioner contends Ikeda II discloses this limitation in describing a system area formed on the magnetic tape when the tape is not in a blank state. Pet. 32–33 (citing Ex. 1006 ¶¶ 5, 48, 97–98). According to Petitioner, judging whether the system area is detected from the magnetic tape as disclosed by Ikeda II indicates whether the physical tape characteristic ID exists. *Id.* at 33 (citing Ex. 1008 ¶ 180).

Patent Owner, relying on testimony of Dr. Bain, contends that detecting system area data does not teach determining that such data has a predetermined logical format structure. PO Resp. 62–63 (citing Ex. 2018 ¶¶ 156–157). Mr. Koski testifies that Ikeda II teaches judging whether the system area was detected on the tape, and if so, detecting the characteristic ID from the tape. Ex. 1008 ¶ 179 (citing Ex. 1006 ¶¶ 35, 48, 97). Mr. Koski testifies that if the system area is detected on the tape, then the tape is formatted and the characteristic ID will be obtained, but if the system area is not formatted, then the characteristic ID will not be obtained. *Id.* ¶ 180. Mr.

Koski's testimony is supported by Ikeda II's teaching that the system area stores management information including physical tape characteristics and history information. Ex. 1006 ¶¶ 35, 48, 97. We rely on Mr. Koski's testimony in determining that the combination of Ikeda II and Platte teaches this limitation.

Claim 3 recites "said operation controlling means determines whether a reproduced signal is obtained as a result of said read operation on said magnetic tape by said tape-oriented recording and/or reproducing means, said read operation retrieving data from predetermined area of said magnetic tape." Ex. 1001, 24:62–67. Petitioner contends Ikeda II discloses this limitation in describing detecting out the system area, which has been recorded on the magnetic tape, then judging whether a reproducing signal was obtained. Pet. 33 (citing Ex. 1006 ¶¶ 23, 97–98; Ex. 1008 ¶¶ 182–185).

Patent Owner contends that Ikeda II teaches judging whether the system area was detected on the tape only if the tape does not have a functional cartridge memory. PO Resp. 63 (citing Ex. 2018 ¶¶ 158–159). Mr. Koski testifies that Ikeda II teaches reading out data by reproducing heads as an RF signal to the host computer. Ex. 1008 ¶ 183 (citing Ex. 1006 ¶ 23). Mr. Koski testifies that when the tape is blank and formatting has not been performed, management information will not be recorded in the system area, so that if the system area is not detected, it assumes the tape is not formatted. *Id.* (citing Ex. 1006 ¶¶ 5, 98). Mr. Koski's testimony is consistent with Ikeda II, which teaches "when the magnetic tape is in a blank state wherein formatting has not been performed, the recording of the . . . management information will not be recorded too." Ex. 1006 ¶ 5. We rely on Mr. Koski's testimony in determining the combination of Ikeda II and

Platte teaches this limitation.

We determine that Petitioner shows, by a preponderance of the evidence, that claims 2 and 3 are unpatentable under 35 U.S.C. § 103(a) because the subject matter of the claims would have been obvious over the combination of Ikeda II and Platte to one of ordinary skill in the art at the time of the invention.

E. Obviousness in view of Ikeda II and ECMA Standard

1. ECMA Standard (Ex. 1003)

The ECMA Standard is titled "8 mm Wide Magnetic Tape Cartridge for Information Interchange – Helical Scan Recording- AIT-3 Format." Ex. 1003, Title. The ECMA Standard specifies the physical and magnetic characteristics of an 8 mm wide magnetic tape cartridge containing a memory chip to enable physical interchange of such cartridges between drives, and specifies the Advanced Intelligent Tape No. 3 (AIT-3 Format). Ex. 1003, 13.[6] The AIT remote Memory in Cartridge (AIT RMIC) transponder is built into the case, and contains a serial EEPROM. Ex. 1003, 89. The content of the AIT RMIC includes a number of distinct data sections, including a memory management information section. Ex. 1003, 90. A field of the memory management information, called AIT RMIC Logical Format Type, is set to 14 prior to first use and set to 15 by the writing device. Ex. 1003, 94.

2. Application of Ikeda II and ECMA Standard to Claims 1 and 4

Petitioner contends Ikeda II discloses "tape oriented and/or reproducing means" and "memory accessing means" as recited in claim 1,

[6] We cite to the page numbers added to Exhibit 1003 by Petitioner, rather than the Exhibit's original page numbers.

and similar limitations recited in claim 4, for the reasons discussed in Petitioner's analysis of ground 2. Pet. 36–37 (citing Ex. 1008 ¶¶ 188–190).

Claim 1 recites

> information acquiring means for acquiring format state designation information from said memory by causing said memory accessing means to access said memory for information retrieval, said format state designation information designating an unformatted state when said magnetic tape has yet to be formatted, said format state designation information further designating a formatted state once said magnetic tape is formatted.

Ex. 1001, 24:40–47. Claim 4 recites a similar limitation. *Id.* at 25:16–21. Petitioner contends the combination of Ikeda II and the ECMA standard meets these limitations. Pet. 33–37.

Petitioner contends Ikeda II discloses acquiring management information including the use history of the magnetic tape, but does not disclose providing a dedicated format flag/field to simplify and shorten the time it takes to verify that the tape is blank. *Id.* at 37 (citing Ex. 1008 ¶¶ 191–199). Petitioner contends the ECMA Standard discloses a dedicated format flag/field. *Id.* (citing Ex. 1003, 94). Petitioner contends a person of ordinary skill in the art would have included the dedicated flag/field indicating whether the media is formatted, such as the AIT RMIC Logical Format Type stored in the ECMA's memory in cartridge, in the tape of Ikeda II for the benefit of simplifying and speeding up determination and/or verification that the loaded tape is blank. *Id.* at 33–36 (citing Ex. 1008 ¶¶ 196–199, 204–205).

Patent Owner contends that the AIT RMIC Logical Format Type field of the ECMA Standard does not indicate format type. PO Resp. 65 (citing Ex. 2018 ¶ 183). Patent Owner contends that the similarity between the

names of the Logical Format Type fields in the ECMA Standard and the '137 patent does not demonstrate that the content of the two fields is the same. *Id.* at 65–66 (citing Ex. 2018 ¶ 184).

Petitioner, relying on testimony of Mr. Koski, contends that the Logical Format Type field of the ECMA Standard indicates format type. Reply 23 (citing Ex. 1023 ¶¶ 84–88). Mr. Koski testifies that

> ECMA-329 defines the fields for RMIC logical format type as (14) prior to first use and (15) after first use [and] sets forth that the parentheses around the values of (14) and (15) indicate that they are in hexadecimal format . . . and that these values, which correspond to 20 and 21, respectively, when converted from hexadecimal format, are the identical values that that the '137 patent uses to indicate virgin and formatted AIT-3 tapes . . . . It would have been abundantly clear to one of ordinary skill in the art during the relevant time period, that the RMIC logical format type field of ECMA-329 discloses the same field, with the same contents, as the MIC logical format type field of the '137 patent. In particular, the values for the RMIC Logical Format Type field described in ECMA-329 indicate that, in addition to being unformatted (14) or formatted (15), the format type of the cassette would be AIT-3 (because ECMA-329 is the standard defining AIT-3 cassettes).

Ex. 1023 ¶ 86 (citing Ex. 1003, 17, 94; Ex. 1022, 190:19–198:20). We rely on Mr. Koski's testimony in determining that the Logical Format Type field of the ECMA Standard teaches the claimed "format state designation information designating an unformatted state when said magnetic tape has yet to be formatted, said format state designation information further designating a formatted state once said magnetic tape is formatted." Ex. 1003, 94.

Claim 1 recites "operation controlling means which, based at least on specifics of the acquired format state designation information and on a result

of a read operation on said magnetic tape by said tape-oriented recording and/or reproducing means, controls a write and/or a read operation on said recording medium." Ex. 1001, 24:48–53. Claim 4 recites a similar limitation. *Id.* at 26:1–5. Petitioner contends the combination of Ikeda II and the ECMA Standard meets these limitations. Pet. 37–38.

Petitioner contends that Ikeda II specifies a system controller that controls the operations of the drive based on management information obtained from the MIC and a readout of the magnetic tape, but does not disclose a format flag for controlling the drive operations. *Id.* at 38 (citing Ex. 1008 ¶¶ 201–206). Petitioner contends the ECMA Standard provides a format flag stored in the management information of the MIC. *Id.* (citing Ex. 1008 ¶ 202). Petitioner contends that a person of ordinary skill in the art would have combined the dedicated format flag taught by the ECMA Standard with the MIC Logical Format Type field of Ikeda II for the reasons previously discussed, namely, simplifying and speeding up determination and/or verification that the loaded tape is blank, and tamper protection. *Id.* at 34–36, 38.

Patent Owner contends that Petitioner does not cite prior art to support the contention that a person of ordinary skill would have included the Logical Format Type field of the ECMA Standard in the tape of Ikeda II to either (a) simplify and speed up the determination and verification of whether the loaded tape is blank, or (b) provide tampering protection of the tape cassette. PO Resp. 66–67 (citing Ex. 2018 ¶¶ 206–220). Patent Owner also contends that adding the Logical Format Type from the ECMA Standard to Ikeda II does not reach the claimed function of comparing management information, and that Petitioner does not give a specific reason

for adding a comparison of management information to the combination. *Id.* at 67–68 (citing Ex. 2018 ¶¶ 207–210).

Petitioner relies on Ikeda II to teach "carrying out the recording/reproduction of the like will be determined" based on "the read-out of the system data" from the MIC and "the read-out of the system area which has been recorded on the magnetic tape." Pet. 26 (citing Ex. 1006 ¶¶ 95–97), 38; Ex. 1008 ¶¶ 192, 200–201. The combination asserted by Petitioner relies on Ikeda II to teach controlling drive operations (such as recording/reproduction) based on management information obtained from the MIC and the magnetic tape, and relies on the ECMA Standard to teach that a person of ordinary skill in the art would have recognized that management information includes the format state designation information taught by the ECMA Standard. Pet. 38 (citing Ex. 1008 ¶¶ 201–206).

Paragraph 96 of Ikeda II discloses

> if the MIC 4 was provided and there was no communication error, the read-out of the system data . . . will be carried out . . . . Furthermore, as the operations after this, the magnetic tape 3 will be made to travel, the read-out of the system area which has been recorded on the magnetic tape 3 will be carried out . . . based on the information or the like which was read out from the system area, the required operation mode for the purpose of carrying out the recording/reproduction of the like will be determined . . . .

Ex. 1006 ¶ 96. Mr. Koski testifies that Ikeda II obtains management information from the MIC and the tape to carry out read and write operations. Ex. 1008 ¶ 201. Mr. Koski testifies that a person of ordinary skill in the art would have included the dedicated format flag of ECMA Standard in the management information of the MIC of Ikeda II to ensure operations are performed timely and properly, yielding the predictable results of fast loading and tamper protection. *Id.* ¶¶ 202–205.

We rely on Mr. Koski's testimony in determining that Ikeda II teaches an operation controlling means that controls drive operations such as recording/reproduction based on management information obtained from the MIC and the magnetic tape, and that a person of ordinary skill in the art would have included the format state designation information taught by the ECMA Standard in the management information, for the benefits of simplifying and speeding up determination and verification that the loaded tape is in a blank state, and providing tamper protection. *Id.* ¶¶ 197–204; Ex. 1006, Summary, ¶¶ 5–6.

Patent Owner contends that Mr. Koski does not explain the programming required to add the Logical Format Type field to Ikeda II, and that adding the Logical Format Type field to the tape of Ikeda II would not speed up, but instead would slow down Ikeda II's system. PO Resp. 67–68 (citing Ex. 2018 ¶¶ 207–210). We disagree with Patent Owner's contention as discussed in our analysis of the combination of Ikeda II and Platte above.

We determine that Petitioner shows, by a preponderance of the evidence, that claims 1 and 4 are unpatentable under 35 U.S.C. § 103(a) because the subject matter of the claims would have been obvious over the combination of Ikeda II and ECMA Standard to one of ordinary skill in the art at the time of the invention.

2. Dependent Claims 2 and 3

Petitioner contends Ikeda II discloses the "operation controlling means" recited in claim 2 for the reasons given in Petitioner's analysis of Ikeda II and Platte. Pet. 38–39. Petitioner relies on testimony of Mr. Koski to support its contention that the combination of Ikeda II and the ECMA Standard renders claim 2 obvious. *Id.* at 38 (citing Ex. 1008 ¶¶ 208–211).

Petitioner contends Ikeda II discloses the "operating controlling means" recited in claim 3 for the reasons given in Petitioner's analysis of Ikeda II and Platte. *Id.* at 39. Petitioner contends the combination of Ikeda II and the ECMA Standard renders claim 3 obvious. *Id.* (citing Ex. 1008 ¶¶ 212–215).

Patent Owner does not contest Petitioner's contentions for claims 2 and 3. We agree with Petitioner that the limitations of claims 2 and 3 are taught by the combination of Ikeda II and ECMA Standard for the reasons given in the Petition. We determine that Petitioner shows, by a preponderance of the evidence, that claims 2 and 3 are unpatentable under 35 U.S.C. § 103(a) because the subject matter of the claims would have been obvious over the combination of Ikeda II and ECMA Standard to one of ordinary skill in the art at the time of the invention.

F. Obviousness in view of Takayama and ECMA Standard

1. Takayama (Ex. 1007)

Takayama discloses a tape drive device and a recording medium for maintenance of data recorded on magnetic tapes. Ex. 1007 ¶ 1. Figure 1 of Takayama is reproduced below.

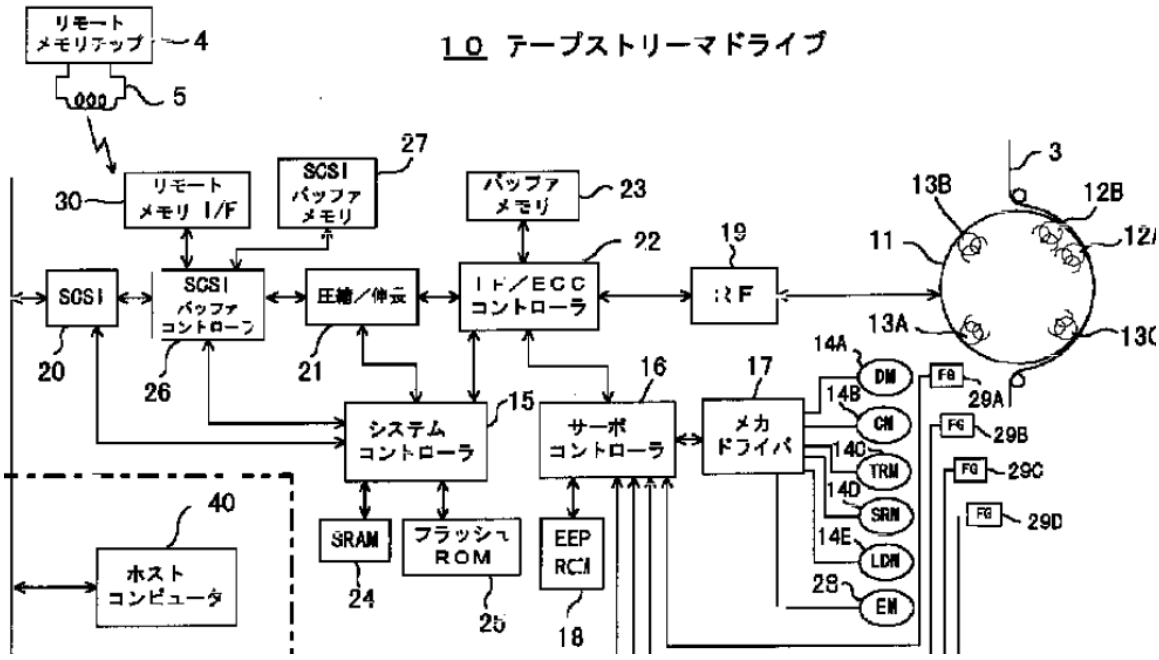


Figure 1 of Takayama[7] shows tape streamer drive 10, which supports the tape cassette provided with remote memory chip 4. Tape streamer drive 10 is configured to record/reproduce data on/from magnetic tape 3 of the tape cassette using the helical scanning method. Ex. 1007 ¶ 24. Rotary drum 11 is provided with two recording heads 12A and 12B and three reproduction heads 13A, 13B, and 13C. *Id.*

The tape drive device controls the operation to be rendered with respect to the tape cassette based on usage identification information, and can therefore prevent alteration of the recorded data by preventing the execution of processing such as deletion and overwrite. *Id.* ¶ 9. The tape drive device is configured to allow a specific operation for the reproduction

[7] The reference numerals shown in Figure 1 of Takayama and Figure 1 of the '137 patent identify similar components.

or recording from or on the magnetic tape only when information in both the magnetic tape and the memory is identical. *Id.* ¶¶ 10, 124–127.

2. Application of Takayama and ECMA Standard to Claims 1 and 4

"tape-oriented recording and/or reproducing means"

Claim 1 recites "tape-oriented recording and/or reproducing means for recording and/or reproducing information to and/or from a magnetic tape housed in a tape cassette furnished as a recording medium, said tape cassette being loaded in the apparatus." Ex. 1001, 24:28–32. Claim 4 recites a similar limitation. *Id.* at 25:3–6. Petitioner contends Takayama discloses these limitations in describing a tape streamer drive configured to record or reproduce data on or from a magnetic tape of a tape cassette through the helical scanning method. Pet. 41 (citing Ex. 1007 ¶¶ 24–25).

"memory accessing means"

Claim 1 recites

> memory accessing means for accessing a memory which is incorporated in said tape cassette furnished as said recording medium and which holds management information for write and/or read operations to and/or from said magnetic tape, said memory accessing means writing and/or reading information to and/or from said memory following the accessing.

Ex. 1001, 24:33–39. Claim 4 recites a similar limitation. *Id.* at 25:7–13.

Petitioner contends Takayama discloses these limitations in describing a tape cassette with memory that stores management information primarily used for managing recording/reproduction on/from the magnetic tape. Pet. 42 (citing Ex. 1007 ¶¶ 14, 16, Figs. 3–4).

"information acquiring means"

Claim 1 recites

> information acquiring means for acquiring format state designation information from said memory by causing said memory accessing means to access said memory for information retrieval, said format state designation information designating an unformatted state when said magnetic tape has yet to be formatted, said format state designation information further designating a formatted state once said magnetic tape is formatted.

Ex. 1001, 24:40–47. Claim 4 recites a similar limitation. *Id.* at 25:14–21. Petitioner contends Takayama discloses management information including the usage history of the magnetic tape, and a write once read many (WORM) flag for determining usage of the cassette. Pet. 43 (citing Ex. 1007 ¶¶ 15, 72, 93, 110–117). Petitioner contends the ECMA standard discloses a dedicated format flag stored in the memory of a tape cassette, as discussed in Petitioner's analysis of ground 3. *Id.* (citing Ex. 1008 ¶ 226).

Petitioner contends that using a dedicated format flag to store format information in the memory of a cassette as taught by the ECMA Standard, and comparing this information stored in the memory with information recorded on the magnetic tape as taught by Takayama, yields the benefit of protecting the tape cassette from data corruption and unwanted data erasure. *Id.* at 39–41 (citing Ex. 1008 ¶¶ 226–238).

Patent Owner contends that the AIT RMIC Logical Format Type field of the ECMA Standard does not indicate format type, and that the similarity between the names of the Logical Format Type fields in the ECMA Standard and the '137 patent does not demonstrate that the content of the two fields is the same. PO Resp. 69 (citing Ex. 2018 ¶ 184). We disagree for the reasons discussed in our analysis of the combination of Ikeda II and ECMA Standard

above. *See* Reply 24; Ex. 1023 ¶ 86 (citing Ex. 1003, 17, 94; Ex. 1022, 190:19–198:20).

Patent Owner contends that the combination of Takayama and the ECMA Standard does not teach "format state designation information further designating a formatted state *once said magnetic tape is formatted*" as claimed. PO Resp. 69–70 (emphasis added). In particular, Patent Owner contends that the Logical Format Type field of the ECMA Standard would not be stored in an area of memory that cannot be rewritten after the tape is formatted. *Id.*

Mr. Koski testifies that Takiyama teaches converting areas of memory into areas that cannot be rewritten, for the purpose of prohibiting the alteration or deletion of data recorded as WORM, in order to implement restrictions that allow only a pre-set manner of use. Ex. 1023 ¶ 91 (citing Ex. 1007 ¶ 109; Ex. 1022, 107:7–23, 104:25–109:22, 120:16–124:2). Mr. Koski testifies that the ECMA Standard teaches storing sensitive information in an area of memory that cannot be rewritten after the tape is formatted. Ex. 1023 ¶ 92 (citing Ex. 1003, 90, Table 6; Ex. 1022, 205:23–208:15). Mr. Koski testifies that a person of ordinary skill in the art would have included the format state designation information in the area of memory that cannot be rewritten, for the benefit of preventing the user from changing it, as taught by both Takayama and the ECMA Standard. Ex. 1023 ¶ 93.

We rely on Mr. Koski's testimony and determine that storing sensitive information, such as Logical Format Type data indicating the tape is formatted as taught by ECMA Standard, in an area of memory that cannot be rewritten as taught by both Takayama and ECMA Standard, yields the

predictable result of preventing users from changing the sensitive data as taught by both Takayama and ECMA Standard. *Id.* ¶¶ 89, 91–93; Ex. 1007 ¶¶ 104–109; Ex. 1003, 90, Table 6.

"operation controlling means"

Claim 1 recites "operation controlling means which, based at least on specifics of the acquired format state designation information and on a result of a read operation on said magnetic tape by said tape-oriented recording and/or reproducing means, controls a write and/or a read operation on said recording medium." Ex. 1001, 24:48–53. Claim 4 recites a similar limitation. *Id.* at 26:1–5.

Petitioner contends Takayama discloses controlling operations of the tape drive by comparing information recorded in the memory and information recorded on the magnetic tape, and restricting operations of the tape drive when the information does not match. Pet. 44 (citing Ex. 1007 ¶¶ 28, 113, 124–127). Petitioner contends the ECMA Standard discloses that the information for preventing or enabling operating states of the drive can be a dedicated format flag. *Id.* at 44–45 (citing Ex. 1008 ¶ 234). Petitioner contends that a person of ordinary skill in the art would have combined the teachings of Takayama and the ECMA standard for the benefit of protecting the tape cassette from data corruption as discussed above. *Id.* at 45 (citing Ex. 1008 ¶¶ 235–238).

Patent Owner contends that Takayama does not teach performing step S119 of the '137 patent, namely, stopping both read and write operations upon detection of an illegitimate cartridge, because Takayama teaches "additional recording of new data may be enabled even when the cartridge serial numbers do not match." PO Resp. 71 (quoting Ex. 1007

¶ 127). Paragraph 127 of Takayama, however, teaches "prevent[ing] data from being reproduced, for example, in such a[n] event the remote memory chip 4 in the tape cartridge 1 is replaced by another remote memory chip 4," and also teaches "preventing a recording operation when the cartridge serial numbers [read from the memory and from the tape] do not match." Thus, we determine that Takayama teaches stopping both read and write operations upon detection of an illegitimate cartridge. Ex. 1007 ¶¶ 126–127.

Patent Owner contends that one of ordinary skill in the art would not have modified Takayama to include the format state designation information of the ECMA standard, nor stored such information in non-rewriteable memory. PO Resp. 71 (citing Ex. 2018 ¶¶ 229–233, 241–244). Mr. Koski testifies that the memory of Takayama includes many of the fields taught by the ECMA Standard, including the MIC Logical Format Type field. Ex. 1023 ¶ 88 (citing Ex. 1007 ¶ 75, Fig. 14).

We rely on Mr. Koski's testimony and determine that a person of ordinary skill in the art would have understood that the memory of Takayama includes the MIC Logical Format Type field of the ECMA Standard. Ex. 1003, 94; Ex. 1007 ¶ 75, Fig. 14; Ex. 1023 ¶ 88. As discussed above, we also determine that storing sensitive information, including Logical Format Type data indicating the tape is formatted as taught by ECMA Standard, in an area of memory that cannot be rewritten as taught by both Takayama and ECMA Standard, yields the predictable result of preventing users from changing this data as taught by both Takayama and ECMA Standard. Ex. 1023 ¶¶ 89, 91–93; Ex. 1007 ¶¶ 104–109; Ex. 1003, 90, Table 6.

Patent Owner contends that Petitioner does not show why a person of ordinary skill in the art would have modified the serial number comparison of Takayama to compare format state designation information. PO Resp. 72 (citing Ex. 2018 ¶¶ 237–246).

Mr. Koski testifies that Takayama teaches controlling operations of the tape drive based on usage identification information, such as the serial number of the cassette, by detecting and comparing the usage identification information recorded on the tape and the memory. Ex. 1008 ¶¶ 232–233 (citing Ex. 1007 ¶¶ 9, 113, 117, 124–127). Mr. Koski testifies that usage identification information includes information on the usage history of recording data, such as information as to whether the tape has been formatted. *Id.* ¶¶ 225, 233. Mr. Koski testifies that a person of ordinary skill in the art, seeking to execute fast and reliable operations according to stored information such as serial number, usage information, WORM flag, and the like, would have provided the dedicated format flag of the ECMA Standard in the tape drive device of Takayama to prevent alteration of the intended usage of the tape, and to provide tampering protection of the tape. *Id.* ¶¶ 233–237. Mr. Koski testifies that using the Logical Format Type flag indicating whether the tape is formatted as taught by ECMA Standard in the tape of Takayama, also provides the benefit of simplifying and speeding up determination and verification that the loaded tape is in a blank state. *Id.* ¶ 227.

We rely on Mr. Koski's testimony in determining that a person of ordinary skill in the art would have used the Logical Format Type flag as taught by ECMA Standard in the tape of Takayama for the benefit of

simplifying and speeding up determination and verification that the loaded tape is blank.

Mr. Koski also testifies that using the dedicated formatting flag taught by ECMA Standard in Takayama's operation of a tape drive yields the predictable result of providing tampering protection of the tape cassette. *Id.* ¶ 237. Takayama teaches controlling recording and reproduction operations to be rendered with respect to the tape cassette based on identification information, "which consists of a serial number of the tape cassette, etc.," (Ex. 1007 ¶ 12), only when the identification information in both the tape and memory is identical. *Id.* ¶¶ 9–12; Ex. 1008 ¶¶ 232–233. We determine that paragraph 12 of Takayama teaches that the identification information is not limited to the serial number, but also includes other identification information. Mr. Koski testifies that other identification information includes information on the usage history of the tape, such as the Logical Format Type flag. Ex. 1008 ¶¶ 225, 233. We rely on Mr. Koski's testimony in determining that a person of ordinary skill in the art would have understood that Takayama's identification information includes the Logical Format Type flag, and that using the Logical Format Type flag as the identification information taught by Takayama yields the predictable result of restricting read and write operations when the identification information in the memory does not match the identification information on the tape as taught by Takayama.

We determine that Petitioner shows, by a preponderance of the evidence, that claims 1 and 4 are unpatentable under 35 U.S.C. § 103(a) because the subject matter of the claims would have been obvious over the

combination of Takayama and ECMA Standard to one of ordinary skill in the art at the time of the invention.

3. Dependent Claims 2 and 3

Petitioner contends the "operation control means" recited in claim 2 is disclosed by Takayama's description of a WORM flag that indicates the usage information of the tape cassette, and is included in a cartridge serial number stored in memory chip 4 and recorded on the magnetic tape together with the recording data. Pet. 45 (citing Ex. 1007 ¶¶ 45, 72, 115). According to Petitioner, Takayama compares the identification information between the pieces of information recorded on the tape and the memory, and executes a specific prescribed operation based on the result of the comparison. *Id.* at 46 (citing Ex. 1007 ¶ 126). Petitioner contends that the combination of Takayama and the ECMA standard renders claim 2 obvious because a person of ordinary skill in the art would have understood that the WORM flag is read from the magnetic tape in order to perform the comparison with information stored in memory. *Id.* (citing Ex. 1008 ¶¶ 242–245).

Petitioner contends the "operation control means" recited in claim 3 is disclosed by Takayama's description of recorded data on the magnetic tape read out by reproduction heads as a reproduction signal, and comparing identification information. *Id.* (citing Ex. 1007 ¶¶ 33, 126). Petitioner contends that the combination of Takayama and the ECMA Standard renders claim 3 obvious because a person of ordinary skill in the art would understand that the comparison involves reading information from an area of the magnetic tape, which would generate the reproduction signal, as indicated by Takayama. *Id.*; Ex. 1008 ¶¶ 246–250.

Patent Owner does not contest Petitioner's contentions for claims 2 and 3. We agree with Petitioner that the limitations of claims 2 and 3 are taught by the combination of Ikeda II and ECMA Standard for the reasons given in the Petition. We determine that Petitioner shows, by a preponderance of the evidence, that claims 2 and 3 are unpatentable under 35 U.S.C. § 103(a) because the subject matter of the claims would have been obvious over the combination of Takayama and ECMA Standard to one of ordinary skill in the art at the time of the invention.

G. Petitioner's Motion to Exclude

Petitioner moves to exclude Exhibits 2049 and 2050 because, according to Petitioner, the Exhibits are irrelevant, and their probative value is outweighed by a high risk of unfair prejudice. Paper 34, 4–8. Petitioner further moves to exclude Exhibit 2049 because it is not in the form of an affidavit, and is unreliable. Paper 34, 8–9.

Petitioner's contentions go to the weight of the Exhibits, and not to their admissibility. Federal Rule of Evidence 401 provides that evidence is relevant if "it has any tendency to make a fact more or less probable than it would be without the evidence" and "the fact is of consequence in determining the action." Both the Federal Circuit and the Board have recognized that there is a "low threshold for relevancy." *See, e.g., OddzOn Prods., Inc. v. Just Toys, Inc.*, 122 F.3d 1396, 1407 (Fed. Cir. 1997); *Laird Techs., Inc. v. GrafTech Int'l Holdings, Inc.*, Case IPR2014-00025, slip op. at 44 (PTAB Mar. 25, 2015) (Paper 45) ("*Laird Techs*."). The ITC testimony of Dr. Bain on the '137 patent, and the ITC Staff's Brief on the '137 patent, are both relevant to the patentability of the challenged claims.

With respect to the amount of weight to give the Exhibits, in light of the risk of unfair prejudice and unreliability, "[a] motion to exclude . . . is not an appropriate mechanism for challenging the sufficiency of evidence or the proper weight that should be afforded an argument." *Laird Techs*., Case IPR2014-00025, slip op. at 42 (Paper 45). Moreover, "[o]ur general approach for considering challenges to the admissibility of evidence was outlined in *Corning Inc. v. DSM IP Assets B.V.*, Case IPR2013-00053, slip op. at 19 (PTAB May 1, 2014) (Paper 66)," which stated that, "similar to a district court in a bench trial, the Board, sitting as a non-jury tribunal with administrative expertise, is well-positioned to determine and assign appropriate weight to evidence presented." *Id*. (citing *Donnelly Garment Co. v. NLRB*, 123 F.2d 215, 224 (8th Cir. 1941) ("One who is capable of ruling accurately upon the admissibility of evidence is equally capable of sifting it accurately after it has been received . . . .")). We determine we are well-positioned to determine probative value, unfair prejudice, and reliability of Exhibits 2049 and 2050, and to assign appropriate weights. Accordingly, we deny Petitioner's motion to exclude.

H. Patent Owner's Motion to Amend

Patent Owner filed a contingent motion to amend proposing to substitute claims 6–9 for claims 1–4. Paper 20, 1.

Before considering the patentability of any substitute claims, we first must determine whether the motion to amend meets the statutory and regulatory requirements set forth in 35 U.S.C. § 316(d) and 37 C.F.R. § 42.121. A motion to amend may "cancel any challenged patent claim" or, for each challenged claim, "propose a reasonable number of substitute claims." 35 U.S.C. § 316(d)(1). Our corresponding rule provides that "[t]he

presumption is that only one substitute claim would be needed to replace each challenged claim." 37 C.F.R. § 42.121(a)(3). Furthermore, a motion to amend "may not enlarge the scope of the claims of the patent or introduce new matter." 35 U.S.C. § 316(d)(3). Our corresponding rule provides that "[a] motion to amend may be denied where . . . [t]he amendment seeks to enlarge the scope of the claims of the patent or introduce new subject matter." 37 C.F.R. § 42.121(a)(2)(ii).

In the Federal Circuit's en banc decision in *Aqua Products, Inc. v. Matal*, 872 F.3d 1290 (Fed. Cir. 2017), the lead plurality opinion explains that "the patent owner must satisfy the Board that the statutory criteria in § 316(d)(1)(a)–(b) and § 316(d)(3) are met and that any reasonable procedural obligations imposed by the Director are satisfied." *Id.* at 1305–06; *see also id.* at 1341 ("There is no disagreement that the patent owner bears a burden of production in accordance [with] 35 U.S.C. § 316(d)." (Reyna, J., writing for a majority)).

On November 21, 2017, the Office provided guidance on motions to amend in view of *Aqua Products*. *See* "Guidance on Motions to Amend in view of *Aqua Products*" (Nov. 21, 2017) (https://www.uspto.gov/sites/default/files/documents/guidance_on_motions_to_amend_11_2017.pdf). In that Guidance, the Office explained:

> In light of the *Aqua Products* decision, the Board will not place the burden of persuasion on a patent owner with respect to the patentability of substitute claims presented in a motion to amend. . . . Thus, for example, if the entirety of the evidence of record before the Board is in equipoise as to the unpatentability of one or more substitute claims, the Board will grant the motion to amend with respect to such claims, and the Office will issue a certificate incorporating those claims into the patent at issue.

> Beyond that change, generally speaking, practice and procedure before the Board will not change. For example, a patent owner still must meet the requirements for a motion to amend under 37 C.F.R. § 42.121 or § 42.221, as applicable. That is, a motion to amend must set forth written description support and support for the benefit of a filing date in relation to each substitute claim, and respond to grounds of unpatentability involved in the trial.

Id. at 2.

Still further, on June 1, 2018 (after filing of Patent Owner's Motion to Amend), the Board designated as "Informative" an order in *Western Digital Corp. v. SPEX Techs., Inc.*, Case IPR2018-00082 (PTAB Apr. 25, 2018) (Paper 13, "*Western Digital Order*"), for its guidance on filing, and analysis, of motions to amend. In the *Western Digital Order*, the Board emphasizes that a motion to amend must "set forth written description support in the originally filed disclosure of the subject patent for each proposed substitute claim, and also set forth the support in an earlier-filed disclosure for each claim for which benefit of the filing date of the earlier filed disclosure is sought." *Western Digital Order* 7–8 (citing 37 C.F.R. § 42.121(b)(1)). The *Western Digital Order* further clarifies that "[t]he motion to amend itself, not the claim listing . . . , must set forth the written description support." *Id.* at 8 (emphasis added). Still further, the *Western Digital Order* explains that "the motion must set forth written description support for each proposed substitute claim as a whole, and not just the features added by the amendment. . . . even if the only amendment to the dependent claims is in the identification of the claim from which it depends." *Id.*

We, therefore, determine whether Patent Owner has met its burden of production of a threshold of evidence sufficient to establish that its Motion

to Amend complies with 35 U.S.C. § 316(d)(1)(a)–(b), § 316(d)(3), and 37 C.F.R. § 42.121.

Petitioner contends that Patent Owner's motion does not set forth written description support for each proposed substitute claim as a whole, and not just the features added by amendment. Pet. Opp. 5 (citing *Western Digital Order* 7–8). Patent Owner's motion states that Dr. Bain identifies support for each proposed substitute claim as a whole, then provides a claim chart indicating support for features added by amendment. PO Mot. 2–4. Petitioner contends that storing the format state designation information "in an area of memory that cannot be rewritten," as recited in substitute claims 6 and 9, is not supported by the specification of the '137 patent. Pet. Opp. 6 (citing Ex. 1023 ¶¶ 121–124, 203–207). Patent Owner contends that the proper scope of this term means overwriting is prevented "during normal operations." PO Reply 3–4 (quoting Ex. 1001, 16:25–27, 19:37–39); PO Mot. 5–6 (citing Ex. 2018 ¶¶ 287–290).

"Giving claims their broadest reasonable construction 'serves the public interest by reducing the possibility that claims, finally allowed, will be given broader scope than is justified.'" *In re Am. Acad. of Sci. Tech. Ctr.*, 367 F.3d 1359, 1364 (Fed. Cir. 2004) (quoting *In re Yamamoto*, 740 F.2d 1569, 1571 (Fed. Cir. 1984)). "An essential purpose of [the administrative process] is to fashion claims that are precise, clear, correct, and unambiguous. Only in this way can uncertainties of claim scope be removed, as much as possible, during the administrative process." *In re Zletz*, 893 F.2d 319, 322 (Fed. Cir. 1989). Construing claims broadly "is not unfair to the applicant . . . because the applicant has the opportunity to amend the claims to obtain more precise claim coverage." *Am. Acad.*, 367

F.3d at 1364. In the Motion to Amend, Patent Owner had the opportunity to amend substitute claim 6 to recite "during normal operations," but chose not to do so. Given that substitute claim 6 does not recite "during normal operations," under the broadest reasonable construction, we do not read this limitation into substitute claim 6.

Patent Owner, relying on cross-examination testimony of Mr. Koski, contends that storing the format state designation information "in an area of memory that cannot be rewritten" is supported by the '137 patent's description of ROM. PO Reply 4 (citing Ex. 2008, 58:2–12; Ex. 2047 8:11–9:16). The '137 patent describes "the drive initialize part is established as a ROM area once the magnetic tape is formatted as described above. If, however, the magnetic tape is reformatted after it was formatted once, then the drive initialize part is updated correspondingly." Ex. 1001, 16:25–29. Mr. Koski, when discussing ROM described in column 16 of the '137 patent, testifies that "a person skilled in the art would have trouble understanding that, because a ROM is not writable . . . . a person who is skilled in the art might apply some invention here and understand that maybe this is a protected area of a writable memory." Ex. 2008, 59:12–22; Ex. 1023 ¶ 205. Mr. Koski also testifies that "ROM is a memory that can never be rewritten after its manufacture." Ex. 1023 ¶ 69.

Given that the '137 patent describes updating data stored in memory that Patent Owner alleges is ROM, and that Mr. Koski testifies that ROM can never be rewritten after manufacture, we rely on Mr. Koski's testimony in determining that the '137 patent does not provide written description support for storing the format state designation information "in an area of memory that cannot be rewritten." We agree with Petitioner, and find Patent

Owner's motion does not set forth written description support in the originally filed disclosure of the subject patent for each proposed substitute claim as required by 35 U.S.C. § 316 and 37 C.F.R. § 42.121. We determine Patent Owner has failed to meet its burden of production to identify written description support for each substitute claim and we deny the Motion to Amend for at least this reason.

We also determine that the proposed substitute claims would not overcome the prior art challenges. To the extent the parties repeat many of the arguments presented in the Petition and the Patent Owner's Response, we adopt the findings of fact from our analysis above of Ikeda II, Platte, Takayama, and ECMA Standard, and incorporate our earlier discussion addressing those arguments. We remain persuaded by Petitioner's arguments and find Patent Owner's arguments unpersuasive. We discuss the features added by amendment to complete the record.

Petitioner contends substitute claims 6–9 are unpatentable over the combination of Takayama and ECMA Standard. Pet. Opp. 8. Substitute claims 6 and 9 recite "a magnetic tape housed in a Write Once Read Many (WORM) tape cassette furnished as a recording medium." PO Mot. 25, 27. In our analysis of the combination of Takayama and ECMA Standard discussed above, we determined the combination of Takayama and ECMA Standard teaches a WORM tape cassette furnished as a recording medium.

Substitute claims 6 and 9 recite "format state designation information further designating a formatted state and a format type, stored in an area of memory that cannot be rewritten." PO Mot. 25, 27. In our analysis of the combination of Takayama and ECMA Standard, we determined the Logical Format Type field taught by Takayama and ECMA Standard teaches format

state designation information further designating a formatted state and a format type. We also determined that the combination of Takayama and ECMA Standard teaches storing such information in an area of memory that cannot be rewritten after the tape is formatted, as discussed above. We also adopt the reasons to combine the teachings of Takayama and ECMA Standard given in our analysis of the combination of Takayama and ECMA Standard above.

Petitioner proposes several other grounds to show the unpatentability of the proposed substitute claims. Pet. Opp. 17–21. We highlight that with the proposed combination of Takayama, Platte, and Ishihara (Ex. 2017), Platte also teaches the WORM feature and storing format information in an area of memory that cannot be rewritten after the tape is formatted, as discussed above in our analysis of the combination of Ikeda II and Platte.

We rely on Mr. Koski's testimony in determining that the proposed substitute claims are unpatentable over the combination of Takayama and ECMA Standard; unpatentable over the combination of Takayama, ECMA Standard, and Ishihara; unpatentable over the combination of Takayama, Platte, and Ishihara; unpatentable over the combination of Ikeda II, Platte, Takayama, and the knowledge of a person of ordinary skill in the art; and unpatentable over the combination of Ikeda II, ECMA Standard, and Takayama. Pet. Opp. 7–21; Ex. 1023 ¶¶ 137–201.

Given that the substitute claims do not have written description support in the specification of the '137 patent and are not patentable over the prior art, we deny Patent Owner's Motion to Amend.

H. Motion to Seal

Patent Owner requests that we seal Exhibits 2018, 2026, 2028, 2030, 2035, and 2046 due to the inclusion of business information that Patent Owner regards as confidential. Paper 21. There is a strong public policy in favor of making information filed in an *inter partes* review open to the public, especially because the proceeding determines the patentability of claims in an issued patent and, therefore, affects the rights of the public. *See Garmin Int'l, Inc. v. Cuozzo Speed Techs., LLC*, Case IPR2012-00001 (PTAB Mar. 14, 2013) (Paper 34). Under 35 U.S.C. § 316(a)(1) and 37 C.F.R. § 42.14, the default rule is that all papers filed in an *inter partes* review are open and available for access by the public; a party, however, may file a concurrent motion to seal and the information at issue is sealed pending the outcome of the motion. It is, however, only "confidential information" that is protected from disclosure. 35 U.S.C. § 316(a)(7); *see* Office Patent Trial Practice Guide, 77 Fed. Reg. 48,756, 48,760 (Aug. 14, 2012). The standard for granting a motion to seal is "for good cause." 37 C.F.R. § 42.54(a). The party moving to seal bears the burden of proof in showing entitlement to the requested relief, and must explain why the information sought to be sealed constitutes confidential information. 37 C.F.R. § 42.20(c).

In reviewing the Exhibits, we conclude that they may contain confidential information. Accordingly, we are persuaded that good cause exists to have the redacted portions remain under seal, and the Motion to Seal is granted. Patent Owner's Motion to Seal includes an attached Protective Order (App. A to the Motion to Seal), and indicates that the parties agree to entry of the Order, which we enter.

The Office Patent Trial Practice Guide provides:

> *Expungement of Confidential Information:* Confidential information that is subject to a protective order ordinarily would become public 45 days after denial of a petition to institute a trial or 45 days after final judgment in a trial. There is an expectation that information will be made public where the existence of the information is referred to in a decision to grant or deny a request to institute a review or is identified in a final written decision following a trial. A party seeking to maintain the confidentiality of information, however, may file a motion to expunge the information from the record prior to the information becoming public. § 42.56. The rule balances the needs of the parties to submit confidential information with the public interest in maintaining a complete and understandable file history for public notice purposes. The rule encourages parties to redact sensitive information, where possible, rather than seeking to seal entire documents.

77 Fed. Reg. at 48761.

Consequently, 45 days from entry of this Decision, all information subject to a protective order will be made public by default. In the interim, Patent Owner may file a motion to expunge any such information that is not relied upon in this Decision. *See* 37 C.F.R. § 42.56.

III. CONCLUSION

We determine that the Petition and supporting evidence establishes, by a preponderance of the evidence, that claims 1–4 of the '137 patent are unpatentable. We determine that proposed substitute claims 6–9 are unpatentable and deny Patent Owner's Motion to Amend. We grant the Motion to Seal and enter the attached Protective Order. We deny Petitioner's Motion to Exclude Exhibits 2049 and 2050.

IV. ORDER

Accordingly, it is

ORDERED that claims 1–4 of U.S. Patent No. 7,016,137 B2 are unpatentable;

FURTHER ORDERED that Petitioner's Motion to Exclude Exhibits 2049 and 2050 is denied;

FURTHER ORDERED that Patent Owner's Contingent Motion to Amend is denied;

FURTHER ORDERED that Patent Owner's Motion to Seal is granted, and the attached Protective Order is entered; 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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