UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

COMCAST CABLE COMMUNICATIONS, LLC,
Petitioner

v.

ROVI GUIDES, INC.,
Patent Owner

Case IPR2017-00742
Patent 8,621,512

PATENT OWNER'S NOTICE OF APPEAL

Pursuant to 35 U.S.C. §§ 141, 142, and 319, and 37 C.F.R. §§ 90.2-90.3, notice is hereby given that Patent Owner Rovi Guides, Inc. appeals to the United States Court of Appeals for the Federal Circuit from the Final Written Decision of the Patent Trial and Appeal Board ("Board") entered August 7, 2018 (Paper 32) in IPR2017-00742, and from all underlying orders, decisions, rulings, and opinions. A copy of the Final Written Decision is attached.

In accordance with 37 C.F.R. § 90.2(a)(3)(ii), Patent Owner further indicates that the issues on appeal include, but are not limited to: (1) the Board's determination that claims 1-24 are unpatentable under 35 U.S.C. § 103(a) over Sano, Marsh, and LaJoie; (2) the Board's claim construction analysis and determinations; (3) the Board's decision denying Patent Owner's motion to exclude; and (4) the Board's authority, and all other issues decided adversely to Patent Owner in any order, decision, ruling or opinion underlying or supporting the Final Written Decision.

Pursuant to 35 U.S.C. § 142 and 37 C.F.R. § 90.2(a), this Notice is being filed with the Director of the United States Patent and Trademark Office, and a copy of this Notice is being concurrently filed with the Patent Trial and Appeal Board. In addition, a copy of this Notice and the required docketing fees are being filed with the Clerk's Office for the United States Court of Appeals for the Federal

Circuit via CM/ECF.

Dated: October 5, 2018

Respectfully submitted,

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CERTIFICATE OF FILING

It is certified that, in addition to being filed electronically through the Patent Trial and Appeal Board's E2E System, a true and correct copy of the foregoing PATENT OWNER'S NOTICE OF APPEAL has been filed by hand on October 5, 2018, with the Director of the United States Patent and Trademark Office, at the following address:

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

Dated: October 5, 2018

Respectfully submitted,

By: */Mark Rowland/*
Mark D. Rowland

CERTIFICATE OF FILING

It is certified that a copy of the foregoing PATENT OWNER'S NOTICE OF APPEAL was filed electronically through the United States Court of Appeals for the Federal Circuit's CM/ECF system October 5, 2018 and one paper copy delivered by hand on October 5, 2018, with the Clerk of the Court of the Federal Circuit, at the following address:

Clerk of the Court
717 Madison Place, N.W.
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Dated: October 5, 2018

Respectfully submitted,

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CERTIFICATE OF SERVICE

The undersigned hereby certifies that this PATENT OWNER'S NOTICE OF APPEAL was served by filing through PTAB E2E, as well as providing a courtesy copy via e-mail to the following attorneys of record for Petitioner listed below:

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UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

COMCAST CABLE COMMUNICATIONS, LLC,
Petitioner,

v.

ROVI GUIDES, INC.,
Patent Owner.

Case IPR2017-00742
Patent 8,621,512 B2

Before JENNIFER S. BISK, BARBARA A. BENOIT, and TERRENCE W. McMILLIN, *Administrative Patent Judges*.

McMILLIN, *Administrative Patent Judge*.

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

I. INTRODUCTION

A. Background

Comcast Cable Communications, LLC ("Petitioner"), filed a Petition to institute *inter partes* review of claims 1–24 ("challenged claims") of U.S. Patent No. 8,621,512 B2 (Ex. 1001, "the '512 patent") pursuant to 35 U.S.C. §§ 311–319. Paper 2 ("Pet."). Rovi Guides, Inc. ("Patent Owner"), filed a Preliminary Response. Paper 7 ("Prelim. Resp."). We instituted this review as to all challenged claims. Paper 8 ("Inst. Dec.").

Subsequent to institution, Patent Owner filed a Patent Owner Response. Paper 14 ("Resp."). Petitioner filed a Reply. Paper 19 ("Reply"). An oral hearing was held on May 9, 2018. Paper 31 ("Tr.").

This Final Written Decision is entered pursuant to 35 U.S.C. § 318(a). For the reasons that follow, Petitioner has demonstrated by a preponderance of the evidence that claims 1–24 of the '512 patent are unpatentable.

B. Additional Proceedings

The parties inform us that the '512 patent is the subject of the following lawsuits: *Rovi Guides, Inc. v. Comcast Corporation*, No. 1:16-cv-9826 (S.D.N.Y.) and *Comcast Corporation v. Rovi Corporation*, No. 1:16-cv-3852 (S.D.N.Y.). Pet. 1–2; Paper 6, 2 (Patent Owner's Submission of Updated Mandatory Notice Information). The '512 patent has been asserted in *In the Matter of Certain Digital Video Receivers and Hardware and Software Components Thereof*, Investigation No. 337-TA-1001 (U.S. International Trade Commission).[1] Pet. 2; Paper 6, 2. The '512 patent is

[1] The International Trade Commission (ITC) determined that claims 1, 10, 13, and 22 of the '512 patent were obvious. Ex. 1013, 2, 29–30. The ITC's

also the subject of IPR2017-00744, which Final Decision we issue concurrently.

C. The '512 Patent

The '512 patent is titled, "Interactive Television Program Guide with Simultaneous Watch and Record Capabilities." Ex. 1001, (54). The Abstract says: "[a]n interactive program guide ["IPG"] system is provided in which a user may use the program guide to watch one program while simultaneously recording another program without interrupting the recording or viewing process." *Id*. at (57). Figure 2(b) is reproduced below:

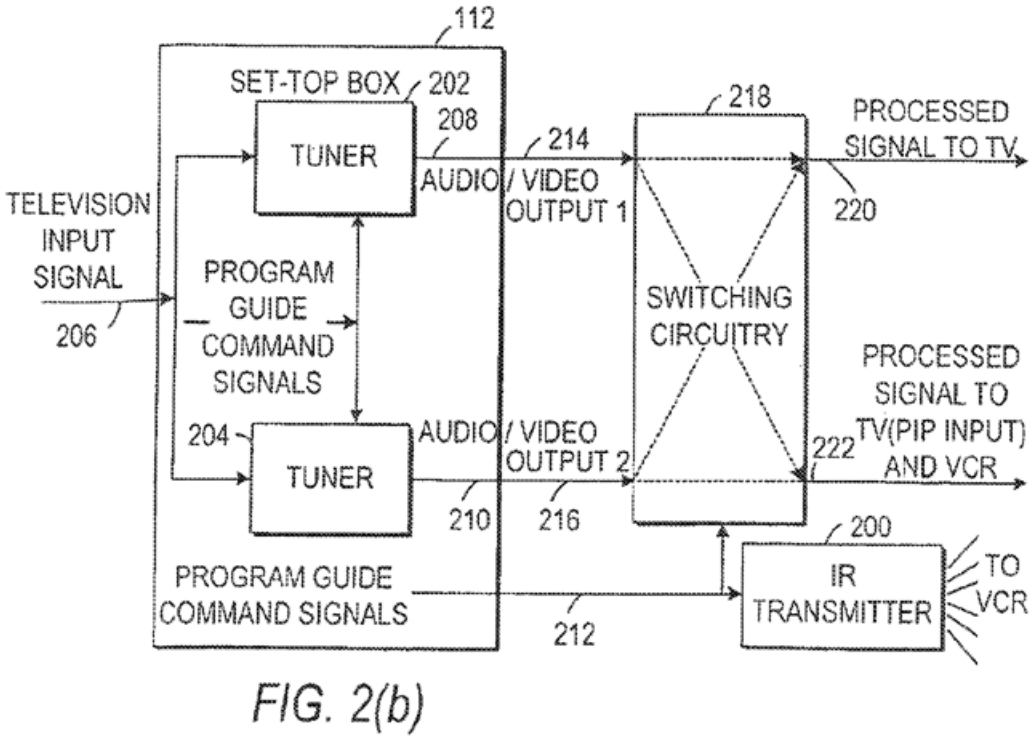


FIG. 2(b)

Figure 2(b) depicts a two tuner set-top box that provides one video output to the TV and the other video output to picture-in-picture ("PIP")[2] input or a

decision has been appealed. *See* Tr. 4:17–19.

[2] Ex. 1001, 2:3.

VCR. *Id.* at 7:54–8:16. Figure 4(b), reproduced below, "shows an illustrative interactive television program guide viewer option for secondary function use (PIP cancellation) screen 410 which acts to alert the viewer to a conflict in tuner allocation and usage." *Id.* at 10:25–28.

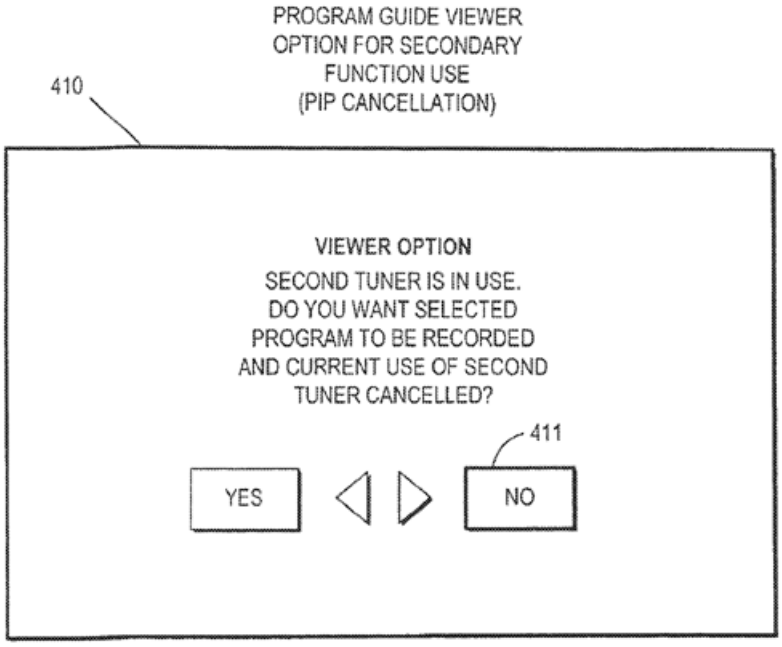


FIG. 4(b)

Figure 4(b) depicts a "viewer option selection screen." *Id.* at 2:60–63. The detailed description of Figure 4(b) states:

> If the user still desires to have the program recorded, the user will select "Yes." The interactive television program guide will then redirect the use of the second tuner and initiate the record sequence. If the user desires to continue using the secondary function, the user will select "No." The interactive television program guide will then cancel the record request and allow the user to continue using the second tuner for any of the available secondary functions.

Id. at 10:37–45.

As noted above, Petitioner challenges claims 1–24 (all issued claims)

of the ’512 patent. There are two independent claims (1 and 13). Claim 1 is directed to a method, and claim 13 is directed to a system. Except for the introductory phrases referring to a method or system, the two sets of dependent claims (2–12 and 14–24) are nearly identical.[3]

Claim 1 recites:

> 1. A method for resolving a conflict when multiple operations are performed using multiple tuners controlled by an interactive television guide, the method comprising:
>
> receiving a request to perform a tuning operation;
>
> determining that neither a first tuner nor a second tuner are available to perform the requested tuning operation, wherein the first tuner and the second tuner are both capable of performing the tuner operation; and
>
> in response to the determination, displaying an alert that provides a user with an opportunity to direct the interactive television program guide to cancel a function of the second tuner to permit the second tuner to perform the requested tuner operation.

Claim 13 recites:

> 13. A system for resolving a conflict when multiple operations are performed using multiple tuners controlled by an interactive television program guide, the system comprising:
>
> a first tuner;

[3] The parties treat the method and systems claims as essentially equivalent. However, we note the patentability of an apparatus claim “depends on the claimed structure, not on the use or purpose of that structure.” *Catalina Marketing Int’l Inc. v. Coolsavings.com, Inc.*, 289 F.3d 801, 809 (Fed. Cir. 2002).

a second tuner; and

an interactive television program guide implemented on the system, wherein the interactive program guide is operative to:

receive a request to perform a tuning operation;

determine that neither the first tuner nor the second tuner is available to perform the requested tuner operation, wherein the first tuner and the second tuner are both capable of performing the tuning operation; and

in response to the determination, display an alert that provides a user with an opportunity to direct the interactive television program guide to cancel a function of the second tuner to permit the second tuner to perform the requested tuning operation.

D. The Asserted Grounds of Unpatentability

We instituted *inter partes* review on all the asserted grounds, as follows:

References	Basis	Claims Challenged
Sano[4] and Marsh[5]	§ 103	1–4, 8, 12–16, 20, and 24
Sano, Marsh, and LaJoie[6]	§ 103	5–7, 9–11, 17–19, and 21–23

Inst. Dec. 28.

[4] Certified translation of PCT Publication No. WO 97/46013 A1, published Dec. 4, 1997 (Ex. 1006). A copy of the original is attached to the certified translation. Ex. 1006, 22–61.
[5] US Patent No. 6,208,799 B1, filed Apr. 29, 1997 (Ex. 1007).
[6] US Patent No. 5,850,218, filed Feb. 19, 1997 (Ex. 1008).

Petitioner asserts that Sano is prior art under pre-AIA 35 U.S.C. § 102(a) and (b) and Marsh and LaJoie are prior art under pre-AIA 35 U.S.C. § 102(e). Pet. 22, 24, 27. The '512 patent claims priority to the filing date of U.S. Provisional Application No. 60/089,487, filed June 16, 1998 ("the '487 provisional"). Ex. 1001, (60), 1:8–18. Petitioner argues that, whether or not the '512 patent is entitled to the filing date of the '487 provisional, all the cited references still qualify as prior art. Pet. 17 ("Even if Ellis [the '512 patent] were entitled to an earlier priority date, such as that of the '487 Provisional, every reference relied on herein would remain prior art under 35 U.S.C. §§102 (a), (b) and/or (e)."). Patent Owner does not dispute the prior art status of any of the cited art.[7] *See* Resp. 4 n.2 ("[T]he priority date does not affect any asserted reference").

The earliest priority date claimed for the '512 patent is June 16, 1998. Ex. 1001, (60), 1:8–18. Sano was published on December 4, 1997. Ex. 1006, (43). Marsh was filed on April 29, 1997. Ex. 1007, (22). LaJoie was filed on February 19, 1997. Ex. 1008, (22). We find the cited references qualify as prior art under 35 U.S.C. § 102.

[7] Petitioner states the '487 provisional contained "a scant two-page specification and no drawings" and asserts that it "did not include sufficient disclosure to support and enable the claims" of the '512 patent and the '512 patent should only be entitled to a priority date of June 11, 1999. Pet. 12–13. Patent Owner states "[t]he disclosures of U.S. Provisional Application No. 60/089,487 (Ex. 1002) fully support that the inventors had possession of the '512 claimed inventions by June 16, 1998, the filing date of the provisional application." Resp. 4 n. 2.

II. ANALYSIS

A. Principles of Law

A patent claim is unpatentable under 35 U.S.C. § 103(a) if the differences between the claimed subject matter and the prior art are such that the subject matter, as a whole, would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. *KSR Int'l Co. v. Teleflex Inc*., 550 U.S. 398, 406 (2007). The question of obviousness is resolved on the basis of underlying factual determinations including: (1) the scope and content of the prior art; (2) any differences between the claimed subject matter and the prior art; (3) the level of ordinary skill in the art; and (4) objective evidence of nonobviousness.[8] *Graham v. John Deere Co.*, 383 U.S. 1, 17–18 (1966).

B. Claim Construction

The parties agree that the claims of the '512 patent should be given the "broadest reasonable construction in light of the specification of the patent in which it appears." Pet. 5; Resp. 10–11. *See also Cuozzo Speed Techs., LLC v. Lee*, 136 S. Ct. 2131, 2144–2145 (2016); 37 C.F.R. §42.100(b). "Under a broadest reasonable interpretation, words of the claim must be given their plain meaning, unless such meaning is inconsistent with the specification and prosecution history." *Trivascular, Inc. v. Samuels*, 812 F.3d 1056, 1062 (Fed. Cir. 2016). Only those terms which are in controversy need be construed, and only to the extent necessary to resolve the controversy. *See Nidec Motor Corp. v. Zhongshan Broad Ocean Motor*

[8] Neither party presents any objective evidence of nonobviousness (secondary considerations) for us to consider.

Co., 868 F.3d 1013, 1017 (Fed. Cir. 2017) (citing *Vivid Techs., Inc. v. Am. Sci. & Eng'g, Inc.*, 200 F.3d 795, 803 (Fed. Cir. 1999)).

Petitioner contends that each claim limitation in the '512 patent should be given its plain and ordinary meaning with the exception of "secondary tuner function," Petitioner's position on which is described below, and that the preambles of independent claims 1 and 13 are not limiting. Pet. 5–6. Patent Owner contends: (1) construction of "secondary tuner function" is unnecessary (*id*. at 21–22); (2) determination of whether the preambles of independent claims 1 and 13 are limiting is unnecessary (*id*. at 22); (3) "determin[ing/e] that neither a/the first tuner nor a/the second tuner are available to perform the requested tuning operation" ("the 'determining' limitation") as recited in independent claims 1 and 13 "should be given its plain and ordinary meaning, in accordance with which the step of 'determining . . .' happens at the time of the requested tuning operation (i.e., at the time when a tuner is needed to perform the operation)" (Resp. 11); and (4) "cancel a function" as recited in independent claims 1 and 13 should be construed to mean "stop a function utilizing a signal tuned to by a tuner" (*id*. at 16). The dispute between the parties in this case primarily relates to the construction of the "determining" limitation and "cancel a function" and whether the cited art teaches those limitations.

"*secondary tuner function*"

With regard to "secondary tuner function" as recited in dependent claims 4–7 and 16–19, Petitioner argues:

> "Secondary tuner function" should be construed to include a process ***other than*** television program viewing or recording that requires allocation of the first or second tuner to perform, such as collecting interactive program guide data, enabling internet

> browsing, playing a music channel, or providing a picture-in-picture signal. Ex.-1001, Fig. 3(c); Ex.-1009, ¶99.

Pet. 5–6 (emphasis added). Petitioner provides no persuasive reasoning or argument in support of this construction. *Id*. Patent Owner contends there is no dispute relating to this term and that construction is unnecessary. Resp. 21–22. In its assertions of obviousness, Petitioner relies on LaJoie's playing a music channel as teaching a "secondary tuner function." *See*, e.g., Pet. 48–49. And Patent Owner does not disagree with this assertion stating, "there is no dispute that playing a music channel is a "secondary tuner function.'" Resp. 21. Accordingly, we agree that on the current record, there is no dispute relating to the meaning of "secondary tuner function" that we need to resolve. Consequently, we do not explicitly construe this term.

preambles of claims 1 and 13

Petitioner argues the preambles of independent claims 1 and 13 are not limiting because they are merely statements of intended use. Pet. 6. In response, Patent Owner argues, "[o]nce again, Petitioner does not explain why this affects application of any cited references." Resp. 22. Whether or not the preambles here are limiting, Petitioner provides argument and detailed citations showing that the elements of the preambles of claims 1 and 13 are taught by the cited art. Pet. 32–35. Patent Owner does not dispute this showing. For the reasons discussed below in the context of Petitioner's obviousness contentions, we find that the asserted prior art discloses all elements recited in the preambles. We, therefore, need not determine whether the preambles of the independent claims are limiting.

the "determining" limitation

Claim 1 recites, "determining that neither a first tuner nor a second tuner are available to perform the requested tuning operation" and claim 13 recites, "determine that neither the first tuner nor the second tuner is available to perform the requested tuner operation." Ex. 1001, 18:39–42, 19:50–53 ("the 'determining' limitation").[9] The parties agree that the "determining" limitation should be given its plain and ordinary meaning. Pet. 5; Resp. 11. However, as noted previously, Patent Owner contends the plain and ordinary meaning should be construed "in accordance with which the step of 'determining . . .' happens at the time of the requested tuning operation (i.e., at the time when a tuner is needed to perform the operation)." Resp. 11 (citing Ex. 2004 (Balakrishnan Decl.) ¶¶ 50–51). Patent Owner argues, "[t]he claim language refers to determining availability at the time of the requested tuning operation (e.g., not at the earlier time when the requested operation was scheduled)." *Id*. In other words, Patent Owner contends that the determination must be made at the time the requested tuning operation is to be performed. *See, e.g.*, Resp. 14 (characterizing "the invention as determining tuning availability at the time of the requested tuning operation, and not merely checking in advance for scheduling conflicts."); *id.* at 15 (indicating "that the invention does not merely check for conflicts among future scheduled recordings, but rather determines that the two tuners are not available at the time they are needed for a tuning operation" (citing Ex. 1003, 89–90)). Patent Owner contends that the claims

[9] Pursuant to a Certificate of Correction issued September 1, 2015, the phrase "are available to perform" was changed to "is available to perform" in claim 13 (but not in claim 1). Ex. 1001, 31.

do not encompass making the determination when scheduling the requested tuning operation, which Patent Owner characterizes as "checking in advance for scheduling conflicts." *See, e.g.*, Resp. 14, 15.

In construing the claims, first and foremost, we rely on the language of the claims. Neither claim 1 nor claim 13 (or any other claim) contains any language indicating that the "determining" limitation is performed at the time of the requested tuning operation (i.e., at the time when a tuner is needed to perform the operation) and not at the earlier time when the requested operation was scheduled.

Patent Owner argues its claim interpretation is required because "[c]laims 1 and 13 recite 'determining' that neither tuner 'is/are available' in the present tense, in contrast to the future tense of 'will be available.'" Resp. 11. We do not agree that the use of present, rather than future tense, supports construing the claims so that the determination must be made at the time of the requested tuning operation and "not at the earlier time when the requested operation was scheduled." *Id*. The natural reading of the present tense in claims 1and 13 is simply that the recited determination is made at the time of "receiving a request to perform a tuning operation." The only other timing-related implication of the language of claims 1 and 13 is that *subsequent to* ("in response to") the recited determination, a user may be alerted to the determination results such that the user may resolve any conflict. Ex. 1001, 18:35–47 (claim 1), 19:41–59 (claim 13).

Patent Owner also argues that the language of the dependent claims supports its proposed construction. Resp. 12 ("Dependent claims 4-5 and 16-17 also recite examples of tuning operations and functions that are *real-time (not future scheduled)* activities, such as 'viewing television

programming,' 'providing a picture-in-picture signal,' 'collecting program guide data,' 'browsing the Internet,' and 'playing a music channel.") (emphasis added). Dependent claims are, by definition, more narrow than the independent claims from which they depend. Thus, the mere fact that certain dependent claims recite real-time tuning operations and functions does not logically require that the independent claims from which they depend are restricted to real-time operations. Patent Owner provides no explanation or authority to the contrary. Moreover, Dr. Balakrishnan's testimony, which is conclusory and contains no more reasoning than Patent Owner's brief, does not persuade us otherwise. Ex. 2004 ¶¶ 51–53.

Patent Owner also argues that the Specification of the '512 patent supports its proposed construction. Resp. 12–14. First, Patent Owner points to language in the '512 patent using present tense, including, "allocat[ing] whichever *tuner is not currently busy* for recording a selected program *when that program is about to begin*." *Id.* at 12 (quoting Ex. 1001, 7:54–58, 2:1–10, 8:21–23, 10:28–38, 10:49–54). However, Patent Owner concedes that these are all examples. *Id.* Other than asserting "[t]o a POSITA, these examples indicate that the invention determines availability at the time when the operation requiring a tuner is to be performed," Patent Owner does not explain why these examples should limit the claim scope. *Id.* Second, Patent Owner asserts that the '512 patent "consistently ties the 'determining…' step to the time when the program for the requested tuning operation is about to begin." *Id.* at 13 (quoting Ex. 1001, 1:65–2:10, 7:28–30, 8:33–36, 10:18–22, 10:49–54). Again, Patent Owner does not explain why these examples limit the scope of the claim. *Id.* Dr. Balakrishnan's testimony is equally conclusory, quoting the same portions of the '512

patent and concluding, without explanation or evidentiary support, that "[t]his indicates to a person of ordinary skill in the art that the invention checks for tuner availability when the program is about to begin, not when the user schedules the recording." Ex. 2004, ¶¶ 55–56.

Similarly, Patent Owner points to the flowchart in Figure 3(b) as supporting its construction. Resp. 12–13. Figure 3(b) of the '512 patent is reproduced below.

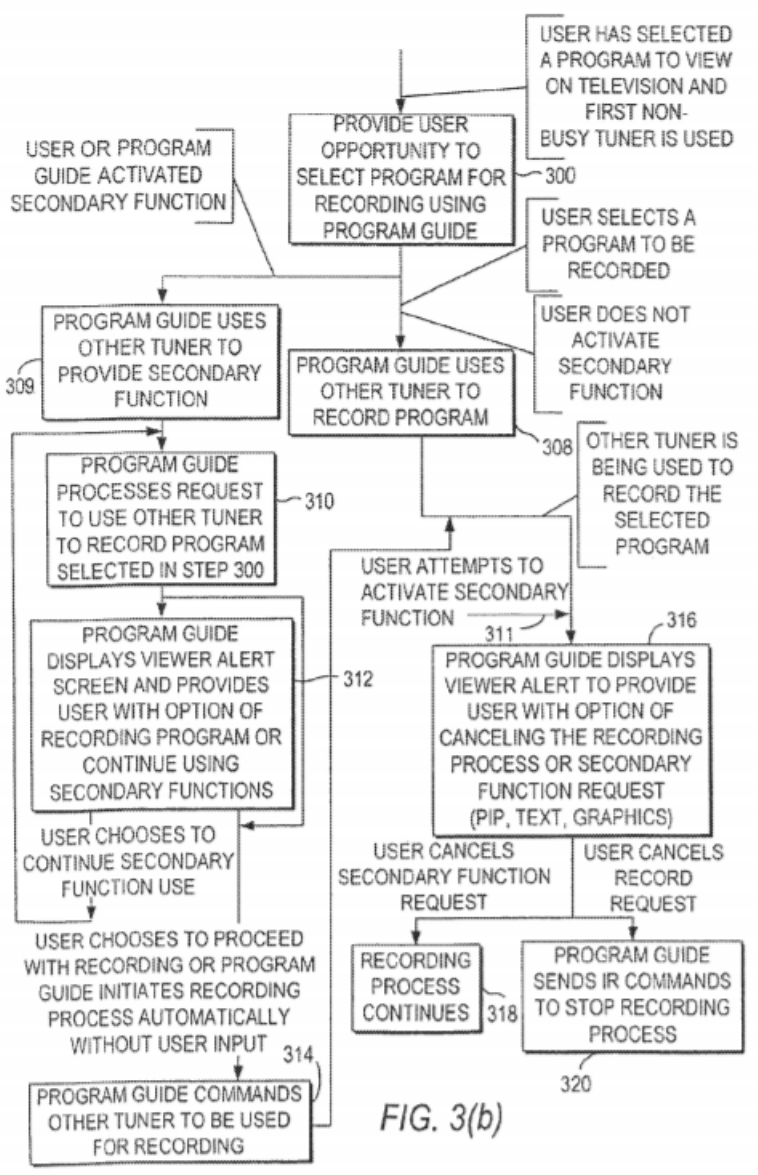


FIG. 3(b)

Figure 3(b) depicts "a flow chart that illustrates steps involved in using an interactive television program guide system that includes a set-top box that has two tuners and switching circuitry of the type shown in FIG. 2(b) in accordance with the present invention." Ex. 1001, 2:49–53.

Patent Owner asserts that "the left branch of Figure 3(b) shows at step 310 that the program guide 'processes request to use other tuner' and determines that both tuners are in use," and, "[i]n response to this determination, the program guide displays an alert." Resp. 12. According to Patent Owner, "[t]his demonstrates that the 'determining' step—which includes processing a request to use the other tuner to record—happens at the time when the requested tuning operation (record) conflicts with the currently performed functions of the tuners. . . ." *Id.* at 13.

We do not agree with Patent Owner's conclusion regarding the implications of Figure 3(b). Instead, Figure 3(b) simply shows that sometime after receiving a request to use the other tuner, it processes that request (step 310) and then displays an alert (step 312). Ex. 1001, Fig. 3b, 9:6–20. Nothing in Figure 3(b) or its corresponding description limits the timing of the determining step to occur at the time the requested tuning operation is to be performed. Again, Dr. Balakrishnan's testimony does not add support or explanation to Petitioner's argument. *See* Ex. 2004 ¶ 58.

Patent Owner also cites an argument made during prosecution of the '512 patent as supporting its claim interpretation. Resp. 14–16; *see id.* at 15 (citing Ex. 1003 (file history of '512 patent), 89–90). As explained in our Institution Decision, this evidence establishes that the Examiner rejected patentee's argument as to the scope and interpretation of the "determining" limitation being limited to "tuner" conflicts (as opposed to "timer"

conflicts). *See* Inst. Dec. 17–19 (citing 1003, 35, 50–51, 59) (indicating the file history shows that the Examiner maintained the rejection after this argument was made and did not allow the application until further and different arguments were submitted). At oral argument, Patent Owner's counsel clarified that Patent Owner points to the file history only to show its interpretation has been consistent. Tr. 49:21–24 ("[W]e are not arguing for prosecution history disclaimer here. We are simply saying that what the applicant said during prosecution is consistent with the way you read the claims and the specification."), 51:5–6 (Patent Owner's counsel confirming that is not arguing that the Examiner agreed with Patent Owner's proposed construction).

Our conclusion that the file history does not support Patent Owner's proposed construction is in accordance with the ITC's findings. As in this proceeding, before the ITC, Patent Owner argued there is a distinction between tuner and timer conflicts that supports its interpretations of the "determining" limitation, but the ITC rejected Patent Owner's argument. In the Commission Opinion, the ITC stated:

> [D]uring prosecution of the application resulting in the '512 patent, the Examiner rejected this purported distinction. While the applicant attempted to draw this distinction while arguing past a reference during prosecution (and as acknowledged by Respondents' expert), the examiner did not accept it as a basis to distinguish the '512 patent over the prior art. The applicant had to rely on amendments and arguments requiring the use of two tuners to distinguish over the prior art.

Ex. 1013, 31 (citations omitted). We agree with the ITC's reasoning.

Considering the language of the claims, the Specification, and the file history, we find no support for adding the Patent Owner's proposed

limitation to the scope of the claims of the ’512 patent. The “determining” limitation contains common words, which are easily understood, none of which link the “determining” limitation to the time when the requested tuner operation is to be performed or preclude determining scheduling conflicts for when the tuner later is to perform the requested operation. We conclude, based on the plain and ordinary meaning of the words recited and giving the broadest reasonable interpretation in view of the Specification to the “determining” limitation, that the claims should not be construed to contain any limitation on the timing of the determination other than it occurs after the request to perform a tuning operation and before the alert is displayed. *See* Ex. 1001, 18:35–47 (claim 1), 19:41–59 (claim 13).

“cancel a function”

Patent Owner argues that the phrase “cancel a function” as used in independent claims 1 and 13 should be construed to mean “stop a function utilizing a signal tuned to by a tuner.” Resp. 16. This is the construction adopted by the ITC, and the parties agree that this is the correct construction.[10] Ex. 2006 (ITC Initial Determination), 444 (“Thus, the administrative law judge construes the phrase “cancel a function” to mean “stop a function utilizing a signal tuned to by the second tuner to be performed.”); Resp. 16 (citing Ex. 2006, 444); Tr. 14:23–15:2, 18:1–24 (Petitioner’s counsel indicating that the ITC’s construction is the same as the broadest reasonable construction), 52:1–4 (Patent Owner’s counsel indicating proposed construction is the same as the ITC’s construction). We

[10] Neither party proposed a construction of “cancel a function” prior to institution of this trial (*see* Pet. 5–6; Prelim. Resp. 15–19), and we did not construe “cancel a function” in the Institution Decision. Inst. Dec. 7–10.

agree that the proposed construction is consistent with the plain language of the claims and the claim context in which "cancel a function" occurs—"to direct the interactive television program guide to cancel a function of the second tuner and permit the second tuner to perform the requested tuning operation." The proposed construction also is consistent with the Specification that describes sending a command to the VCR to stop recording when the user cancels the record request. Ex. 1001, 9:66–10:5; *see* Resp. 17 (citing Ex. 1001, 9:66–10:5).

Accordingly, we construe the phrase "cancel a function" as used in independent claims 1 and 13 to mean "stop a function utilizing a signal tuned to by a tuner."

Although the parties agree to this construction, the parties dispute whether this construction "covers future time conflicts" (as Petitioner contends the broadest reasonable construction must do) or whether the construction requires that only a function that is underway may be cancelled (as Patent Owner contends). PO Resp. 17; Reply 9 (Petitioner asserting that "the construction under BRI must be broad enough to cover future timer conflicts.").

The recited "canceling a function" occurs in the context of responding to the determination that no tuner is available to perform the requested function. Because of that context, Patent Owner's argument here is in concert with its position regarding the construction of the determining limitation. According to Patent Owner, the determination must be made at the time of the requested tuning operation is to be performed and if the determination is made that neither tuner is available to perform the requested tuner function, it logically follows that a tuner must be stopped from

performing an ongoing function in order to perform the requested tuner operation.

We, however, do not agree that the determining step is so limited. Similarly, we do not agree with Patent Owner that "cancel a function" does not include functions scheduled for future times. We credit the deposition testimony of Patent Owner's expert, Dr. Balakrishnan, who indicates that the challenged patent contemplates conflicts in future scheduled recordings. Ex. 1011, 104:5–13.[11] With this understanding of the '512 patent, the plain meaning of "canceling a function" encompasses canceling future scheduled recordings.

Accordingly, we determine that "cancel a function" encompasses canceling future scheduled recordings.

C. Level of Skill in the Art

With regard to the level of ordinary skill in the art, the Petition states:

> A person of ordinary skill in the art at the time of the alleged invention would have had at least a bachelor's degree in computer science, electrical engineering, computer engineering, or a similar discipline, and at least two to three years of experience or familiarity with electronic program guides ("EPGs"), television video signal processing, graphical user interfaces, and associated computer software. Ex.-1009, ¶22. Alternatively, a person of ordinary skill could have equivalent experience either in industry or research, such as designing,

[11] "Q. The patent contemplates though that you may have recordings that would occur in the future?
A. Sure.
Q. And the patent contemplates that you may have conflicts in future scheduled recordings?
A. I think there is a description of that, yes."
Ex. 1011, 104:5–13.

> developing, evaluating, testing, or implementing the aforementioned technologies. Ex.-1009, ¶22.

Pet. 7. The Patent Owner's Response states:

> [A] person of ordinary skill in the art at the time of the invention would have had a bachelor's degree in electrical or computer engineering or computer science, or equivalent experience, and two to four years of experience relating to computer programming and user interfaces, including Internet programming or any equivalent knowledge, training and/or experience in the field of services for providing video content or associated content or features (e.g., interactive program guides on screen menus advertising searching), or any hardware or software related to the provision such services. Additional graduate education could substitute for professional experience, or significant experience could substitute for formal education. Ex. 2004 ¶¶ 16-18, 1-13.

Resp. 10. Although there are differences in these assertions regarding the level of ordinary skill in the art, the parties agree that "there aren't any significant differences that affect the analysis one way or the other" and that the minor differences do not impact the result in this proceeding. Tr. 32:9–17, 33:1–4. We find both proposals to be reasonable and agree that the minor differences do not affect our analysis.

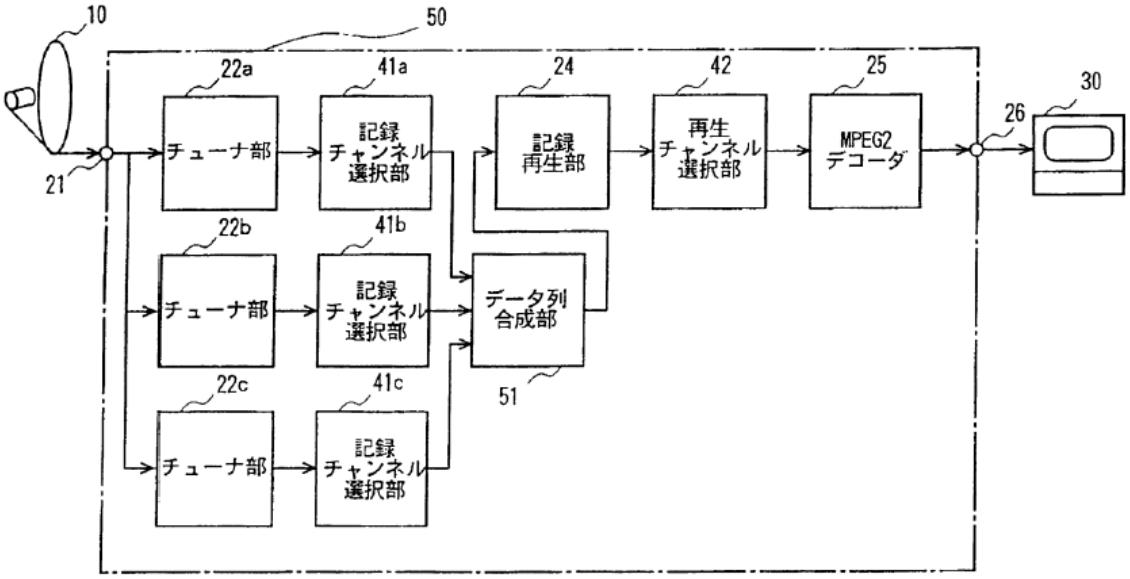
D. Asserted Obviousness in View of Sano and Marsh

Petitioner argues that claims 1–4, 8, 12–16, 20, and 24 of the '512 patent would have been obvious in view of Sano and Marsh. Pet. 32–48.

1. Overview of Sano

*S*ano is titled, "Digital Broadcast Recording and Playing Apparatus." Ex. 1006, (54). Sano teaches a system with three tuners, an "electric program guide" ("EPG"), and an alarm or warning display "if the number of

channels set is more than three in the same time band." *Id*. at Fig. 5, 11:29–40, 12:33–34.[12] Figure 4 of Sano, reproduced below, shows one embodiment of the described digital broadcast recording and playing apparatus.



22a: Tuner Portion
22b: Tuner Portion
22c: Tuner Portion
41a: Recording Channel Selecting Portion
41b: Recording Channel Selecting Portion
41c: Recording Channel Selecting Portion
24: Recording/Playing Portion
51: Data Stream Compositing Portion
42: Playback Channel Selecting Portion
61: Timer Recording Setting Portion
25: MPEG2 Decoder

[12] Exhibit 1006 contains multiple page numbers. Ex. 1006. For purposes of this Decision, we refer to the bottom-most page numbers in the footer (the numbers that *do not* have a prefix of "page").

Sano discloses a system with three tuners (*id*. at 12:18) and that the number of channels that can be selected and recorded is three (*id*. at 12:33–34.) Sano discloses that the EPG can be used to set recording instructions, which are automatically provided to the tuners. *Id*. at 12:21–27. Sano states, "if the number of channels set is more than three in the same band when setting the timer-recording, it is impossible to record all of the channels that have been set." *Id*. at 12:33–34. Sano provides "an alarm, such as a beep tone or warning display" to prevent such a "misoperation." *Id*. at 12:35–37.

2. Overview of Marsh

Marsh is titled, "VCR Recording Timeslot Adjustment." Ex. 1007, (54). Marsh teaches a TV cable system with an interactive program guide ("IPG"). *Id*. at (57) (Abstract). The IPG data in the system's head end is periodically compared to IPG data recorded in the VRC-record timers of each set-top. *Id*. "When this automatic updating of one VCR-record-timer produces a time-slot conflict with a different VCR-record-timer, the conflict is resolved, either automatically or by a user-alert-message that enable user intervention to resolve the conflict." *Id*. "[T]he user can manually and interactively reprogram or cancel the related VCR-record-timers." *Id*. at 12:24–26. Figure 1, reproduced below, shows "an interactive TV network that incorporates the number N of set-tops." *Id*. at 4:27–28.

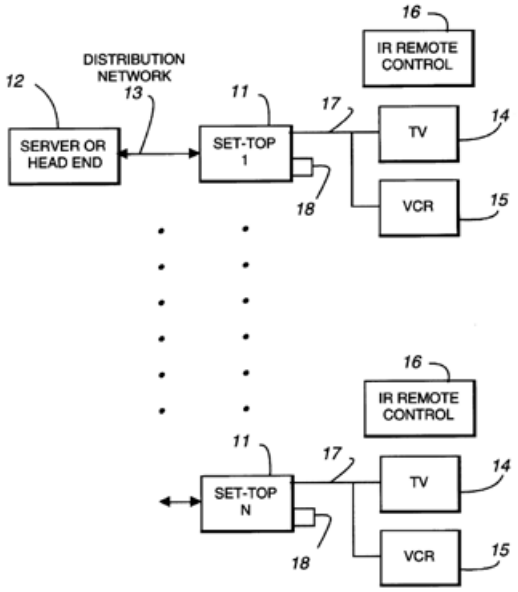


Fig. 1

Figure 1 depicts a system with a plurality of set-top boxes 1–N providing outputs to TVs 14 and VCRs 15. *Id.* at 5:10–6:3.

Figure 3, reproduced below, is a flowchart "providing resolution of a time-slot conflict when a future-time VCR request is received by the set-top CPU." *Id*. at 4:32–35.

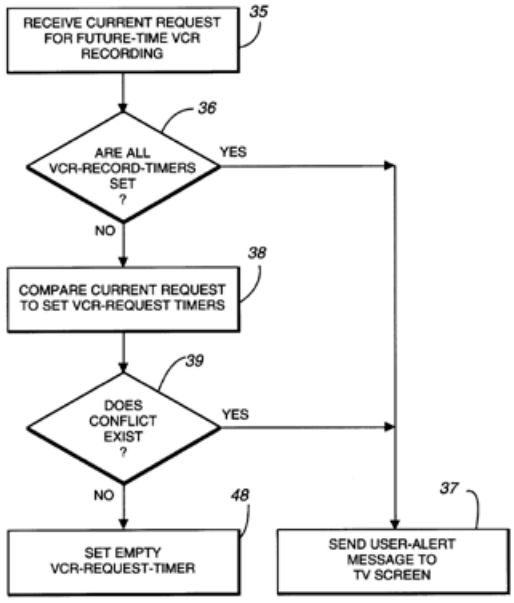


Fig. 3

To resolve a time-slot conflict, step 39 of Figure 3 asks, "Does Conflict Exist?" *Id.* at 7:38–43. If the answer to that question is "Yes," then step 37 "Send User-Alert Message to TV Screen" is performed. *Id.* The detailed description of Figure 3 states:

> Decision function 39 now enables CPU 25 to determine if function 38 has found a day/time conflict. When the answer is "yes", again a user-alert 37 is sent to the user's TV screen, the details of the message being non-critical to the invention. The action that is possible by the user includes cancellation of one of the conflicting requests.

Id. at 7:38–43. An example of such user-alert message is shown in Figure 8, reproduced below. *Id*. at 8:45–46.

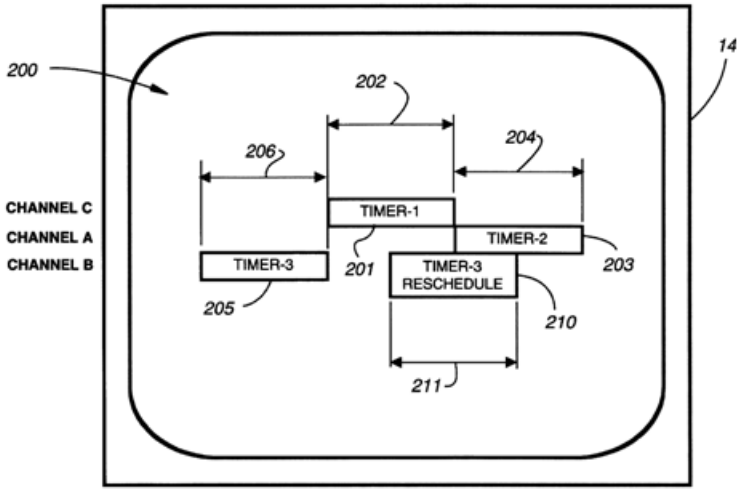


Fig. 8

Figure 8 of Marsh depicts "a user-alert graphic message that visually appears on the screen of a user's TV to visually show the user how reprogramming one active VCR-record-timer to its correct time-slot will produce a time-slot conflict with two other active VCR-record-timers." *Id*. at 4:66–5:3.

3. Analysis of Obviousness Over Sano and Marsh

Petitioner's assertion that the combination of Sano and Marsh teaches or suggests all the limitations of claims 1–4, 8, 12–16, 20, and 24 of the '512 patent is detailed and supported by citations to the references. Pet. 32–48. Petitioner asserts, "Sano teaches the claimed invention, but for a recording cancellation feature, which is rendered obvious by Marsh." Pet. 32. Patent Owner contends that Petitioner's proposed combination is missing certain claim limitations recited in the independent claims (Resp. 39–50), Petitioner has failed to provide sufficient motivation to combine the references (Resp. 51–58), and certain claim limitations recited by dependent claims are missing in the prior art (Resp. 58–66). We have reviewed Petitioner's contentions and evidence, Patent Owner's contentions and evidence, and, as described in detail below, are persuaded that Petitioner has established, by a preponderance of the evidence, that claims 1–4, 8, 12–16, 20, and 24 of the '512 patent would have been obvious over the combined teachings of Sano and Marsh.

Independent Claims 1 and 13

We start our analysis by discussing how the prior art discloses each of the limitations of independent claims 1 and 13. Subsequently, we address whether a person of ordinary skill in the art would have combined the references in the manner asserted.

preambles

The preamble of claim 1 is "[a] method for resolving a conflict when multiple operations are performed using multiple tuners controlled by an interactive television program guide" and the preamble of claim 13 is "[a] system for resolving a conflict when multiple operations are performed

using multiple tuners controlled by an interactive television program guide." Ex. 1001, 18:35–37, 19:41–43. As noted previously, there is no dispute between the parties that all elements of the preambles of claims 1 and 13 are disclosed in the cited art.

Sano states, "the present invention comprises a plurality of tuner portions." Ex. 1006, 4:14, *see also* Figure 5 (depicting three tuners 22a, 22b, and 22c). Sano discloses an electric program guide (EPG) and states, "[t]o setup timer recording, a program that is to be recorded is selected using a cursor, etc. from a weekly program schedule, by channel or by category displayed on the display screen of the image receiver based on the EPG information." *Id*. at 11:31–34. Sano further states:

> With the digital broadcast recording and playing apparatus of FIG. 5, the number of channels that can be arbitrarily selected and simultaneously recorded is three. Given this, if the number of channels set is more than three in the same time band when setting the timer-recording, it is impossible to record all of the channels that have been set. Such a misoperation can be prevented by providing an alarm, such as a beep tone or a warning display, when the number of channels exceeds the maximum number of channels that can be recorded simultaneously when setting up timer-recording.

Id. at 12:31–37. Based on the unambiguous disclosures of Sano, we find that Sano discloses all the elements recited in the preambles of independent claims 1 and 13.

"first tuner," "second tuner," and an IPG

Claim 13, the independent system claim, recites, "a first tuner; a second tuner; and an interactive television program guide implemented on the system." Ex. 1001, 19:44–47. As shown above with regard to the

preambles of claims 1 and 13, Sano teaches these elements. *See* Pet. 33–34 (quoting Ex. 1006, Fig. 5, 11:29–34).

"receiving a request to perform a tuning operation"

Claim 1 recites, "receiving a request to perform a tuning operation" and claim 13 recites, "receive a request to perform a tuning operation." Ex. 1001, 18:38, 19: 49 ("the 'receiving a request' limitation"). There is no dispute between the parties that the cited art teaches this limitation. *See* Pet. 34–35 (citing Ex. 1006, 11:32–34; Ex. 1007, 2:1–3; Ex. 1009 ¶ 74); Resp. 39–50.

Sano states, "[t]o setup timer recording, a program that is to be recorded is selected using a cursor, etc. from a weekly program schedule, by channel or by category displayed on the display screen of the image receiver based on the EPG information." Ex. 1006, 11:31–34. Marsh states:

> With this IPG [Interactive-Program-Guide] data visually displayed on the TV screen, the user may manually position a cursor or the like in order to select the program box of one present-time program for present-time viewing on the TV set.
>
> In addition, the user can cursor-select one program box of a future-time program, thus enabling the future-time VCR recording, thus enabling a more future-time TV viewing of that particular program. Usually, each set-top is provided with eight VCR-record-timers, to thereby enable up to eight future-time programs to be selected for VCR recording.

Ex. 1007, 2:1–10. We find that the cited art teaches the "receiving a request" limitation. *See* Pet. 34–35 (citing Ex. 1006, 11:32–34; Ex. 1007, 2:1–3; Ex. 1009 ¶ 74).

the "determining" limitation

Claim 1 recites, "determining that neither a first tuner nor a second tuner are available to perform the requested tuning operation" and claim 13 recites, "determine that neither the first tuner nor the second tuner is available to perform the requested tuner operation." Ex. 1001, 18:39–42, 19:50–53 ("the 'determining' limitation"). Sano states:

> With the digital broadcast recording and playing apparatus of FIG. 5, the number of channels that can be arbitrarily selected and simultaneously recorded is three. Given this, if the number of channels set is more than three in the same time band when setting the timer-recording, it is impossible to record all of the channels that have been set. Such a misoperation can be prevented by providing an alarm, such as a beep tone or a warning display, when the number of channels exceeds the maximum number of channels that can be recorded simultaneously when setting up timer-recording.

Ex. 1006, at 12:31–37. Claim 11 of Sano is directed to "[a] digital broadcast recording and playing apparatus . . . wherein: the timer-recording setting means comprise means for generating an alarm when the number of channels which are set overlapping exceeds the maximum number of simultaneously recordable channels of the recording and playing means." *Id*. at 15:23–26.

Petitioner explains that, from this disclosure, "one skilled in the art would understand that the IPG described by Sano is used to determine if *any* of the tuners are available since the 'program that is to be recorded is selected using a cursor, etc. from a weekly program schedule, by *channel* . . . displayed on the display screen of the image receiver based on the EPG information.'" Pet. 36 (quoting Ex. 1006, 11:32–34) (emphasis added by Petitioner).

Patent Owner contends Sano does not disclose determining tuner availability and, accordingly, the cited art does not teach determining the availability of two tuners. Resp. 39–49; *see also id.* at 22–34 (asserting, in the context of summarizing the prior art, that the tuner in Sano's recorder are always available). Patent Owner argues that Sano's tuners remain available for other functions during recordings. *Id*. at 40–46. Specifically, Patent Owner argues that each of the three tuners in Sano can process four channels and, "in fact, the tuners in Sano are *not* the limitation of the number of recorded channels and remain available to provide *more channels* than those recorded." *Id*. at 40. Patent Owner asserts that Figure 4 supports this reading of Sano because it shows an embodiment in which the tuners multiplex programs of several channels. *Id.* at 41–42 (citing Ex. 1006, Fig. 4, 10:23–11:20; Ex. 2005, 50:20–51:9, 52:21–54:2; Ex. 2004 ¶ 118). Further, Patent Owner argues that these disclosures apply, not only to the embodiment shown in Figure 4, but also that described in Figure 5 because the structural elements are the same in the two figures. *Id.* at 42 (citing Ex. 1006, 11:37–38).

We do not agree with Patent Owner's characterization of Sano. Despite any disclosure that, in some embodiments, the disclosed tuner *may* multiplex multiple programs, and thus be available for more recordings than the number of tuners, Sano plainly also teaches that each tuner may be limited to just one recording and, in that scenario, the user is alerted when it attempts more recordings at a certain time than there are tuners. Specifically, Sano teaches a system with *three* tuners that are limited to three simultaneous recordings. Ex. 1006, Fig. 5, 11:38–40. Sano states that in one embodiment, the system "is configured so that an alarm is produced

when the number of channels which overlap in setting exceeds the maximum number of recordable channels of the recording and playing means," in order to prevent "misoperation of timer setup." Ex. 1006, 5:2–6; *see also* Ex. 1006, 14:3–5 ("Furthermore, incorrect operation of timer setup can be prevented by providing an alarm if the number of channels with overlapping time bands setup for timer-recording exceeds the maximum number M.").

Similarly, Sano states:

> With the digital broadcast recording and playing apparatus of FIG. 5, the number of channels that can be arbitrarily selected and simultaneously recorded is *three*. Given this, if the number of channels set is more than *three* in the same time band when setting the timer-recording, it is impossible to record all of the channels that have been set. Such a misoperation can be prevented by providing an alarm, such as a beep tone or a warning display, when the number of channels set exceeds the maximum number of channels that can be recorded simultaneously when setting up timer-recording.

Id. at 12:31–37 (emphasis added). A plain reading of this passage is that if the number of requested recordings exceeds the number of tuners (three) at the same time, a determination is made that no tuner is available to perform the requested operation and, in response to that determination, an alarm or warning display is provided.

Given this clear disclosure, we do not agree with Patent Owner that it is relevant that Sano's "stated objective of keeping 'recording track pitch [] constant.'" Resp. 43–44. We also do not agree that a "close reading of Sano shows that the presence of three tuners in the recording system of Figure 5 does *not* limit the number of channels that can be simultaneously set for timer-recording to three channels" and that "Petitioner incorrectly conflates a limit on *channels* with a limit on *tuners*." *Id.* at 44, 46 (citing Ex. 2004

¶¶ 117–134). Instead, we credit Dr. Rhyne's testimony that "Sano describes determining a conflict and providing an alarm in response to a conflict," including an embodiment that depends on the number of tuners available. Ex. 1012 ¶ 21. Dr. Rhyne explains even if the system is set to record 12 channels on 3 tuners, if a "user selects a 13th program for recording," the system creates an alert because "the Sano system requires a fourth tuner to complete the request." *Id.*; *see also* Ex. 1012 ¶¶ 22–23 (describing two other scenarios disclosed by Sano that trigger an alert). We find that Dr. Rhyne's testimony is consistent with Sano's disclosure. On the other hand, Dr. Balakrishnan's testimony is inconsistent with Sano's disclosure. Ex. 2004 ¶¶ 117–128. For example, we do not agree that "[w]hile Sano refers to a three-channel recording limit in connection with Fig. 5, that limit is not because the recording and playing apparatus has three tuners. . . ." *Id.* at ¶ 124. Instead, the evidence shows that a person of ordinary skill in the art would understand that programming conflicts that arise are primarily the result of finite tuner resources. Ex. 1006, 11:22–25 ("Furthermore, increasing the number of tuner portions 22 a to 22c . . . enables a maximum of the broadcasts of the channels of the maximum recordable number M of channels to be recorded simultaneously."); Ex. 1011, 50:4–16; Ex. 1012 ¶ 16.

Our reading of Sano is in accordance with the findings of the ITC. The ITC cites the passage of Sano describing Figure 5 discussed above (Ex. 1006, 12:31–37), and concludes, "Sano recognizes the problem of running out of tuner resources and does not place any temporal limitation on when the conflict occurs. Rather, Sano says if more than three channels are set to record at one time (whatever time that might be), this will cause a conflict."

Ex. 1013 (Commission Opinion), 32; *see also* Ex. 2006 (Initial Determination), 512–513 (citing the same passage and stating "[t]he administrative law judge has determined that this evidence shows that Sano teaches this limitation.").

Patent Owner additionally argues, "[a]s explained above, the 'determining' step requires checking tuner availability at the time of the requested tuning operation (*i.e.*, at the time when a tuner is needed to perform the operation)." Resp. 46–49. However, this contention is based, as explained above in Section II.C, on an improperly narrow construction of the "determining" limitation.

Accordingly, we find that Sano teaches the "determining" limitation.

"the first tuner and the second tuner are both capable of performing the tuning operation"

Claims 1 and 13 recite, "wherein the first tuner and the second tuner are both capable of performing the tuning operation." Ex. 1001, 18:41–42, 19:52–53. There is no dispute between the parties that the cited art teaches this limitation. *See* Resp. 39–58. As shown above, Sano teaches three tuners which are capable of performing tuner operations that the user requests. *See* Pet. 32–34; Ex. 1006, (57), Fig. 5, 4:14–15.

Accordingly, we find that Sano teaches this limitation.

the "cancel a function" limitation

Claim 1 recites, "in response to the determination, displaying an alert that provides a user with an opportunity to direct the interactive television program guide to ***cancel a function*** of the second tuner to permit the second tuner to perform the requested tuning operation." Ex. 1001, 18:43–47

(emphasis added). Claim 13 contains the same limitation recited using identical language except for reciting "display" rather than "displaying." *Id.* at 19:54–59. With regard to this limitation, Petitioner states, "Marsh is relied upon to modify the teachings of Sano to include a cancellation feature." Reply 16; *see also* Pet. 37–38 ("Sano fails to explicitly state that the user can cancel the function of the second tuner," but Marsh discloses "the user can manually and interactively reprogram or cancel the related VCR-record-timers."). Patent Owner argues that the prior art does not teach this limitation. Resp. 49–50.

As discussed above, we find that Sano discloses providing the user with an alert, stating "a misoperation can be prevented by providing an alarm, such as a beep tone or a warning display, when the number of channels set exceeds the maximum number of channels that can be recorded simultaneously when setting up timer-recording." Ex. 1006, 12:35–37.

As for providing the user with an opportunity to cancel one of the recordings, Marsh discloses that "the user is visually shown" the conflict and "[i]n this way, the user can manually and interactively reprogram or cancel the related VCR-record-timers 27 in order to satisfy the user's particular recording priorities." Ex. 1007, 12:20–27. In addition, in describing Figure 3, Marsh states:

> Decision function 39 now enables CPU 25 to determine if function 38 has found a day/time conflict. When the answer is "yes", again a user-alert 37 is sent to the user's TV screen, the details of the message being non-critical to the invention. The action that is possible by the user includes cancellation of one of the conflicting requests.

Id. at 7:38–43. As described above, in Section II.E.2, Figure 8 shows an example of the alert shown to the user when a conflict is detected. *Id*. at 8:45–46.

Patent Owner argues that, because the cited art fails to teach the "determining" limitation, the display of the alert and opportunity to cancel a function cannot be "in response to that determination." Resp. 49–50; *see also id.* at 35–37 (characterizing Marsh as addressing VCR-recorder-timer conflicts, not tuner conflicts). As discussed above, we disagree with Patent Owner's contention and find that, as asserted by Petitioner, Sano does disclose the "determining" limitation.

Patent Owner also argues that "Petitioner and Dr. Rhyne do not identify any disclosure in Marsh of directing an *IPG* to cancel a function of the second tuner, as claimed." Resp. 50. In other words, Patent Owner argues that "Marsh (at 12:24–26) refers only to the user manually or interactively reprogramming or canceling VCR-record-timers," but that Marsh does not disclose a user making the cancelation using an interactive programming guide. *Id.* (citing Ex. 1007, 7:38–43; Ex. 2004 ¶ 139).

We do not agree with Patent Owner's characterization of Marsh. Patent Owner's expert, Dr. Balakrishnan, testifies that the term "interactively" as used in Marsh means that the "user is making some interactive selections, or choices," such as using a remote control to interact with the interactive programming guide. Ex. 1011, 125:7–126:11. We give little weight to Dr. Balakrishnan's conclusory and unsupported testimony to the contrary. *See* Ex. 2004 ¶¶137–140. Dr. Rhyne, on the other hand, provides testimony that is consistent with Marsh's disclosure and with Dr. Balakrishnan's deposition testimony. Ex. 1009 ¶¶ 80–82; Ex. 1012 ¶ 24.

The evidence, therefore, shows that a person of ordinary skill in the art would understand Marsh to disclose "displaying an alert that provides a user with an opportunity to direct the IPG to cancel a function of the second tuner to permit the second tuner to perform the request tuning operation" as claimed. *See* Pet. 37–39; Reply 19–21; Ex. 1007, 2:1–3, 7:11–43, 12:4–27; Ex. 1009 ¶¶ 80–82; Ex. 1011, 125:7–126:11; Ex. 1012 ¶ 24. In accordance with the construction of "cancel a function," we find Marsh teaches stopping a function utilizing a signal tuned by a tuner.

Accordingly, we find that Sano and Marsh teach all the limitations of claims 1 and 13.

motivation to combine Sano and Marsh

With regard to the motivation to combine the relevant teachings of the cited references, the Petition states, "[i]t would have been obvious to combine Sano's IPG and multiple tuner system with Marsh's IPG recording cancellation feature for the purpose of improving user access and control of desired programming content." Pet. 38 (citing Ex. 1009 (Rhyne Decl.), ¶¶ 80-82).

Petitioner also argues the rationales articulated by the Supreme Court in *KSR Int'l Co. v. Teleflex, Inc.*, 550 U.S. 398, 416 (2007), support a motivation to combine. The Petition states:

> [A]ll the claimed elements were known in the prior art and one skilled in the art would have combined the elements as claimed by known methods with no change in their respective functions, and the combination would yield nothing more than predictable results to one of ordinary skill in the art. *KSR Int'l Co. v. Teleflex, Inc.*, 550 U.S. 398, 416 (2007). More specifically, Sano describes a multi-tuner system that is capable of recording multiple programs simultaneously, along with an

> alert when there is a conflict from having M+1 requests for only M tuners. As explained in the Rhyne Declaration, Sano fails to explicitly teach a user enabled "cancel" function that allows the user to resolve the identified conflict as claimed. Ex.-1009, ¶80. Marsh describes well-known methods of conflict resolution requiring user input when the number of requests exceeds the number of available tuners (in particular where there are two or more requests for the same tuner). LaJoie also teaches a system that identifies programming conflicts, alerts the user of the programming conflict, and teaches advanced secondary tuner functions such as music services, web browsing and other online services.
>
> * * * *
>
> Moreover, "a person of ordinary skill has good reason to pursue the known options within his or her technical grasp" and "[i]f this leads to the anticipated success, it is likely that product [was] not of innovation but of ordinary skill and common sense." *KSR Int'l Co. v. Teleflex, Inc.*, 550 U.S. 398, 421 (2007). That is the case here. Sano describes a multi-tuner system that is capable of recording multiple programs simultaneously. A task that was routinely performed by skilled artisans was to provide a system for resolution of conflicts and to provide notice of conflicts to system users.

Pet. 29–30.

Patent Owner argues there would have been no motivation to combine Sano with Marsh. Resp. 51–55 (citing Ex. 2004 ¶¶ 141–148). Specifically, Patent Owner argues that "Sano and Marsh address entirely different problems," asserting "Sano is focused on the capability of recording media" and "Marsh is focused on a TV cable system having one set-top box per user and addresses the problem of automatically updating scheduled recordings." Resp. 52 (citing Ex. 1006, 3:31–37; Ex. 1007, (57), 3:20–23, 3:52–59). According to Patent Owner, "[a] POSITA would *not* have been motivated to

look to Marsh's system with multiple set-tops because" Sano discourages the "use of conventional set-tops due to 'costly' MPEG2 encoders requiring 'very complicated signal processing.'" *Id.* at 52–53 (Ex. 1006, 3:31–38; Ex. 2004 ¶¶ 143–144).

We do not agree with Patent Owner's characterization of the two references. Both Sano and Marsh relate to problems in receiving, recording, and viewing broadcast TV. *See* Ex. 1006 (Sano), 2:5–6 ("The present invention relates to a digital broadcast recording and playing apparatus for receiving, recording, and playing television broadcasts of a digital format."); Ex. 1007 (Marsh), 1:7–13 ("This invention relates to interactive multimedia communication networks, such as interactive TV cable systems, that send both broadcast and on-demand features to a number of subscribers, wherein each subscriber's location includes a set-top terminal and a television (TV) set that is connected to the set-top terminal, and wherein each subscriber's location may also include a Video Cassette Recorder (VCR) that is connected to the set-top terminal.") Given these disclosures, we do not agree that "Sano and Marsh address entirely different problems" as argued by Patent Owner.

Moreover, we do not agree that Sano would discourage a person of ordinary skill from combining Marsh with Sano based on its disclosure that multiple conventional set-tops may be economically undesirable. *In re Farrenkopf*, 713 F.2d 714, 718 (Fed. Cir. 1983) ("That a given combination would not be made by businessmen for economic reasons does not mean that persons skilled in the art would not make the combination because of some technological incompatibility. Only the latter fact would be relevant."). Patent Owner does not argue technological incompatibility between Sano

and Marsh. *See* Resp. 51–55. Instead, we agree with Petitioner that a person of ordinary skill would be motivated to combine Sano and Marsh in order to improve user access and control over programming content. Pet. 41; Reply 24; Ex. 1009 ¶ 82; Ex. 1012 ¶ 29.

Patent Owner also argues, "modifying the output capacity control of Sano with the conflict resolution of Marsh would not improve Sano. Sano already has an alert ('alarm, such as a beep tone or a warning display') that prevents 'misoperation.'" Resp. 53. Again, we do not agree. Although Sano recognizes the problem of conflicting requests and provides an alert, it does not provide a clear solution of allowing the user to give input in how to prevent "misoperation." Marsh's specific teaching of a manner to resolve the conflict through cancelation of one of the requested operations would improve the system of Sano. We credit the testimony of Dr. Rhyne that states: "[i]t would have been obvious to combine Sano's multiple tuner system with Marsh's recording cancellation feature to improve a user's control over programming content. A PHOSITA would have found claims 1 and 13 a predictable use of prior art elements according to their established functions." Ex. 1009 ¶ 82. We do not agree with Dr. Balakrishnan's testimony, which relies on his reading of Sano that, as explained above, we do not agree is correct. Ex. 2004 ¶¶ 145–147. Specifically, we do not agree that "Sano does not have a tuner availability problem when more requests than the number of tuner portions are received." *Id.* at ¶ 145; *see also* Resp. 53–54 (arguing that Sano "avoids tuner conflicts altogether").

Patent Owner further argues that "Sano does not indicate any need for more 'control over programming content.'" Resp. 54–55 (citing Ex. 2004 ¶¶ 142–148). There is no requirement, however, that the prior art itself

articulate the motivation. *KSR*, 550 U.S. at 418 ("As our precedents make clear, however, the analysis need not seek out precise teachings directed to the specific subject matter of the challenged claim, for a court can take account of the inferences and creative steps that a person of ordinary skill in the art would employ."). We agree that improving user access and control over programming content is a general goal that a person of ordinary skill in the art would consider when designing interactive television programming guides.

We find that a preponderance of the evidence establishes that a person of ordinary skill in the art would have been motivated to combine the relevant teachings of Sano and Marsh in order to improve user access and control of desired programming content.

conclusion

Considering all the evidence and arguments presented by the parties, we conclude that claims 1 and 13 of the '512 patent would have been obvious over the combined teachings Sano and Marsh.[13]

Claims 2 and 14

Claim 2 depends from claim 1 and recites, "receiving a user selection to not cancel the function of the second tuner; and in response to the user selection to not cancel the function of the second tuner, continuing to perform the function of the second tuner." Ex. 1001, 18:48–53. Claim 14 depends from claim 13 and recites commensurate limitations. *Id*. at 20:1–7.

[13] Although based on a different combination of references (Nagano (US 6,240,240) and Sano (US 6,445,872)), the ITC also concluded that claims 1 and 13 of the '512 patent were obvious. Ex. 1013 (Commission Opinion), 2, 29–30.

Petitioner relies on Marsh as disclosing this limitation. Pet. 39 ("Marsh discloses these additions of claims 2 and 14 to claims 1 and 13, i.e., receiving a user selection, via the IPG, to not cancel a function, and acting on it by continuing the function.") (citing Ex. 1007, 12:28–45).

Patent Owner argues that the cited art fails to teach the limitations of claims 2 and 14. Resp. 58–59.

Marsh states:

> [T]he invention does not cancel any of the record requests 201, 203, 205, but rather provides the user-alert-message or TV display 200 as shown in FIG. 8 [reproduced above]. This message enables the user to interactively resolve the visually displayed time-slot conflict in accordance with the user's viewing priorities.

Ex. 1007, 12:4–9. Petitioner argues:

> It would have been obvious to one of ordinary skill in the art to combine the multi-tuner recording capability taught by Sano with the conflict resolution system that allows a user to cancel the requested tuning operation with an IPG, as taught by Marsh, thereby continuing the function of the second tuner. Ex.-1009, ¶¶86-89. Such a predictable use of the prior art would have prompted a skilled artisan to combine the references for the purpose of providing users improved access and control of their desired programming content. Ex.-1009, ¶89.

Pet. 41. We agree that this evidence supports finding that the cited art teaches the limitations of claims 2 and 14 and that there existed a motivation to combine the relevant teachings of the cited references.

Patent Owner argues that the combination does not teach the limitations of claims 2 and 14 because "Sano is not compatible with *live* tuner functions. Sano processes only recordings and does not support live TV viewing, as the incoming signals are sent to the recording circuitry."

Resp. 59 (citing Ex. 1006, 5:32–35, 13:2–4; Ex. 2004 ¶ 159; Ex. 2005, 64:11–14). We do not agree with Patent Owner's characterization of Sano. Dr. Balakrishnan's testimony is premised on an incorrect reading, as discussed above, of Sano as not disclosing "a tuner availability problem when requests for more channels than the number of tuner portions are received." Ex. 2004 ¶ 159.

Moreover, Petitioner relies on Marsh, not Sano, as teaching the limitations of claims 2 and 14. *See* Pet. 39–41 (citing Ex. 1007, 12:4–18, 12:20–27, 12:28–45; Ex. 2009 ¶ 89). Marsh discloses receiving a user selection to not cancel the function of the second timer, stating:

> Another conflict that may occur is when the user's TV 14 is currently turned on, i.e. ***the user is currently watching a TV program***. When the record-start-time that is stored within an active VCR-record-timer 27 of the associated set-top 11 is about five, or perhaps ten, minutes prior to the current-time, mixer 31 of FIG. 2 is used to sent [sic] a user-alert message that overlies only a portion of ***the TV picture currently being watched by the user***. . . . This alert message enables the user to cancel this particular VCR-record-request, or if the user desires an alternate end result, the user's TV viewing program will automatically change.

Ex. 1007, 12:28–45 (emphasis added). The evidence also shows that it would have been obvious for a person of ordinary skill in the art to modify Sano's system with this conflict resolution system of Marsh for the same reason as discussed above with respect to claims 1 and 13, namely, such functionality would improve a user's access and control over programming content. Pet. 41; Reply 25–26; Ex. 1009 ¶¶ 86–89; Ex. 1012 ¶¶ 39–46.

Considering all the arguments and evidence presented by the parties with regard to these claims, we conclude that claims 2 and 14 would have been obvious over the combined teachings of Sano and Marsh.

Claims 3 and 15

Claim 3 depends from claim 1 and recites, "receiving a user selection to cancel the function of the second tuner; and in response to the user selection to cancel the function of the second tuner, canceling the function of the second tuner and performing the requested tuning operation." Ex. 1001, 18:54–59. Claim 15 depends from claim 13 and recites commensurate limitations. *Id*. at 20:8–14. Petitioner presents detailed argument and evidence showing the limitations of claims 3 and 15 are taught by the cited art and that, based on the combination of the relevant teachings from the cited art, these claims are unpatentable. Pet. 41–44 (citing Ex. 1007, 12:4–45; Ex. 1009 ¶¶ 80, 93–95). Patent Owner does not present any argument or evidence specifically directed to the limitations of claims 3 and 15. *See generally* Resp.

Marsh states, "the user is enabled to interactively use a TV screen cursor to change the conflicting VCR-record-requests as desired" and "the user can manually and interactively reprogram or cancel the related VCR-record-timers 27 in order to satisfy the user's particular recording priorities." Ex. 1007, 12:16–18, 25–28. We find Marsh discloses receiving the user's cancellation request, canceling the function, and performing the requested function as claimed.

For the same reasons described above with respect to claims 1, 2, 13, and 14, we agree a person of ordinary skill would have found it obvious to combine Sano and Marsh, as asserted. See Pet. 43–44. We, therefore, find a

preponderance of the evidence establishes that claims 3 and 15 would have been obvious over the combined teachings of Sano and Marsh.

Claims 4 and 16

Claim 4 depends from claim 1 and recites, "wherein the requested tuning operation, the function of the second tuner, and a function of the first tuner each comprises a tuning function selected from the group consisting of viewing television programming, recording television programming, and performing a secondary tuner function." Ex. 1001, 18:60–65. Claim 16 depends from claim 13 and recites commensurate limitations. *Id*. at 20:14–19. Petitioner presents detailed argument and evidence showing the limitations of claims 4 and 16 are taught by the cited art and that, based on the combination of the relevant teachings from the cited art, these claims are unpatentable. Pet. 44–45 (citing Ex. 1006, 10:36–41; Ex. 1009 ¶¶ 99–100). Patent Owner does not present any argument or evidence specifically directed to the limitations of claims 4 and 16. *See generally* Resp.

Sano states:

> The three tuner portions 22 a, 22 b and 22 c receive broadcasts of different frequencies and apply them to the recording selecting portions 41 a, 41 b and 41 c, respectively. The outputs of the recording channel selecting portions 41 a, 41 b and 41 c are inputted to the data stream compositing portion 51, which composites data into a time series of data streams and outputs them to the recording/playing portion 24.

Ex. 1006, 10:36–41. We find this passage teaches "Sano's disclosed multi-tuner system has program recording and program viewing functions corresponding to the claim limitation," as asserted by Petitioner. *See* Pet. 44.

For the same reasons described above with respect to claims 1, 2, 13, and 14, we agree a person of ordinary skill would have found it obvious to combine Sano and Marsh, as asserted. We, therefore, find that a preponderance of the evidence shows that claims 4 and 16 would have been obvious over the combined teachings of Sano and Marsh.

Claims 8 and 20

Claim 8 depends from claim 1 and recites, "a function of the first tuner is viewing a first television program, the function of the second tuner is recording a second television program, and the requested tuning operation is viewing a third television program." Ex. 1001, 19:14–19. Claim 20 depends from claim 13 and recites commensurate limitations. *Id*. at 20:34–38.

Petitioner asserts that a person of ordinary skill in the art would have found these additional limitations obvious over the combined teachings of Sano and Marsh. Pet. 45–47. According to Petitioner, the following passage in Sano teaches "a multi-tuner system that allows a user to view and record multiple programs:"

> Timer recording can be set in the timer-recording setting portion 61. When the set time comes, the timer-recording setting portion 61 provides a channel selection and a recording instruction automatically to the tuner portions 22 a, 22 b and 22 c, the recording selecting portions 41 a, 41 b and 41 c, and the recording/playing portion 24 to start recording.

Ex. 1006, 12:23–27. In addition, the Petition turns to Marsh for its cancellation feature. Pet. 46. Petitioner then asserts that "[d]ue to a limited number of obvious tuner functions (e.g. viewing or recording), a person of ordinary skill in the art would have understood that modifying Sano's multi-

tuner system with Marsh's conflict resolution teaching would allow a user to view a program with a tuner, record another program with another tuner, and request that a tuner view a third television program." *Id.* at 46–47 (citing Ex. 1009 ¶¶ 106–107). Petitioner adds that "[s]uch a combination provides a user increased access and control of programming content." *Id.* (citing Ex. 1009 ¶ 107).

Patent Owner argues that neither Sano nor Marsh, by themselves, teach the limitation recited in claims 8 and 20. Resp. 62–64 (citing Ex. 2004 ¶¶ 177–182). Specifically, Patent Owner argues that, although "Sano discloses simultaneously recording multiple programs," neither Sano nor March disclose "simultaneous viewing and recording." *Id.* at 63. Moreover, according to Patent Owner "Sano does not allow live television viewing," but even if it did "Sano would not detect a conflict with" the requested third program. *Id.* (citing Ex. 2004 ¶¶ 180–181). Patent Owner makes other arguments regarding the allegedly limited disclosure of Sano that we disagree with for the same reasons discussed above with regard to claims 1 and 13.

We do not agree with Patent Owner's characterization of Sano and Marsh. Sano specifically discusses "playing television broadcasts of a digital format" and the use of "commercially available" set top boxes. Ex. 1006, 2:4–38. And, we agree with Dr. Rhyne that a person of ordinary skill in the art "would understand that video tape recorders and 'commercially available' STBs could display live television broadcasts." Ex. 1012 ¶¶ 43 (citing Ex. 1006, Fig. 5, 2:26–28, 13:5–7), 59–60; *see* Reply 15, 29. Moreover, because of the limited number of tuner functions, we agree with Petitioner that a person of ordinary skill in the art "would have understood

that instead of looking at conflicts only for recordings, the Sano IPG could look for a conflict for any function . . . that involves the tuner." Reply 29; Ex. 1009 ¶ 107; Ex. 1012 ¶¶ 34.

We find that a preponderance of the evidence shows that claims 8 and 20 would have been obvious over the combined teachings of Sano and Marsh.

Claims 12 and 24

Claims 12 and 24 are dependent on claims 1 and 13, respectively, and recite, "the first tuner and the second tuner are included in a single device." Ex. 1001, 19:39–40, 20:56–57. We find that Sano discloses that "digital broadcast recording and reproducing apparatus 50" includes "tuner portions 22 a, 22 b and 22 c in a single device." Ex. 1006, Figure 5, 10:25-26; *see* Pet. 47 (citing Ex. 1006, 10:25–26, Fig. 5; Ex. 1009 ¶¶ 111–112). Moreover, for the same reasons described above with respect to claims 1, 2, 13, and 14, we agree a person of ordinary skill would have found it obvious to combine Sano and Marsh, as asserted. *See* Pet. 48. Patent Owner does not present any argument or evidence specifically directed to the limitations of claims 12 and 24. *See generally* Resp.

We find that a preponderance of the evidence establishes that claims 12 and 24 would have been obvious over the combined teachings of Sano and Marsh.

Conclusion

In conclusion, we determine that a preponderance of the evidence establishes that claims 1–4, 8, 12–16, 20, and 24 of the '512 patent would have been obvious over the combined teachings of Sano and Marsh.

E. Asserted Obviousness In View of Sano, Marsh, and LaJoie

Petitioner argues that claims 5–7, 9–11, 17–19, and 21–23 of the '512 patent would have been obvious in view of Sano, Marsh, and LaJoie. Pet. 48–62. Overviews of Sano and Marsh are provided above in Sections II.E.1–2.

1. Overview of LaJoie

LaJoie is titled, "Inter-Active Program Guide with Default Selection Control." Ex. 1008, (54). Figure 3 of LaJoie, reproduced below, is a block diagram of a set-top terminal of a cable television system. *Id*. at 8:42–43.

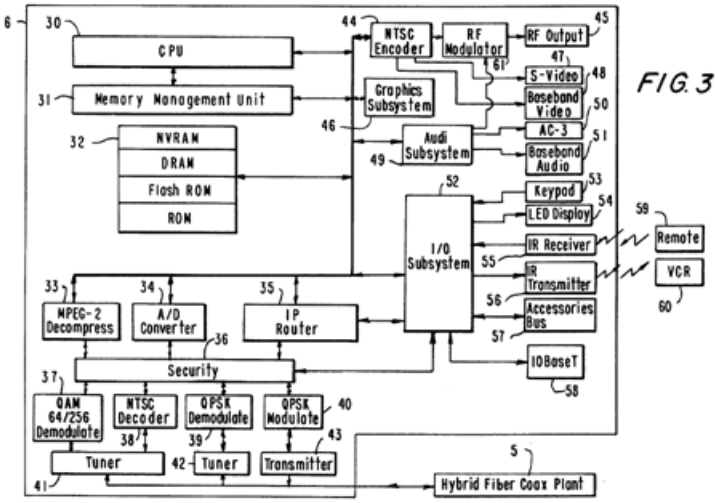


FIG. 3

Figure 3 depicts a set-top box with two tuners (41 and 42 in lower left-hand corner). Figure 24, reproduced below, provides a flow diagram "illustrating the operation of an interactive program guide." *Id*. at 9:15–16.

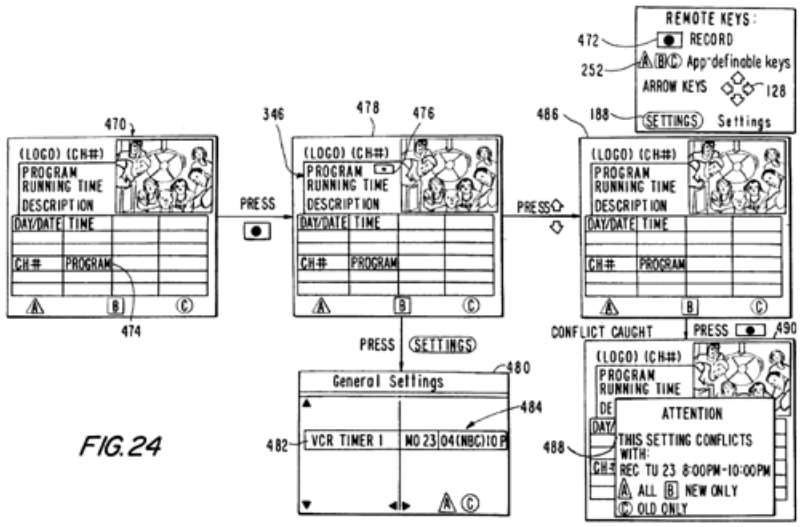


FIG. 24

Figure 24 is a flow diagram illustrating a user interacting with the IPG, determining a conflict, and displaying an alert (see 488 in the lower right-hand corner). Ex. 1008, 9:14–17, 29:5–32. LaJoie states:

> As discussed in connection with the general settings menu (see FIG. 12), conflict detection and resolution is also incorporated into the OTR [One-Touch Recording] feature of the present invention. Conflict detection and resolution detects and alerts the set-top terminal user of possible timer conflicts at the time the timers are set up to prevent timers from being erroneously set or over-written. For example, the OTR feature will alert the user if an attempt is made to simultaneously record two or more programs as illustrated in FIG. 24. As shown, if after having set up a program to be recorded using One-Touch Recording (display 478), the user attempts to record another program which is being shown at the same time by first highlighting (display 486) and then pressing record key 472, an attention banner 488 will be displayed (display 490) warning the user of the conflict and enabling the conflict to be resolved.

Id. at 29:16–32

2. Analysis of Obviousness Over Sano, Marsh, and LaJoie

Petitioner's showing that the combination of Sano, Marsh, and LaJoie teaches or suggests all the limitations of claims 5–7, 9–11, 17–19, and 21–

23 of the ’512 patent is detailed and supported by citations to the references. Pet. 48–62. Petitioner asserts, “Sano teaches the claimed invention, but for a recording cancellation feature, which is rendered obvious by Marsh” (Pet. 32) and “Sano in combination with Marsh teach the claimed invention, but for a secondary tuner function such as playing a music channel, which is rendered further obvious by LaJoie” (Pet. 48). Patent Owner opposes, contesting that certain limitations recited in the claims are missing and Petitioner fails to provide sufficient motivation to combine the references. Resp. 55–56, 29–62, 64–66.

Claims 5 and 17

Claims 5 and 17 depend from claims 4 and 16, respectively, and recite: “the secondary tuner function comprises a tuning function selected from the group consisting of providing a picture-in-picture signal, collecting program guide data, browsing the Internet, and playing a music channel.” Ex. 1001, 18:66–19:3, 20:20–24. Petitioner cites LaJoie as teaching secondary tuning functions as recited in claims 5 and 17. Pet. 49 (citing Ex. 1008, 5:39–40, 5:45–50; Ex. 1009 ¶¶ 118–120).

We find that LaJoie discloses this limitation by stating, “channel number 1 could be associated with a music service” and “if a channel number 10 corresponding to a World Wide Web browsing or Internet E-Mail service is selected by a subscriber, a service type identifier in a service table indexed by channel number might instruct the set-top terminal to execute the appropriate World Wide Web browser or Internet E-Mail software.” Ex. 1008, 5:39–40, 5:45–50.

With regard to combining the teachings of the cited references, the Petition states, “[i]t would have been obvious to one of ordinary skill to

modify the systems suggested by the combination of Sano and Marsh to further include the music service of LaJoie for the purpose of maximizing a user's access to additional programming content such as music, Internet, and email services." Pet. 49 (citing Ex. 1009 ¶¶ 118–120). We credit Dr. Rhyne's testimony that a person of ordinary skill in the art would have found it obvious to combine the systems of Sano and Marsh with the system of LaJoie to improve a user's viewing experience with a music feature" and such combination would have been a predictable use of prior art elements according to their established functions." Ex. 1009 ¶ 120.

Patent Owner argues that this combination would pose technical obstacles because Sano "is not compatible with *live* tuner functions like a music service." Resp. 55–56. In addition, Patent Owner argues that "Petitioner fails to explain how LaJoie's live music, Internet, and e-mail services would operate with Sano's tuners." *Id.* at 57. We do not agree that Petitioner's asserted combination would pose technical obstacles as argued by Patent Owner. Petitioner provides persuasive evidence that "[m]odifying Sano's multiple tuners and conflict resolution system with the . . . secondary tuner functions (e.g., music service) taught by LaJoie, would be accomplished through the predictable use and application of well-known engineering techniques to yield predictable results." Reply 21. Dr. Rhyne testifies that one of ordinary skill "would have understood the advantages of a second tuner to include performing additional non-program-viewing functions such as providing a music channel as well as the associated disadvantages such as creating conflicts when a user requests more tuner functions than tuners available . . . because the combination is nothing more than a simple substitution of well-known elements (*i.e.*, multiple tuners,

IPGs, and secondary tuner functions) to obtain predictable results." Ex. 1012 ¶ 38; *see also* Ex. 1013, 33–34. Patent Owner acknowledges that Sano's "timer-recording setting portion 61 . . . superimpose[s] [the EPG information] on the video signals output from the MPEG 2 decoder 25." Resp. 34 (citing Ex. 1006, 12:18–20, Fig. 5). As pointed by Petitioner, "[c]ollecting IPG information (i.e., a secondary tuner function), however, is a live/real time tuner function." Reply 15 (citing Ex. 1001, Fig. 3(c); Ex. 1011, 122:12–123:21; Ex. 1012 ¶¶ 26, 51).

Moreover, we find Petitioner's assertions are made with sufficient detail and that Patent Owner's argument regarding the rigid physical combination of the prior art devices to be contrary to the law. *In re Nievelt*, 482 F.2d 965, 968 (CCPA 1973) ("Combining the teachings of references does not involve the ability to combine their specific structures."); *see In re Mouttet*, 686 F.3d 1322, 1332 (Fed. Cir. 2012) ("It is well-established that a determination of obviousness based on teachings from multiple references does not require an actual, physical substitution of elements."). Therefore, we agree that a person of ordinary skill would have been motivated to combine the music service of LaJoie with the combined Sano-Marsh system.

Patent Owner does not present any additional argument or evidence specifically directed to the limitations of claims 5 and 17. *See generally* Resp.

We find that a preponderance of the evidence establishes that claims 5 and 17 would have been obvious over the combined teachings of Sano, Marsh, and LaJoie.

Claims 6 and 18

Claims 6 and 18 depend from claim 1 and 13, respectively, and recite, "a function of the first tuner is viewing a first television program, the function of the second tuner is performing a secondary tuner function, and the requested tuning operation is recording a second television program." Ex. 1001, 19:4–8, 20:25–29. In accordance with Petitioner's contentions noted previously, Petitioner cites Sano as teaching a system with three tuners and both viewing and recording functions and LaJoie as teaching secondary tuner functions such as a music service. Pet. 50 (citing Ex. 1006, 10:36–41; Ex. 5:39–40; Ex. 1009 ¶¶ 125–126). With regard to combining the teachings of the cited references, the Petition states:

> It would have been obvious to one of ordinary skill to modify the systems suggested by the combination of Sano and Marsh to further include the secondary tuner function of a music service taught by LaJoie wherein the user is viewing a program on the first tuner while accessing the music service on a second tuner, and a recording is requested on the second tuner. Ex.-1009, ¶126. Such a capability enhances a user's access and control of additional programming content and would have been a predictable use of the prior art elements. Ex.-1009, ¶126.

Pet. 50–51.

Patent Owner argues that the cited combination of art fails to teach "resolving a conflict involving a request to perform a secondary tuner function, such as a music service." Resp. 60 (citing Ex. 2004 ¶ 164). Patent Owner also reiterates its arguments over the disclosure of Sano—that it "does not allow live tuner functions such as music," and could not, even when combined with Marsh, "simultaneously view a program and perform a secondary tuner function such as a music service." *Id.* According to Patent

Owner, these limitations of Sano make any combination with LaJoie unworkable. *Id.* at 61 (citing Ex. 2004 ¶¶ 165–166).

We agree with Petitioner that the asserted combination of LaJoie with the Sano-Marsh system would have been obvious to a person of ordinary skill in the art. *See* Pet. 50–51; Reply 26–27; Ex. 1009 ¶¶ 122–127; Ex. 1012 ¶¶ 34, ¶¶ 47–49). LaJoie unambiguously discloses a music service on which Petitioner's combination of the references depends for the secondary tuner function. Ex. 1008, 5:39–40. For the reasons discussed above, with respect to claims 5 and 17, we do not agree with Patent Owner's characterization of Sano or that the combination of LaJoie with the Sano-Marsh system would be unworkable.

Considering all the arguments and evidence presented by the parties with regard to these claims, we find that a preponderance of the evidence establishes that claims 6 and 18 would have been obvious over the combined teachings of Sano, Marsh, and LaJoie.

Claims 7 and 19

Claims 7 and 19 depend from claims 1 and 13, respectively, and recite, "a function of the first tuner is viewing a first television program, the function of the second tuner is recording a second television program, and the requested tuning operation is performing a secondary tuner function." Ex. 1001, 19:9–13, 20:29–33. In accordance with Petitioner's contentions noted previously, Petitioner cites Sano as teaching a system with three tuners and both viewing and recording functions and LaJoie as teaching secondary tuner functions such as a music service, web browsing, and internet email. Pet. 51–52 (citing Ex. 1006, 10:36–41, 12:32–34; Ex. 1008, 5:45–50; Ex.

1009 ¶¶ 125, 130–131). With regard to combining the teachings of these references, the Petition states:

> It would have been obvious to one of ordinary skill to combine the systems suggested by the combination of Sano and Marsh to further include the music service of LaJoie wherein the user is viewing a program on the first tuner while recording a program on a second tuner, and music service is requested on the second tuner. Ex.-1009, ¶131. Such a capability enhances a user's access and control of additional programming content. Ex.-1009, ¶¶130-131.

Pet. 52.

Patent Owner argues, "Petitioner fails to explain how LaJoie's out-of-band tuner, which is reserved to IP datagram functions, would be used to watch a program while LaJoie's in-band tuner records another program" and "none of Sano, Marsh, or LaJoie discusses resolving a conflict involving a request to perform a secondary tuner function, such as PIP." Resp. 62. However, Patent Owner's argument is based on considering the cited references individually and fails to consider the combination of teachings relied upon by Petitioner.

"Sano . . . states that the invention relates to a digital broadcast recording and playing apparatus for receiving, recording, and *playing television broadcasts* of a digital format." Reply 28 (citing Ex. 1006, 2:5–6). Sano includes multiple tuners for use to provide program viewing and recording. Ex. 1006, Fig. 5, 11:29–12:14; Ex. 1009 ¶¶ 48–50. Marsh teaches that "the user can manually and interactively reprogram or cancel the related VCR-record-timers 27 in order to satisfy the user's particular recording priorities." Ex. 1007, 12:24–27. And, LaJoie teaches a tuner with

a music channel. Ex. 1008, 5:39–40 ("channel number 1 could be associated with a music service"). Dr. Rhyne testifies:

> Given these teachings regarding resolving conflicts and requests to perform secondary tuner functions, as well as viewing and recording of programs, a POSITA would have understood that instead of looking at conflicts only for scheduling for recordings, the Sano IPG would be expanded to look for other types of tuner conflicts. Modifying Sano's multiple tuner and conflict resolution system to include Marsh's cancellation feature and to have the tuners operate with additional secondary tuning functions would be only a simple modification to Sano's existing control software to provide a capability for a user to cancel an assigned tuner task or to maintain the function of the second tuner and cancel the conflicting request.

Ex. 1012 ¶54. Thus, Dr. Rhyne provides testimony that is consistent with the cited art and relates the combined teachings to the claimed invention.

We agree with Petitioner that the asserted combination of LaJoie with the Sano-Marsh system would have been obvious to a person of ordinary skill in the art. *See* Pet. 51–52; Reply 27–28; Ex. 1009 ¶¶ 135–139; Ex. 1012 ¶¶ 50–55). For the reasons discussed above, with respect to claims 5 and 17, we do not agree with Patent Owner's characterization of Sano or that the combination of LaJoie with the Sano-Marsh system would be unworkable.

Considering all the arguments and evidence presented by the parties with regard to these claims, we find that claims 7 and 19 would have been obvious over Sano, Marsh, and LaJoie.

Claims 9 and 21

Claims 9 and 21 depend from claims 1 and 13, respectively, and recite:

> the alert provides the user with the opportunity to direct the interactive television program guide to cancel the function of the second tuner when the function of the second tuner is viewing a television program, and provides the user with the opportunity to direct the interactive television program guide to cancel a function of the first tuner when the function of the first tuner is viewing the television program.

Ex. 1001, 19:20–27, 20:39–46. Petitioner asserts that a person of skill in the art "would readily be able to extend an alert for canceling the use of a tuner to stop a recording or secondary function, to using that same alert to offer the user the opportunity to cancel the use of a tuner (either the first tuner or second tuner) for *viewing* a television program as required by claims 9 and 21." Pet. 53 (citing Ex. 1009 ¶¶ 136–139).

As discussed above, Sano teaches an alarm when a conflict occurs (Ex. 1006, 12:35–37) and Marsh teaches sending, "a user-alert message that overlies only a portion of the TV picture currently being watched by the user" and "[t]his alert message enables the user to cancel this particular VCR-record-request" (Ex. 1007, 12:34–36, 12:43–45). In addition, we find that LaJoie teaches conflict checking. Ex. 1008, Figs. 12, 24, 9:15–17, 21:30–35, 29:5–11. For example, LaJoie states:

> As illustrated, the user has the choice of selecting one of "A," "B," and "C" application definable keys 252 in response to this warning in the preferred embodiment. Pressing "A" key 252 causes set-top terminal 6 to keep both settings and apply logic to resolve the conflict as shown in menu 274 . . . Pressing "B" key 252 in response to interactive warning window 272 causes the conflict to be resolved by the new setting overwriting the old

> setting as shown in menu 276 . . . Pressing "C" key 252 in response to interactive warning window 272 causes the old setting to be retained in general settings menu 278 and cursor 226 to remain displayed on right side 248 of the general settings menu to indicate to the user that the most recent setting has not been accepted.

Id. at 21:55–22:5. Figure 24 of LaJoie is reproduced below.

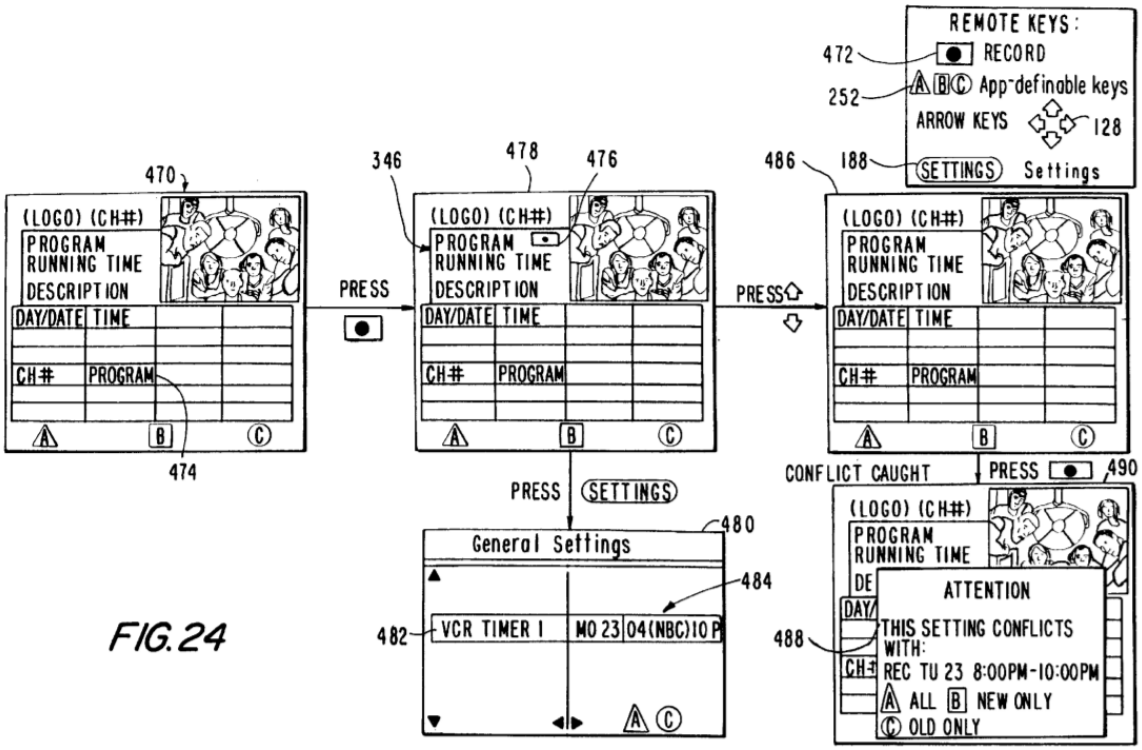


FIG. 24

Figure 24 depicts "the operation of an interactive program guide of a set-top terminal." *Id*. at 9:15–17. LaJoie states:

> FIG. 24 illustrates the One-Touch Recording (OTR) feature of the present invention. From an interactive program guide display 470, pressing record key 472 with a program 474 highlighted causes a VCR timer to be set up for the highlighted program 474 and a to-be recorded indicator 476 to appear in program summary 346, as illustrated in display 478.

Ex. 1008, 29:5–11. Figure 24 states "conflict caught" and provides alert message 488 (lower right corner) that allows a user to resolve the conflict.

We also agree with Petitioner that due the limited number of design options, "such as providing users the capability to continue or cancel a conflicting tuner function on either a first or second time," it would have been obvious to combine the conflict checking disclosed by LaJoie with the Sano-Marsh system. *See* Pet. 57 (citing Ex. 1009 ¶ 140); Reply 29–30 (citing Ex. 1009 ¶¶ 136–140; Ex. 1012 ¶¶ 62–64). Dr. Rhyne's testimony supports this finding stating that such combination "would clearly simplify and improve the user's viewing experience." Ex. 1009 ¶ 140.

Patent Owner argues that the cited combination of art fails to teach canceling the viewing of a television program. Resp. 65 (citing Ex. 2004 ¶¶ 187–189). We do not agree with Patent Owner's characterization of the prior art and find that a person of ordinary skill in the art would find it obvious to allow the user to cancel the use of a tuner for viewing rather than recording of a television program. *See* Pet. 53; Ex. 1009 ¶¶ 136–139.

Patent Owner also argues that Dr. Rhyne's testimony does not support Petitioner's assertions because he uses hindsight reconstruction regarding the ease of combining references and "states a POSITA *could have* extended Sano, not *would have.*" *Id.* (citing Ex. 1009 ¶¶ 136–137). We do not agree that Dr. Rhyne's testimony is fatally tainted by hindsight reconstruction simply because he states that the addition of LaJoie's disclosure to the Sano-Marsh system would "not, in my opinion, be difficult to implement" and would "be easily implemented as an extension of the prior art addressed herein." Ex. 2004 ¶ 136. Although this particular paragraph does not contain extensive explanation of this combination and why it would be easy, read in the context of the entire declaration, discussing similar combinations for other claims, we find this testimony sufficient. Similarly, Dr. Rhyne's

use of the word "could" as opposed to "would" when explaining that Sano's disclosed alarm tone is extendable to alert the user when a requested viewing may be cancelled is not critical when his testimony is viewed as a whole. Ex. 2004 ¶ 137. For example, subsequently, Dr. Rhyne explains that there are "a limited number of known and obvious approaches and design options" for allowing a user to react to a conflict and, therefore, "[o]ne skilled in the art would therefore have found it obvious to extend" the Sano-Marsh system using the "conflict alert and IPG cancellation functions taught by LaJoie" in order to "simplify and improve the user's viewing experience." *Id.* at ¶ 140; Ex. 1012 ¶ 64.

Considering all the arguments and evidence presented by the parties with regard to these claims, we find that claims 9 and 21 would have been obvious over the combined teachings of Sano, Marsh, and LaJoie.

Claims 10 and 22

Claims 10 and 22 depend from claim 1 and 13, respectively, and recite:

> the displaying the alert comprises displaying a display screen using the interactive television program guide that provides the user with a first option to continue to perform the function of the second tuner, and with a second option to cancel the function of the second tuner to perform the requested tuning operation.

Ex. 1001, 19:28–33, 20:47–51. For this additional limitation, Petitioner relies on a combination of Sano, Marsh, and LaJoie. Pet. 60 (citing Ex. 1006, 4:13–15, 11:32–34, 12:35–37;l Ex. 1007, 12:28–45; Ex. 1008, 21:55–60, 21:65–22:5, Fig. 12; Ex. 1009 ¶¶ 143, 146). Marsh discloses that the user can choose to continue or cancel a function:

> Another conflict that may occur is when the user's TV 14 is currently turned on, i.e. the user is currently watching a TV program. When the record-start-time that is stored within an active VCR-record-timer 27 of the associated set-top 11 is about five, or perhaps ten, minutes prior to the current-time, mixer 31 of FIG. 2 is used to send a user-alert message that overlies only a portion of the TV picture currently being watched by the user.
>
> * * * *
>
> This alert message enables the user to cancel this particular VCR-record-request, or if the user desires an alternate end result, the user's TV viewing program will automatically change. . .

Ex. 1007, 12:28–45. LaJoie also discloses a conflict resolution system that presents the user with options using the IPG. Ex. 1008, 21:55–60. 21:65–22:5.

With regard to motivation to combine the teachings of the cited references, the Petition states:

> Due to a limited number of known and obvious approaches, such as providing users with the capability to continue or cancel a conflicting tuner function, it would have been obvious to one of ordinary skill to combine the systems suggested by Sano and Marsh with the conflict alert and IPG cancellation functions taught by LaJoie. Ex.-1009, ¶¶143, 146. The combination would give a user the option to continue or cancel a tuner function, as taught by Marsh and the OTR feature of LaJoie, across multiple tuners, as taught by Sano. Such a capability would have simplified the user's control over programming content. Ex.-1009, ¶146.

Pet. 60.

Patent Owner argues that Marsh does not show "canceling a function of a *second* tuner" and LaJoie "does not show canceling a function of a second tuner or stopping a function using a tuned signal." Resp. 66.

However, each reference must be read, not in isolation, but for what it fairly teaches in combination with the prior art as a whole. *In re Merck & Co., Inc.*, 800 F.2d 1091, 1097 (Fed. Cir. 1986). Petitioner relies on Sano as teaching a system with multiple tuners, Marsh as teaching conflict resolution by canceling a function, and LaJoie as teaching a secondary tuning function, such as playing a music channel. *See, e.g.*, Pet. 32, 48. Marsh discloses that "the user can manually and interactively reprogram or cancel the related VCR-record-timers 27 in order to satisfy the user's particular recording priorities." Ex. 1007, 12:25–27. Considering the teachings of the cited references as a whole, we believe combining the cancelation feature of Marsh with the relied upon teachings of Sano and LaJoie was "the predictable use of prior art elements according to their established functions." *See KSR*, 550 U.S. at 417.

Patent Owner also reiterates its argument regarding Sano's disclosure and asserts that "Petitioner does not explain how the Sano-Marsh combination would be further modified to include the alleged teachings of LaJoie to meet the additional limitations of claims 10 and 22." *Id.* (citing Ex. 2004 ¶¶ 192–193). For the reasons discussed above, we do not agree with Patent Owner's limited reading of Sano. Moreover, we find that Petitioner describes, in sufficient detail, how a person of ordinary skill would combine the teachings of the prior art. *See Nievelt*, 482 F.2d at 968; *Mouttet*, 686 F.3d at 1332 (obviousness does not require physical substitution of elements).

Considering all the arguments and evidence presented by the parties as to these claims, we find that a preponderance of the evidence establishes

that claims 10 and 22 are would have been obvious over the combined teachings of Sano, Marsh, and LaJoie.[14]

Claims 11 and 23

Claims 11 and 23 depend from claim 1 and claim 13, respectively, and recite, "the user selects to cancel the function of the second tuner to permit the second tuner to perform the requested tuning operation using a remote control." Ex. 1001, 19:35–38, 20:52–55. Marsh teaches the use of a remote control with an interactive program guide:

> Within this IPG data TV display, the "2701" (in its binary equivalent) also serves to identify the remaining content of the IPG data entry. Thus, the user can also program the VCR to record this program by entering the four numbers "2710" by way of the user's IR ***remote control***. This four-number entry operation will also operate to program of one of the set-tops VCR-record timers.

Ex. 1007, 2:47–53 (emphasis added); *See* Pet. 60, 61. In addition, LaJoie discloses the use of a remote control. Ex. 1008, Fig. 3 (remote 59 (far right)).

With regard to motivation to combine the teachings of the cited references, the Petition states:

> It would have been obvious to one of ordinary skill in the art to modify the multiple tuner system taught by Sano to include the remote control devices and cancellation features taught by Marsh and LaJoie. Ex.-1009, ¶152. One skilled in the art would find such a combination a predictable use of the prior art

[14] Although based on a different combination of references (Nagano (US 6,240,240) and Sano (US 6,445,872)), the ITC also concluded that claims 10 and 22 of the '512 patent were obvious. Ex. 1013 (Commission Opinion), 2, 29–30.

> elements that would provide a user with increased convenience and control of viewing content. Ex.-1009, ¶¶150-152.

Pet. 62. We agree that a person of ordinary skill in the art would have added the remote control as disclosed in Marsh and LaJoie to increase convenience and control of viewing content. Ex. 1009 ¶¶ 150–152. Patent Owner does not present any argument or evidence specifically directed to the limitations of claims 11 and 23. *See generally* Resp.

We find that a preponderance of the evidence establishes that claims 11 and 23 would have been obvious over the combined teachings of Sano, Marsh, and LaJoie.

Conclusion

In conclusion, we determine that a preponderance of the evidence establishes that claims 5–7, 9–11, 17–19, and 21–23 of the '512 patent would have been obvious over the combined teachings of Sano, Marsh, and LaJoie.

III. MOTION TO EXCLUDE

Patent Owner filed a motion to exclude paragraphs 17, 18, 21, 22, 26, 48, 51, 54, 58, and 64 of Exhibit 1012, the Second Declaration of Vernon Thomas Rhyne. Paper 24 ("Motion"). Petitioner filed an opposition to Patent Owner's motion to exclude. Paper 26 ("Opposition"). Patent Owner filed a Reply in support of its Motion. Paper 27.

In its Motion, Patent Owner argues that Exhibit 1012 should be excluded "in part because that exhibit includes expert testimony that exceeds the permissible scope of reply evidence." Motion 1–2. Petitioner opposes the Motion and argues that the "testimony is proper and admissible as it

directly responds to and rebuts" Patent Owner's Response to the Petition. Opposition 2. For the reasons discussed below, we deny Patent Owner's Motion to Exclude because the testimony sought to be excluded is properly responsive to arguments Patent Owner made in the Response. *See Anacor Pharmaceuticals, Inc. v. Iancu*, 889 F.3d 1372, 1380 (Fed. Cir. 2018) ("the petitioner in an inter partes review proceeding may introduce new evidence after the petition stage if the evidence is a legitimate reply to evidence introduced by the patent owner.").

Paragraphs 17, 18, 21, and 22

One of the main arguments made in Patent Owner's Response is that Sano does not teach the "determining" limitation because Sano's tuners are always available as each of the tuners is capable of outputting multiple channels. Resp. 22–34. Paragraphs 16–23 of Exhibit 1012 are in direct response to these arguments.

In paragraph 17, Dr. Rhyne cites to arguments made by Patent Owner in the Response that the tuners in Sano are always available (Resp. 23) and that in Sano the number of channels which could be output by the tuners was twelve (Resp. 29). Ex. 1012 ¶ 17. The statements made and the evidence cited in paragraphs 17, 18, 21, and 22 all specifically relate to tuner availability and the number of channels that can be output by the tuners in Sano. *Id*. Thus, paragraphs 17, 18, 21, and 22 are directly responsive to arguments made by Patent Owner in its Response.

Paragraphs 26 and 51

Paragraphs 26 and 51 of Exhibit 1012 relate to whether the system in Sano has the capability to handle live or real-time secondary tuning functions such as LaJoie's music service (¶ 26) or downloading electronic

program guide (EPG) data (¶ 51). This issue was raised by Patent Owner in its Response. Resp. 55–58. The Response states, "Sano, however, is not compatible with live tuner functions like a music service." *Id*. at 56. Paragraphs 26 and 51 are directly responsive to this argument made in the Response.

Paragraphs 48, 54, 58, and 64

Paragraphs 48, 54, 58, and 64 of Exhibit 1012 relate to motivation to combine the cited references. In each instance, Dr. Rhyne is responding to an argument Patent Owner made. In paragraph 48, Dr. Rhyne references a specific argument Patent Owner made about incorporating the music service of LaJoie's tuners and other secondary tuner functions into Sano (*see* Resp. 61) and responds to that argument. Paragraph 54 also addresses modifying Sano to incorporate secondary tuner functions. Paragraphs 58 and 64 address a related issue regarding the modification of Sano to detect conflicts between requests to perform to any tuner functions including secondary tuner functions (such as music channel request).

We believe that each of these paragraphs are responsive to arguments made by Patent Owner in its Response and within the proper scope of evidence which may be submitted in reply to those arguments. Accordingly, we deny the Motion.

IV. CONCLUSION

For the reasons given, having considered the arguments and evidence of record presented by the parties, we determine a preponderance of the evidence establishes that claims 1–24 of the '512 patent are unpatentable.

V. ORDER

Accordingly, it is

ORDERED that claims 1–24 of the ’512 patent are unpatentable; and

FURTHER ORDERED that Patent Owner’s Motion to Exclude Evidence (Paper 24) is denied.

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

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