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(Also referred to as FORM PTO-1465)

REQUEST FOR *EX PARTE* REEXAMINATION TRANSMITTAL FORM

File via the USPTO patent electronic filing system, **or send to:**
Mail Stop *Ex Parte* Reexam
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Attorney Docket No.: 15384.0019-00000

Date: August 6, 2026

1. ☑ This is a request for *ex parte* reexamination pursuant to 37 CFR 1.510 of patent number 10,209,953 issued February 19, 2019.

2. The request is made by ☐ patent owner. ☑ third party requester.

☐ a. Third party requester opts to remain anonymous in accordance with 35 U.S.C. 301(e) and 37 CFR 1.501(d). Do not check box 2b.

OR

☑ b. The name and address of the person requesting reexamination is:
Google LLC
1600 Amphitheatre Parkway
Mountain View, California 94043

3. Requester ☐ asserts small entity status (37 CFR 1.27) *or* ☐ certifies micro entity status (37 CFR 1.29). Only a patent owner requester can certify micro entity status. Form PTO/SB/15A or B must be attached to certify micro entity status.

4. This request is accompanied by payment of the reexamination fee as set forth in:

☑ 37 CFR 1.20(c)(2); **or**

☐ 37 CFR 1.20(c)(1). **In checking this box for payment of the fee set forth in 37 CFR 1.20(c)(1), requester asserts that this request has forty (40) or fewer pages and complies with all other requirements of 37 CFR 1.20(c)(1).**

Payment of the reexamination fee is made by the method set forth below.

a. ☐ A check in the amount of $_____ is enclosed to cover the reexamination fee;

b. ☑ The Director is hereby authorized to charge the reexamination fee to Deposit Account No. 06-0916;

c. ☐ Payment by credit card. Form PTO-2038 is attached; **or**

d. ☐ Payment made via the USPTO patent electronic filing system.

☑ In addition, the Director is hereby authorized to charge any fee deficiencies to Deposit Account No. 06-0916.

A Federal agency may not conduct or sponsor, and a person is not required to respond to, nor shall a person be subject to a penalty for failure to comply with an information collection subject to the requirements of the Paperwork Reduction Act of 1995, unless the information collection has a currently valid OMB Control Number. The OMB Control Number for this information collection is 0651-0064. Public burden for this form is estimated to average 55 hours per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the information collection. Send comments regarding this burden estimate or any other aspect of this information collection, including suggestions for reducing this burden to the Chief Administrative Officer, United States Patent and Trademark Office, P.O. Box 1450, Alexandria, VA 22313-1450, or email InformationCollection@uspto.gov. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. Submit fees or completed forms via the USPTO patent electronic filing system, or send to: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

If you need assistance in completing the form, call 1-800-PTO-9199 and select option 2.

5. ☑ Any refund should be made by ☐ check or ☑ credit to Deposit Account No. 06-0916. 37 CFR 1.26(c). If payment is made by credit card, refund must be to credit card account.

6. ☑ A copy of the patent to be reexamined having a double column format on one side of a separate paper is enclosed. 37 CFR 1.510(b)(4).

7. ☐ CD-ROM or CD-R in duplicate, Computer Program (Appendix) or large table
   ☐ Landscape Table on CD

8. ☐ Nucleotide and/or Amino Acid Sequence Submission
   If applicable, items a. – c. are required.
   a. ☐ Computer Readable Form (CRF)
   b. Specification Sequence Listing on:
      i. ☐ CD-ROM (2 copies) or CD-R (2 copies) or
      ii. ☐ paper
   c. ☐ Statements verifying identity of above copies.

9. ☑ A copy of any disclaimer, certificate of correction or reexamination certificate issued in the patent is included.

10. ☑ Reexamination of claim(s) 1, 4-9, 12-14, 18-20, 22-25, and 28-30 is requested.

11. ☑ A copy of every patent or printed publication relied upon is submitted herewith including a listing thereof on Form PTO/SB/08, PTO-1449, or equivalent.

12. ☑ An English language translation of all necessary and pertinent non-English language patents and/or printed publications is attached.

13. ☑ The attached detailed request includes at least the following items:
   a. A statement identifying each substantial new question of patentability based on prior patents and printed publications. 37 CFR 1.510(b)(1).
   b. An identification of every claim for which reexamination is requested, and a detailed explanation of the pertinency and manner of applying the cited art to every claim for which reexamination is requested. 37 CFR1.510(b)(2).

14. ☐ A proposed amendment is included (only where the patent owner is the requester). 37 CFR 1.510(e).

15. ☑ It is certified that the statutory estoppel provisions of 35 U.S.C. 315(e)(1) or 35 U.S.C. 325(e)(1) do not prohibit requester from filing this *ex parte* reexamination request. 37 CFR 1.510(b)(6).

16. Service
   a. ☑ In accordance with 37 CFR 1.510(b)(5), it is certified that a copy of this request (if filed by other than the patent owner) has been served in its entirety on the patent owner at the address as provided for in 37 CFR 1.33(c), in a manner of service compliant with 37 CFR 1.248.

   The name and address of the party served are:

   Jeffrey Armstrong

   Akerman LLP / Sonos, Inc.

   777 S. Flagler Drive, Suite 1100 West Tower, West Palm Beach, FL 33401

   Date of Service: August 6, 2026

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Manner of Service under 37 CFR 1.248:

- ☐ By delivering a copy of the paper to the person served.
- ☐ By leaving a copy at the usual place of business of the person served with someone in his employment.
- ☐ When the person served has no usual place of business, by leaving a copy at the person's residence, with some person of suitable age and discretion who resides there.
- ☑ Transmission by first class mail. When service is by mail the date of mailing will be regarded as the date of service.

OR

b. ☐ Service on the patent owner was not possible. An explanation of the efforts made to serve patent owner **is attached**. See MPEP 2220. A duplicate copy of the request is also attached, unless the request is filed using the USPTO patent electronic filing system.

17. Correspondence Address: Direct all communication about the reexamination to:

☑ The address associated with Customer Number: 22852

OR

☐ Firm or Individual Name _____
(at the address identified below)

Address

City	State	Zip
Country		
Telephone	Email	

18. ☑ The patent is currently the subject of the following concurrent matter(s):

a. ☐ Copending reissue application no.: _____

b. ☐ Copending reexamination control no.: _____

c. ☐ Copending interference or PTAB trial no.: _____

d. ☑ Copending litigation: _____
Sonos, Inc. v. Google LLC, Case No. 2:20-cv-00169 (C.D. Cal.)

e. ☐ See additional sheet(s)

WARNING: Information on this form may become public. Credit card information should not be included on this form. Provide credit card information and authorization on PTO-2038.

/Jeffrey C. Totten/	2026-08-06
Authorized Signature	Date
Jeffrey C. Totten	65,229
Typed/Printed Name	Registration No.

☐ For Patent Owner Requester ☑ For Third Party Requester

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The Privacy Act of 1974 (P.L. 93-579) requires that you be given certain information in connection with your submission of the attached form related to a patent application or patent. The United States Patent and Trademark Office (USPTO) collects the information in this record under authority of 35 U.S.C. 2. The USPTO's system of records is used to manage all applicant and owner information including name, citizenship, residence, post office address, and other information with respect to inventors and their legal representatives pertaining to the applicant's/owner's activities in connection with the invention for which a patent is sought or has been granted. The applicable Privacy Act System of Records Notice for the information collected in this form is COMMERCE/PAT-TM-7 Patent Application Files, available in the Federal Register at 78 FR 19243 (March 29, 2013), www.govinfo.gov/content/pkg/FR-2013-03-29/pdf/2013-07341.pdf.

Routine uses of the information in this record may include disclosure to: 1) law enforcement, in the event that the system of records indicates a violation or potential violation of law; 2) a federal, state, local, or international agency, in response to its request; 3) a contractor of the USPTO having need for the information in order to perform a contract; 4) the Department of Justice for determination of whether the Freedom of Information Act (FOIA) requires disclosure of the record; 5) a Member of Congress submitting a request involving an individual to whom the record pertains, when the individual has requested the Member's assistance with respect to the subject matter of the record; 6) a court, magistrate, or administrative tribunal, in the course of presenting evidence, including disclosures to opposing counsel in the course of settlement negotiations; 7) the Administrator, General Services Administration (GSA), or their designee, during an inspection of records conducted by GSA under authority of 44 U.S.C. 2904 and 2906, in accordance with the GSA regulations and any other relevant (i.e., GSA or Commerce) directive, where such disclosure shall not be used to make determinations about individuals; 8) another federal agency for purposes of National Security review (35 U.S.C. 181) and for review pursuant to the Atomic Energy Act (42 U.S.C. 218(c)); 9) the Office of Personnel Management (OPM) for personnel research purposes; and 10) the Office of Management and Budget (OMB) for legislative coordination and clearance.

If you do not furnish the information requested on this form, the USPTO may not be able to process and/or examine your submission, which may result in termination of proceedings, abandonment of the application, and/or expiration of the patent.

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re *Ex Parte* Reexamination of:	)	Attorney Dkt. No.: 15384.0019-00000
U.S. Patent No. 10,209,953	)	Requester: Google LLC
Issued: February 19, 2019	)	Group Art Unit: To Be Assigned
Named Inventor: Nicholas A. J. Millington	)	Examiner: To Be Assigned
Control Number: To Be Assigned	)	
Filed: 2026/08/06	)	
Title: PLAYBACK DEVICE	)	

Mail Stop *Ex Parte* Reexam
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Dear Commissioner:

REQUEST FOR *EX PARTE* REEXAMINATION

Google LLC ("Requester") respectfully requests *ex parte* reexamination of claims 1, 4-9, 12-14, 18-20, 22-25, and 28-30 of U.S. Patent No. 10,209,953 B2 ("the '953 patent," Ex. A), assigned to Sonos, Inc. ("Patent Owner"). Prior art references, including at least Janevski, Balassanian, Okamura, Kawamura, and Muchow, present substantial new questions of patentability and render claims 1, 4-9, 12-14, 18-20, 22-25, and 28-30 of the '953 patent unpatentable under 35 U.S.C. § 103. Requester respectfully requests reexamination of the '953 patent under 35 U.S.C. §§ 301-307 and 37 C.F.R. § 1.510 *et seq.* and issuance of a reexamination certificate cancelling claims 1, 4-9, 12-14, 18-20, 22-25, and 28-30.

In accordance with 37 C.F.R. § 1.510(b), this Request includes:

(1) A statement pointing out each substantial new question of patentability based on prior patents and printed publications.

(2) An identification of every claim for which reexamination is requested, and a detailed explanation of the pertinency and manner of applying the cited prior art to every claim for which reexamination is requested. For each statement of the patent owner and accompanying information submitted pursuant to [37 C.F.R.] § 1.501(a)(2) which is relied upon in the detailed explanation, the request must explain how that statement is being used to determine the proper meaning of a patent claim in connection with the prior art applied to that claim and how each relevant claim is being interpreted. If appropriate, the party requesting reexamination may also point out how claims distinguish over cited prior art.

(3) A copy of every patent or printed publication relied upon or referred to in paragraph (b) (1) and (2) of this section accompanied by an English language translation of all the necessary and pertinent parts of any non-English language patent or printed publication.

(4) A copy of the entire patent including the front face, drawings, and specification/claims (in double column format) for which reexamination is requested, and a copy of any disclaimer, certificate of correction, or reexamination certificate issued in the patent. All copies must have each page plainly written on only one side of a sheet of paper.

(5) A certification that a copy of the request filed by a person other than the patent owner has been served in its entirety on the patent owner at the address as provided for in [37 C.F.R.] § 1.33(c). The name and address of the party served must be indicated. If service was not possible, a duplicate copy must be supplied to the Office.

(6) A certification by the third party requester that the statutory estoppel provisions of 35 U.S.C. [§] 315(e)(1) or 35 U.S.C. [§] 325(e)(1) do not prohibit the requester from filing the ex parte reexamination request.

LISTING OF CLAIMS

Claim 1	
[1pre]	A method carried out by a first zone player, the method comprising:
[1a]	receiving a request to enter into a synchrony group with at least a second zone player that is communicatively coupled with the first zone player over a local area network (LAN);
[1b]	in response to receiving the request to enter into the synchrony group, entering into the synchrony group with the second zone player, wherein the first zone player is selected to begin operating as a slave of the synchrony group and the second zone player is selected to begin operating as a master of the synchrony group, and wherein the first zone player operates in accordance with a clock time that differs from a clock time of the second zone player;
[1c]	after beginning to operate as the slave of the synchrony group:
[1d]	receiving, from the second zone player over the LAN, clock timing information that comprises at least one reading of the clock time of the second zone player;
[1e]	based on the received clock timing information, determining a differential between the clock time of the first zone player and the clock time of the second zone player;
[1f]	receiving, from the second zone player over the LAN, (a) audio information for at least a first audio track and (b) playback timing information associated with the audio information for the first audio track that comprises an indicator of a first future time, relative to the clock time of the second zone player, at which the first and second zone players are to initiate synchronous playback of the audio information for the first audio track;
[1g]	updating the first future time to account for the determined differential between the clock time of the first zone player and the clock time of the second zone player; and
[1h]	when the clock time of the first zone player reaches the updated first future time, initiating synchronous playback of the received audio information with the second zone player.
Claim 4	
4.	The method of claim 1, wherein the determined differential between the clock time of the first zone player and the clock time of the second zone player comprises an initial differential between the clock time of the first zone player and the clock time of the second zone player, and wherein the method further comprises, while the first zone player is operating as a slave of the synchrony group: after determining the initial differential between the clock time of the first zone player and the clock time of the second zone player, receiving, from the second zone player over the LAN, updated clock timing information that includes at least one updated reading of the clock time of the second zone player; and based on the updated timing information, determining an updated differential between the clock time of the first zone player and the clock time of the second zone player.

Claim 5	
5.	The method of claim 1, further comprising, while the first zone player is operating as a slave of the synchrony group: receiving, from the second zone player over the LAN, a command to adjust an individual volume of the first zone player; and in response to receiving the command, adjusting the individual volume of the first zone player.
Claim 6	
6.	The method of claim 1, wherein the method further comprises: while operating as the slave of the synchrony group, receiving, from the second zone player over the LAN, control information that enables the first zone player to begin operating as the master of the synchrony group; and in response to receiving the control information, transitioning from operating as the slave of the synchrony group to operating as the master of the synchrony group.
Claim 7	
[7pre]	A first zone player comprising:
[7a]	a network interface that is configured to provide an interconnection with at least one data network;
[7b]	a clock that is configured to provide a clock time of the first zone player;
[7c]	at least one processor;
[7d]	a tangible, non-transitory computer-readable medium; and
[7e]	program instructions stored on the tangible, non-transitory computer-readable medium that are executable by the at least one processor to cause the first zone player to perform functions comprising:
[7f]	receiving a request to enter into a synchrony group with at least a second zone player that is communicatively coupled with the first zone player over a local area network (LAN);
[7g]	in response to receiving the request to enter into the synchrony group, entering into the synchrony group with the second zone player, wherein the first zone player is selected to begin operating as a slave of the synchrony group and the second zone player is selected to begin operating as a master of the synchrony group, and wherein the clock time of the first zone player differs from a clock time of the second zone player;
[7h]	after beginning to operate as the slave of the synchrony group:
[7i]	receiving, from the second zone player over the LAN, clock timing information that comprises at least one reading of the clock time of the second zone player;
[7j]	based on the received clock timing information, determining a differential between the clock time of the first zone player and the clock time of the second zone player;
[7k]	receiving, from the second zone player over the LAN, (a) audio information for at least a first audio track and (b) playback timing information associated with the audio information for the first audio track that comprises an indicator of a first future time, relative to the clock time of the second zone player, at which the first

	and second zone players are to initiate synchronous playback of the audio information for the first audio track;
[7l]	updating the first future time to account for the determined differential between the clock time of the first zone player and the clock time of the second zone player; and
[7m]	when the clock time of the first zone player reaches the updated first future time, initiating synchronous playback of the received audio information with the second zone player.
Claim 8	
8.	The first zone player of claim 7, wherein receiving the request to enter into the synchrony group with at least the second zone player comprises: receiving the request to enter into the synchrony group with at least the second zone player over the LAN from one or both of (a) a controller device that is communicatively coupled to the first zone player over the LAN and (b) the second zone player.
Claim 9	
9.	The first zone player of claim 7, wherein entering into the synchrony group with the second zone player comprises: receiving, from the second zone player over the LAN, a notification that the second zone player is to begin operating as the master of the synchrony group and the first zone player is to begin operating as the slave of the synchrony group.
Claim 12	
12.	The first zone player of claim 7, wherein receiving the audio information for the first audio track from the second zone player over the LAN comprises: receiving a series of frames that each include a respective portion of the received audio information for the first audio track.[1]
Claim 13	
13.	The first zone player of claim 12, wherein a first frame in the series of frames includes the indicator of the first future time.
Claim 14	
14.	The first zone player of claim 13, wherein the playback timing information further comprises, for each subsequent frame in the series of frames: an indicator of a respective future time, relative to the clock time of the second zone player, at which the frame is to be synchronously played back by the first and second zone players.

[1] The Certificate of Correction applied to claim 12, deleting "the obtained audio information" and replacing it with "the received audio information." Ex. B, 3792, 3801.

Claim 18	
18.	The first zone player of claim 7, wherein the determined differential between the clock time of the first zone player and the clock time of the second zone player comprises an initial differential between the clock time of the first zone player and the clock time of the second zone player, and wherein the first zone player further comprises program instructions stored on the tangible, non-transitory computer-readable medium that are executable by the at least one processor to cause the first zone player to perform the following functions while operating as the slave of the synchrony group: after determining the initial differential between the clock time of the first zone player and the clock time of the second zone player, receiving, from the second zone player over the LAN, updated clock timing information that includes at least one updated reading of the clock time of the second zone player; and based on the updated timing information, determining an updated differential between the clock time of the first zone player and the clock time of the second zone player.
Claim 19	
19.	The first zone player of claim 18, further comprising program instructions stored on the tangible, non-transitory computer-readable medium that are executable by the at least one processor to cause the first zone player to perform the following functions while operating as the slave of the synchrony group: receiving, from the second zone player over the LAN, (a) audio information for a second audio track and (b) playback timing information associated with the received audio information for the second audio track that comprises an indicator of a second future time, relative to the clock time of the second zone player, at which the first and second zone players are to initiate synchronous playback of the audio information for the second audio track; updating the second future time to account for the updated differential between the clock time of the first zone player and the clock time of the second zone player; and when the clock time of the first zone player reaches the updated second future time, initiating synchronous playback of the received audio information for the second audio track with the second zone player.
Claim 20	
20.	The first zone player of claim 7, further comprising program instructions stored on the tangible, non-transitory computer-readable medium that are executable by the at least one processor to cause the first zone player to perform the following functions while operating as the slave of the synchrony group: receiving, from the second zone player over the LAN, a command to terminate playback of the first audio track; and in response to receiving the command to terminate, terminating playback of the received audio information for the first audio track.

Claim 22	
22.	The first zone player of claim 7, further comprising program instructions stored on the tangible, non-transitory computer-readable medium that are executable by the at least one processor to cause the first zone player to perform the following functions while operating as the slave of the synchrony group: receiving, from the second zone player over the LAN, a command to adjust an individual volume of the first zone player; and in response to receiving the command, adjusting the individual volume of the first zone player.
Claim 23	
23.	The first zone player of claim 7, further comprising program instructions stored on the tangible, non-transitory computer-readable medium that are executable by the at least one processor to cause the first zone player to perform the following functions: while operating as the slave of the synchrony group, receiving, from the second zone player over the LAN, control information that enables the first zone player to begin operating as the master of the synchrony group; and in response to receiving the control information, transitioning from operating as the slave of the synchrony group to operating as the master of the synchrony group.
Claim 24	
24.	The first zone player of claim 7, further comprising program instructions stored on the tangible, non-transitory computer-readable medium that are executable by the at least one processor to cause the first zone player to perform the following functions: while operating as the slave of the synchrony group, receiving a request to disengage from the synchrony group; in response to receiving the request to disengage from the synchrony group, disengaging from the synchrony group and transitioning from operating as the slave of the synchrony group to operating as a standalone zone player.
Claim 25	
[25pre]	Tangible, non-transitory computer-readable storage media, wherein the tangible, non-transitory computer-readable storage media is provisioned with software that is executable to cause a first zone player to perform functions comprising:
[25a]	receiving a request to enter into a synchrony group with at least a second zone player that is communicatively coupled with the first zone player over a local area network (LAN);
[25b]	in response to receiving the request to enter into the synchrony group, entering into the synchrony group with the second zone player, wherein the first zone player is selected to begin operating as a slave of the synchrony group and the second zone player is selected to begin operating as a master of the synchrony group, and wherein the first zone player operates in accordance with a clock time that differs from a clock time of the second zone player;

[25c]	after beginning to operate as the slave of the synchrony group:
[25d]	receiving, from the second zone player over the LAN, clock timing information that comprises at least one reading of the clock time of the second zone player;
[25e]	based on the received clock timing information, determining a differential between the clock time of the first zone player and the clock time of the second zone player;
[25f]	receiving, from the second zone player over the LAN, (a) audio information for at least a first audio track and (b) playback timing information associated with the audio information for the first audio track that comprises an indicator of a first future time, relative to the clock time of the second zone player, at which the first and second zone players are to initiate synchronous playback of the audio information for the first audio track;
[25g]	updating the first future time to account for the determined differential between the clock time of the first zone player and the clock time of the second zone player; and
[25h]	when the clock time of the first zone player reaches the updated first future time, initiating synchronous playback of the received audio information with the second zone player.
Claim 28	
28.	The tangible, non-transitory computer-readable media of claim 25, wherein the determined differential between the clock time of the first zone player and the clock time of the second zone player comprises an initial differential between the clock time of the first zone player and the clock time of the second zone player, and wherein the tangible, non-transitory computer-readable media is provisioned with further software that is executable to cause the first zone player to perform additional functions comprising, while operating as a slave of the synchrony group: after determining the initial differential between the clock time of the first zone player and the clock time of the second zone player, receiving, from the second zone player over the LAN, updated clock timing information that includes at least one updated reading of the clock time of the second zone player; and based on the updated timing information, determining an updated differential between the clock time of the first zone player and the clock time of the second zone player.
Claim 29	
29.	The tangible, non-transitory computer-readable media of claim 25, wherein the tangible, non-transitory computer-readable media is provisioned with further software that is executable to cause the first zone player to perform additional functions comprising, while operating as a slave of the synchrony group: receiving, from the second zone player over the LAN, a command to adjust an individual volume of the first zone player; and in response to receiving the command, adjusting the individual volume of the first zone player.

Claim 30	
30.	The tangible, non-transitory computer-readable media of claim 25, wherein the tangible, non-transitory computer-readable media is provisioned with further software that is executable to cause the first zone player to perform additional functions comprising: while operating as the slave of the synchrony group, receiving, from the second zone player over the LAN, control information that enables the first zone player to begin operating as the master of the synchrony group; and in response to receiving the control information, transitioning from operating as the slave of the synchrony group to operating as the master of the synchrony group.

TABLE OF EXHIBITS

(1) Certificate of Service to Patent Owner.
(2) Information Disclosure Statement and Form PTO/SB/08.

Exhibits

The '953 Patent, Expert Declaration, and Prosecution History

Ex. A	U.S. Patent No. 10,209,953 B2 to Millington et al. ("the '953 patent")
Ex. B	Prosecution History of the '953 Patent
Ex. C	Declaration of David Anderson
Ex. D	Curriculum Vitae of David Anderson

Prior Art

PA-1	U.S. Patent No. 7,269,338 to Janevski, filed December 11, 2001, issued September 11, 2007 ("Janevski")
PA-2	U.S. Patent Application Publication No. 2003/0221161 to Balassanian, filed December 17, 2002, published November 27, 2003 ("Balassanian")
PA-3	U.S. Patent No. 6,751,228 B1 to Okamura, filed March 21, 2000, granted June 15, 2004 ("Okamura")
PA-4	Certified Translation of WO 2003/003659A1 to Kawamura, filed June 25, 2002, published January 9, 2003 ("Kawamura")[2]
PA-5	U.S. Patent No. 7,421,478 to Muchow, filed March 7, 2002, granted September 2, 2008 ("Muchow")
PA-6	WO 2003/003659A1 to Kawamura (Original Japanese)
PA-7	U.S. Patent Application Publication No. 2004/0068747 to Robertson, filed January 15, 2003, published April 8, 2004("Robertson")

Litigation Documents

Ex. E-1	Complaint in *Certain Audio Players and Controllers, Components Thereof, and Products Containing Same,* Inv. No. 337-TA-1191 (Jan. 7, 2020)
Ex. E-2	Initial Determination in *Certain Audio Players and Controllers, Components Thereof, and Products Containing Same,* Inv. No. 337-TA-1191 (Aug. 13, 2021)
Ex. E-3	Claim Construction Order in *Certain Audio Players and Controllers, Components Thereof, and Products Containing Same,* Inv. No. 337-TA-1191 (Sept. 25, 2020)

[2] PA-4 is a certified translation of the original Japanese version of Kawamura, which is submitted herewith as PA-6.

Ex. F-1	*Sonos, Inc. v. Implicit, LLC*, IPR2018-00766, Paper 1 (P.T.A.B.) (Mar. 9, 2018)
Ex. F-2	*Sonos, Inc. v. Implicit, LLC*, IPR2018-00767, Paper 1 (P.T.A.B.) (Mar. 9, 2018)
Ex. F-3	*Ex Parte Rourk*, Appeal No. 2019-003250 (P.T.A.B. May 31, 2019)

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C. Okamura (U.S. Patent No. 6,751,228) (PA-3) 10

D. Kawamura (WIPO Publication WO 2003/003659A1) (PA-4) 12

E. Muchow (U.S. 7,421,478) (PA-5) 15

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1. Claim 5. The method of claim 1, further comprising, while the first zone player is operating as a slave of the synchrony group: receiving, from the second zone player over the LAN, a command to adjust an individual volume of the first zone player; and in response to receiving the command, adjusting the individual volume of the first zone player. 80

2. Claim 22. The first zone player of claim 7, further comprising program instructions stored on the tangible, non-transitory computer-readable medium that are executable by the at least one processor to cause the first zone player to perform the following functions while operating as the slave of the synchrony group: receiving, from the second zone player over the LAN, a command to adjust an individual volume of the first zone player; and in response to receiving the command, adjusting the individual volume of the first zone player. 82

3. Claim 29. The tangible, non-transitory computer-readable media of claim 25, wherein the tangible, non-transitory computer-readable media is provisioned with further software that is executable to cause the first zone player to perform additional functions comprising, while operating as a slave of the synchrony group: receiving, from the second zone player over the LAN, a command to adjust an individual volume of the first zone player; and in response to receiving the command, adjusting the individual volume of the first zone player. 83

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1. Claim 6. The method of claim 1, wherein the method further comprises: while operating as the slave of the synchrony group, receiving, from the second zone player over the LAN, control information that enables the first zone player to begin operating as the master of the synchrony group; and in response to receiving the control information, transitioning from operating as the slave of the synchrony group to operating as the master of the synchrony group. 83

2. Claim 23. The first zone player of claim 7, further comprising program instructions stored on the tangible, non-transitory computer-readable medium that are executable by the at least one processor to cause the first zone player to perform the following functions: while operating as the slave of the synchrony group, receiving, from the second zone player over the LAN, control information that enables the first zone player to begin operating as the master of the synchrony group; and in response to receiving the control information, transitioning from operating as the slave of the synchrony group to operating as the master of the synchrony group..... 86

3. Claim 30. The tangible, non-transitory computer-readable media of claim 25, wherein the tangible, non-transitory computer-readable media is provisioned with further software that is executable to cause the first zone player to perform additional functions comprising: while operating as the slave of the synchrony group, receiving, from the second zone player over the LAN, control information that enables the first zone player to begin operating as the master of the synchrony group; and in response to receiving the control information, transitioning from operating as the slave of the synchrony group to operating as the master of the synchrony group. 87

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I. Overview of the '953 Patent

The '953 patent is titled "Playback Device" and discloses "synchronizing operations among a number of digital data processing devices that are regulated by independent clocking devices." Ex. A, cover, 2:40-43. The '953 patent's earliest claimed priority date is July 28, 2003. Ex. A, code (63). The '953 patent expired on April 1, 2024, because it claims priority to a first non-provisional application filed on April 1, 2004.

A. The '953 Specification

The '953 patent relates to "synchronizing operations among a plurality of independently-clocked digital data processing devices." Ex. A, 1:30-34; Ex. C, ¶46. Those devices form a "synchrony group 20" with "a master device 21" and "slave devices 22(1) through … 22(g) … which synchronously play an audio program." Ex. A, 8:5-10; Ex. C, ¶46.

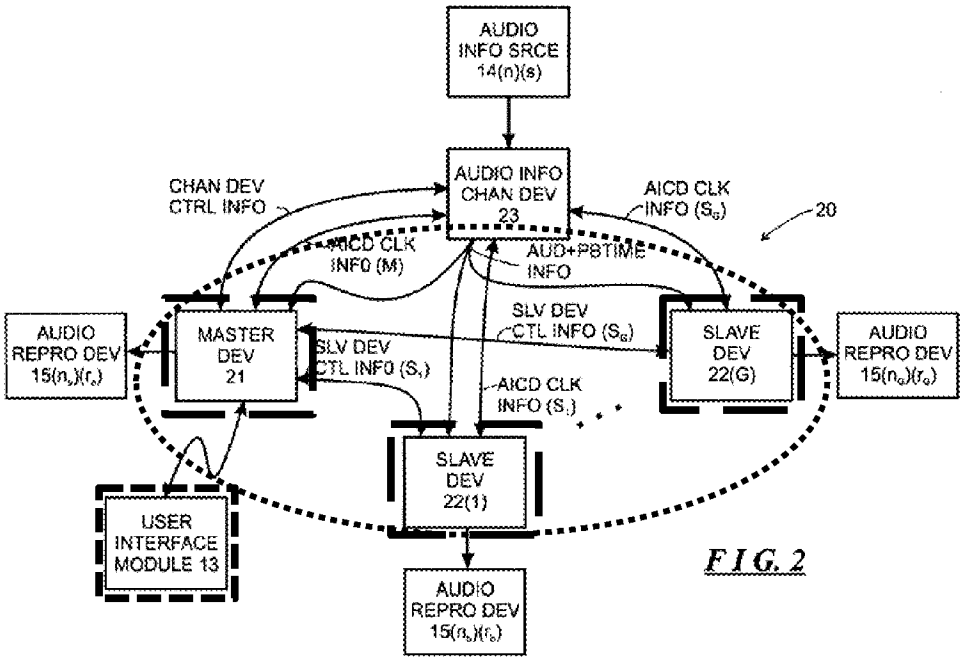


FIG. 2

Ex. A, FIG. 2 (zone players boxed in long dashes, user interface/controller boxed in short dashes, synchrony group circled in dots).[3]

The master device 21 controls "the slave devices 22(g) in the synchrony group 20." Ex. A, 8:34-38; Ex. C, ¶47. It "receives control information from the user interface module 13 for controlling the synchrony group." Ex. A, 9:8-12; Ex. C, ¶47. The control information can "terminate playing," "skip to the next track" or "re-order tracks in a play list of tracks" to be played by the synchrony group 20. Ex. A, 9:30-39; Ex. C, ¶47.

Each of master device 21, slave devices 22(g), and audio information channel device 23 "utilizes a zone player 11(n) depicted in FIG. 1." Ex. A, 8:10-15; Ex. C, ¶48.

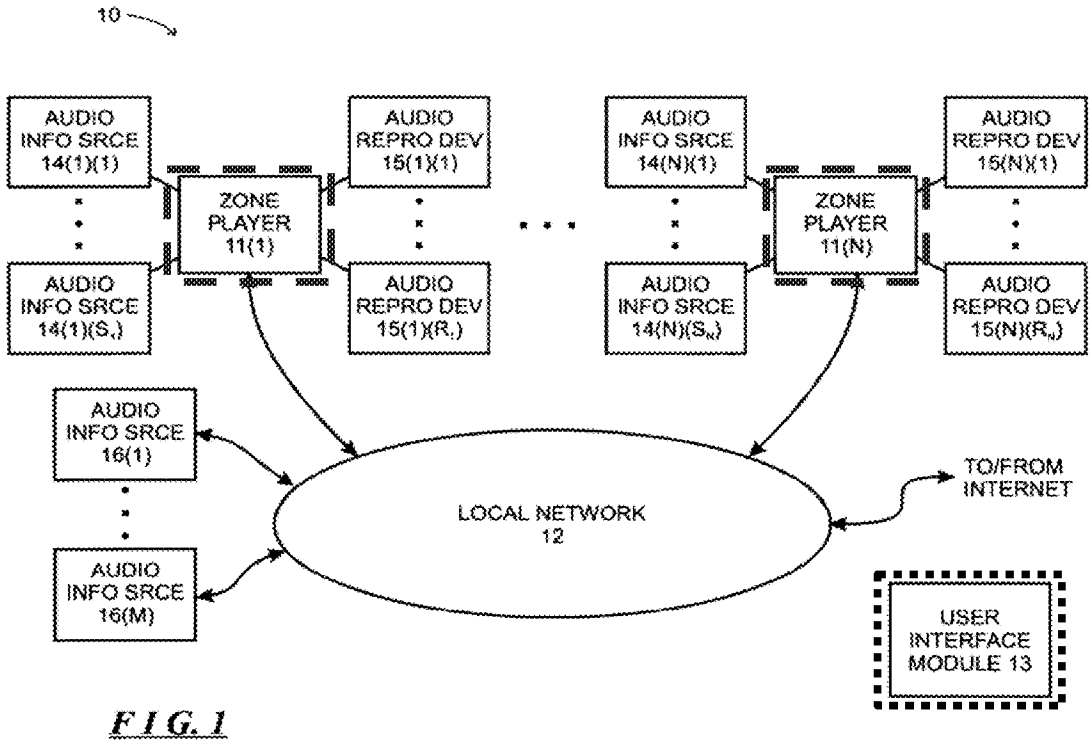


FIG. 1

Ex. A, FIG. 1 (zone players boxed in dashes; controller/user interface module boxed in dots).

[3] All annotations and emphases added unless otherwise indicated.

The zone players "receive[] audio information" from a source 14(n)(s) and "provide[] playback and/or forward the audio information, along with playback timing information, over the local network 12 to other zone players." Ex. A, 5:17-22; Ex. C, ¶48. The zone players can "synchronize their playback … so that the zone players … provide the same audio program at the same time." Ex. A, 5:35-43; Ex. C, ¶48.

B. Summary of Prosecution History

Shortly after filing the application for the '953 patent, the Applicant submitted fourteen Information Disclosure Statements with over 1,000 documents cited on them—all on one day. Ex. B, 3373-3519. The Examiner cited none of these references, and no other prior art, at any point during prosecution.

Instead, the Examiner allowed the application after one Applicant interview and the filing of a terminal disclaimer over U.S. 9,195,258. Ex. B, 3540. In the Notice of Allowance, the Examiner stated that the reasons for allowance included:

> *none of the qualifying prior art references of record, taken alone or in combination, disclose or reasonably suggest: a combination of elements as claimed in independent claim 25 including receiving, from the second zone player over the LAN, (a) audio information for at least a first audio track and (b) playback timing information associated with the audio information for the first audio track that comprises an indicator of a first future time, relative to the clock time of the second zone player, at which the first and second zone players are to initiate synchronous playback of the audio information for the first audio track; updating the first future time to account for the determined differential between the clock time of the first zone player and the clock time of the second zone player; and when the clock time of the first zone player reaches the updated first future time, initiating synchronous playback of the received audio information with the second zone player. Other independent claims 1 and 19 recite similar features.*

Ex. B, 3537-3538 (emphasis in original).

C. Level of Ordinary Skill in the Art

A person of ordinary skill in the art ("ordinary artisan") at the time of the purported invention would have had the equivalent of a four-year degree from an accredited institution in computer science, computer engineering, electrical engineering, or an equivalent thereof, and approximately four years of professional experience in the fields of networking and network-based systems or applications, such as consumer audio systems, or an equivalent level of skill, knowledge, and experience. Ex. C, ¶50. Additional education could substitute for professional experience, and significant work experience could substitute for formal education. *Id.*

D. Claim Construction

In a reexamination proceeding involving claims of an expired patent, claim construction pursuant to the principle set forth by the court in *Phillips v. AWH Corp.*, 415 F.3d 1303, 1316 (Fed. Cir. 2005) (words of a claim "are generally given their ordinary and customary meaning" as understood by a person of ordinary skill in the art in question at the time of the invention) should be applied. *See, e.g.*, M.P.E.P. § 2258. This is because the expired claims are not subject to amendment. *Id.* As discussed above, the '953 patent expired on April 1, 2024. *Supra* § I.

During a U.S. International Trade Commission (ITC) investigation involving the '953 patent,[4] the ITC construed "zone player," "network interface," "playback timing information," "clock timing information," "a synchrony group," "independently clocked," and "local area network" as follows:

[4] Ex. E-1 (Certain Audio Players and Controllers, Components Thereof, and Products Containing Same, Inv. No. 337-TA-1191).

Term	Relevant Asserted Claims in the ITC	Construction
"zone player"	7, 14, 22-24	"data network device configured to process and output audio"
"network interface"	17	"physical component of a device that provides an interconnection with a data network"
"playback timing information"	7, 14	"information indicating when the audio information [content] is to be played back"
"clock time information"	7	"information representing a time value indicated by a device's clock"
"a synchrony group"	7, 22-24	"a set of two or more zone players that are to play the same audio program synchronously"
"independently clocked"	17	"operating in accordance with their own respective clocks during synchronous playback"
"local area network"	7, 22, 23	"a data communications network spanning a limited geographical area, such as an office, an entire building, or industrial park"

Ex. E-3, 6-8, 15-20 (ITC Claim Construction Order); Ex. E-2, 58 (ITC Initial Determination).

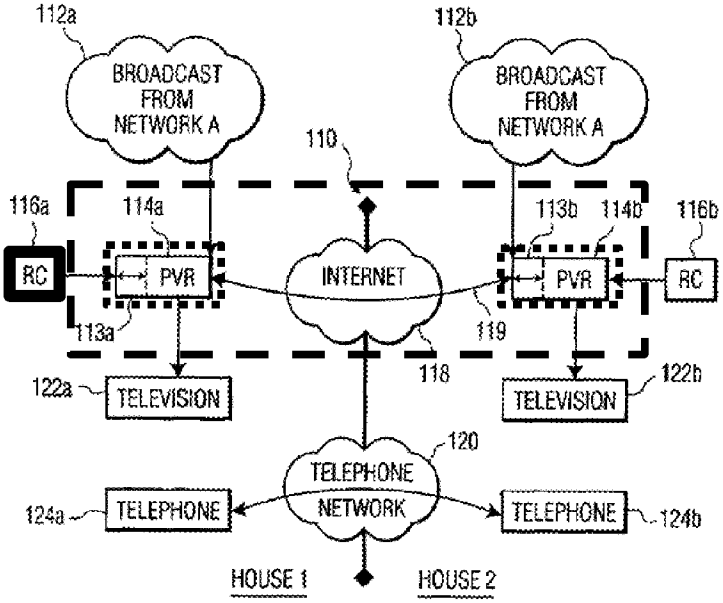
This Request applies the plain meaning (i.e., the ordinary and customary meaning) of all claim terms as they would have been understood by one skilled in the art at the time of the alleged invention and consistent with the specification. Ex. C, ¶¶51-53. However, in the alternative, the Request also applies the claim constructions from the ITC investigation to the extent the terms were construed as other than the plain meaning. Ex. C, ¶¶51-53. No matter which construction is applied, all claims are invalid over the identified art.

II. Identification of Prior Art

A. Janevski (U.S. Patent No. 7,269,338) (PA-1)

Janevski was filed on December 11, 2001, as U.S. Patent Application No. 10/014,225 and issued on Sep. 11, 2007. PA-2, Cover, codes (21), (22), and (45). Janevski qualifies as prior art to the '953 patent at least under pre-AIA 35 U.S.C. §102(e). Janevski was not considered during examination of the '953 patent.

Janevski relates to "synchronizing playback of two or more digital streams based on renderable content of those streams." PA-1, 1:8-11; Ex. C, ¶54. Janevski discloses "a synchronized viewing session" including Personal Video Recorders (PVRs) 114a, b. PA-1, 6:4-18; Ex. C, ¶54. "[B]roadcasts 112a, b" are received by "receivers 113a, b" in "PVRs 114a, b" and can include "aural" signals. PA-1, 6:13-16; 16:34-43; Ex. C, ¶54.



PA-1, FIG. 1 (Janevski's synchronized viewing session boxed using dashes, Janevski's first and second PVRs boxed using dots, and Janevski's remote control boxed using a solid line). Janevski says the broadcasts may be "merely visual or merely aural or both visual and aural," disclosing that they may include image and/or audio data. PA-1, 16:34-43.

A remote control or other input device "allow[s] the user to operate the personal video recorder 114a, b remotely." Janevski, 6:39-44, 7:4-9; Ex. C, ¶55. This allows the user to perform "a control function (e.g., start, pause, rewind, fast forward)." PA-1, 7:31-36, Abstract; Ex. C, ¶55. When the user "executes a control function," it "changes the watching mode." PA-1, 8:48-52; Ex. C, ¶55.

Upon execution of each control function, "the initiator [PVR] directs all participants [PVRs] … to synchronize their playbacks to that of the initiator, whereby all playbacks are synchronized and maintain[ed] in synchronization." PA-1,7:29-36, Abstract; Ex. C, ¶56. "To ensure that the PVRs 114a, b participating in the session remain synchronous," the initiator periodically sends a status message. Janevski, 7:36-50; Ex. C, ¶56. When "the role of initiator is handed off," "another participant 114b assumes the role of initiator PVR 114a." PA-1, 6:16-25, 7:51-57, 15:32-42; Ex. C, ¶56.

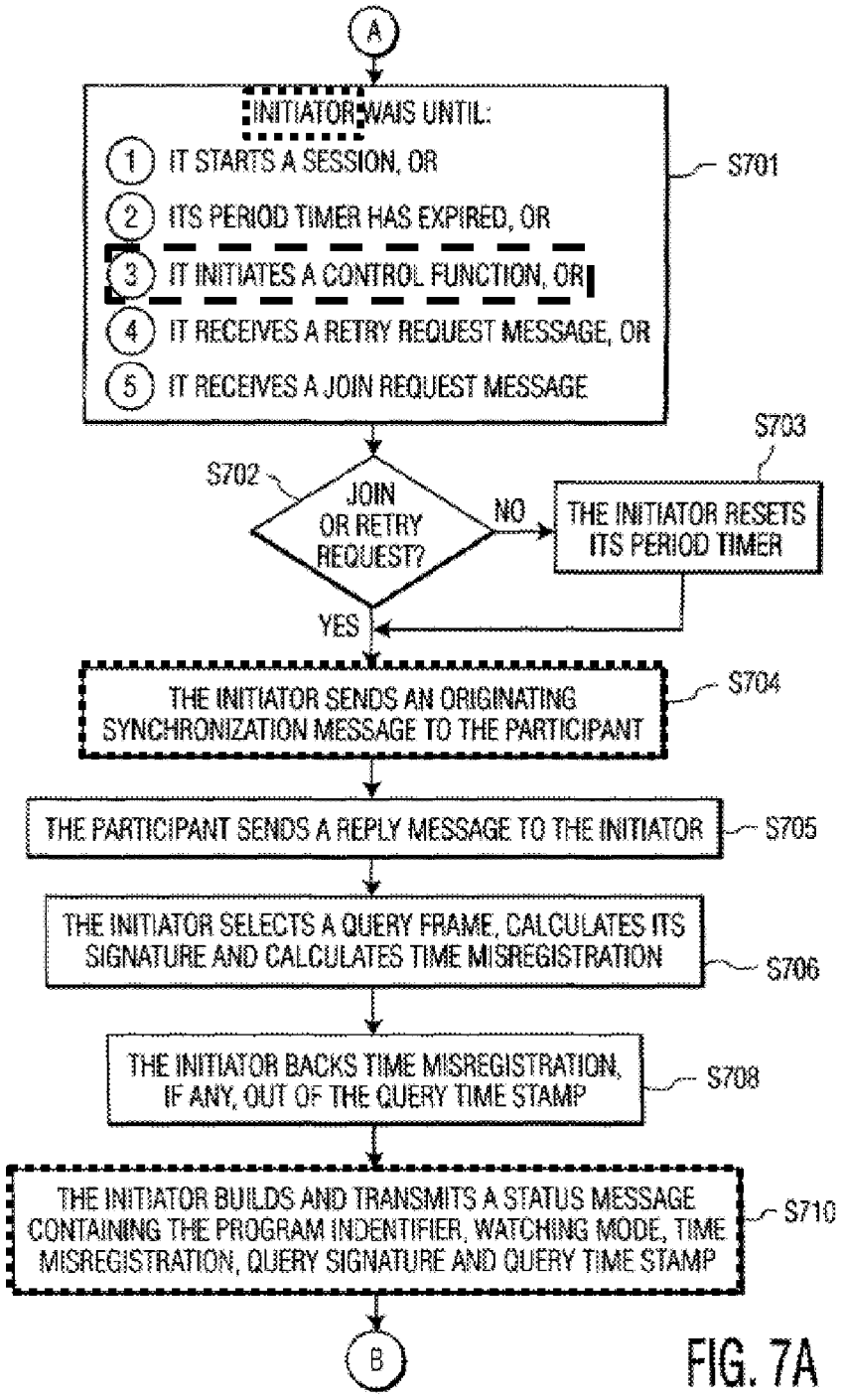


FIG. 7A

PA-1, FIG. 7A (initiator role functions boxed in dots and the user-provided control function boxed in dashes).

Janevski is analogous art to the '953 patent because it is directed to the same field: controlling synchronous audio playback. *Compare* Ex. A, 1:30-50, 2:40-52, *with* PA-1, 1:5-11, 5:3-43; Ex. C, ¶57.

B. Balassanian (U.S. Pub. No. 2003/0221161) (PA-2)

Balassanian was filed on December 17, 2002, as U.S. Patent Application No. 10/322,335 and published on November 27, 2003. PA-2, Cover, codes (21), (22), and (43). Balassanian qualifies as prior art to the '953 patent at least under pre-AIA 35 U.S.C. §102(e).

Balassanian relates to "rendering of content at multiple rendering devices in a synchronized manner." PA-2, ¶2. Balassanian warns that "[v]arious rendering devices, however, may have different time domains that make the rendering of the multimedia presentation in a synchronized manner difficult." PA-2, ¶4. Balassanian seeks to resolve this problem by comparing time differentials between independently clocked rendering devices to modify when playback occurs. PA-2, ¶¶16, 19-26, 29, 32-34, claims 1, 2, 6, 10; Ex. C, ¶58.

Balassanian discloses "synchronizing the rendering of content at various rendering devices" over a local area network (LAN). PA-2, ¶¶16, 29; Ex. C, ¶59. Balassanian teaches that its synchronization methods may apply to various types of rendering devices, including "the video rendering device 102, the audio rendering device 103, and the text rendering device 104 via communications link 105." PA-2, ¶20. The methods also apply "to multiple audio rendering devices." *Id.* Balassanian discloses that "[v]arious communications links may be used, such as the Internet, a local area network, a wide area network, or a point-to-point dial-up connection." PA-2, ¶29; Ex. C, ¶59.

Balassanian discloses that "each rendering device has a device time and a rendering time." PA-2, ¶16; Ex. C, ¶60. The device time is "the time as indicated by a designated clock (e.g., system

clock) of the rendering device." PA-2, ¶16. And the rendering time is "the time represented by the amount of content that has been rendered by that rendering device." PA-2, ¶16. Each rendering time of content at a rendering device "has a 'corresponding' device time, which is the device time at which the rendering time occurred." PA-2, ¶16. To accomplish synchronization, Balassanian's system designates one rendering device as a master and the rest of the devices as slaves. PA-2, ¶16. Once the roles have been assigned,

> [t]he master rendering device sends a message with its rendering time and corresponding device time to the slave rendering devices. Each slave rendering device, upon receiving the message from the master rendering device, determines whether it is synchronized with the master rendering time. If not, the slave rendering device adjusts the rendering of its content to compensate for the difference between the master rendering time and the slave rendering time. A slave rendering device can determine the amount it is out of synchronization by comparing its slave rendering time at a certain slave device time to the master rendering time at that same device time.

PA-2, ¶16; *see also id.*, ¶¶19-26, 29 ("calculates a rendering time differential that is used to adjust the rendering of the content"), 32-34. Balassanian further discloses that "[t]he rendering devices exchange device time information so that the rendering devices can account for the differences in the time domains of the other rendering devices." PA-2, ¶19, claims 1, 2, 6, 10; Ex. C, ¶60.

Balassanian is analogous art to the '953 patent because it is directed to the same field: controlling synchronous audio playback. *Compare* Ex. A, 1:30-50, 2:40-52, *with* PA-2, ¶¶16, 19-26, 29, 32-34; Ex. C, ¶61.

C. Okamura (U.S. Patent No. 6,751,228) (PA-3)

Okamura was filed on March 21, 2000, as U.S. Patent Application No. 09/532,835 and issued on June 15, 2004. PA-3, Cover, codes (21), (22), and (45). Okamura qualifies as prior art

to the '953 patent at least under pre-AIA 35 U.S.C. §102(e). Okamura was not considered during examination of the '953 patent.

Okamura relates to synchronizing audio data reproduction between transmitting and receiving nodes. PA-3, Abstract; Ex. C, ¶62. The transmitting node functions as a master, generating a timestamp "on the basis of the time provided by the cycle timer," which "specifies the reproduction time at the receiving side." PA-3, 1:42-56. The receiving node, acting as a slave, uses "an offset setting section that sets an offset time" "and adds the offset time to a time indicated by the timestamp," and initiates playback "when the time of the timestamp added with the offset time coincides with a current time indicated by an internal cycle timer." PA-3, 5:53-67; Ex. C, ¶62.

FIG.6 (a)

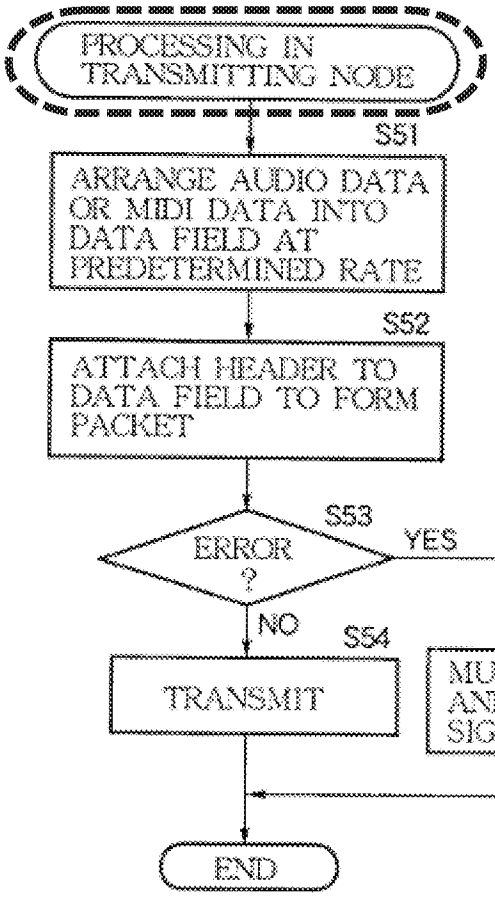
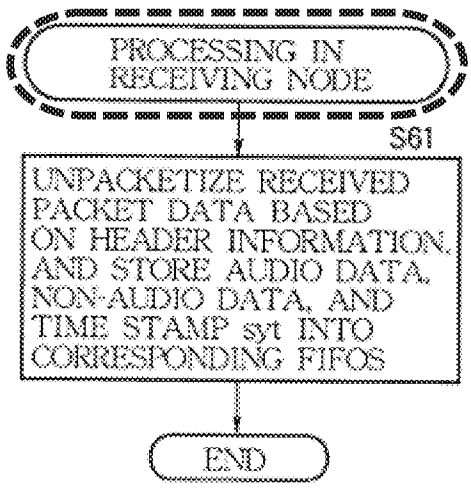


FIG.6 (b)



PA-3, FIGS. 6(a) and 6(b) (processing in the transmitting and receiving nodes boxed using dashes).

Okamura is analogous art to the '953 patent because it is directed to the same field: controlling synchronous audio playback. *Compare* Ex. A, 1:30-50, 2:40-52, *with* PA-3, 1:42-56, 2:49-67, 3:1-19, 5:53-67, 24:7-25:57; Ex. C, ¶63.

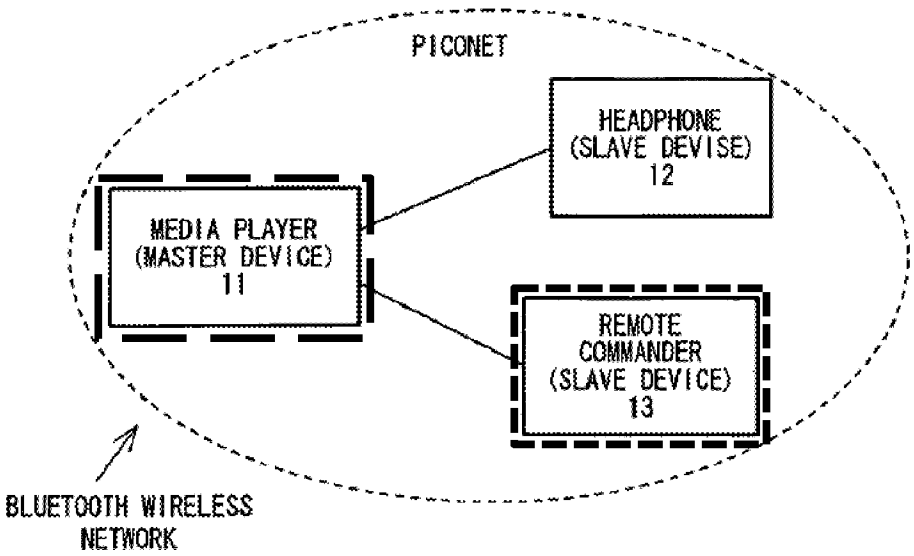
D. Kawamura (WIPO Publication WO 2003/003659A1) (PA-4)

Kawamura was filed on June 25, 2002, as PCT/JP02/06322, and published on Jan. 9, 2003. PA-2, Cover, codes (21), (22), and (43). Kawamura qualifies as prior art to the '953 patent at least under pre-AIA 35 U.S.C. §§102(a), (b).

Kawamura "relates to a wireless communication control apparatus, a wireless communication control method, a storage medium, and a program for exchanging device operation commands between devices within a piconet formed by a single master device and a plurality of slave devices, as with Bluetooth." PA-4, 1; Ex. C, ¶64.

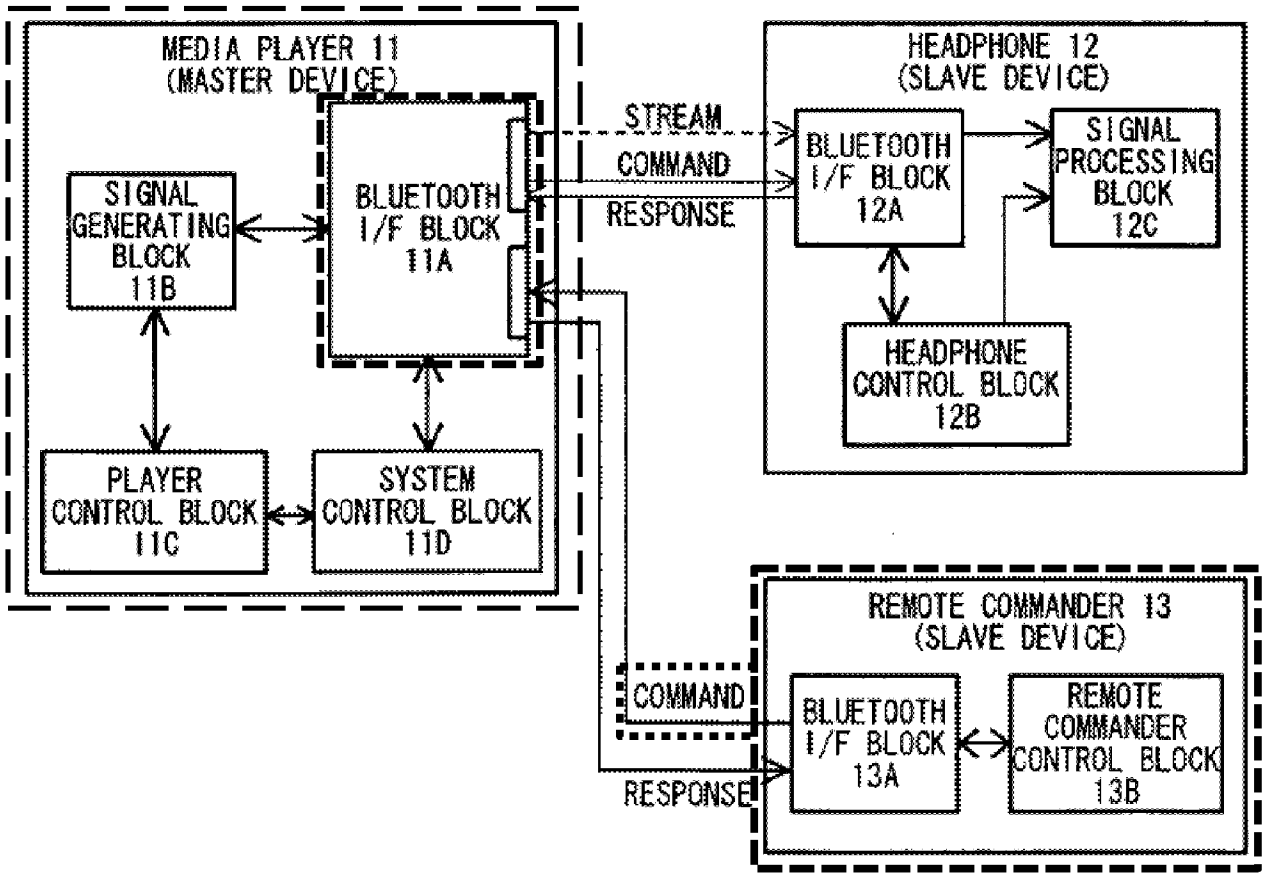
Figure 1 of Kawamura shows a "media player 11 …, headphones 12 …, and a remote controller 13 … are present within the piconet 10." PA-4, 16; Ex. C, ¶65. "The remote controller 13 is a device for remotely controlling playback, such as play (play), stop (stop), pause (pause), fast forward (fast forward), rewind (rewind), and the like, of media by the media player 11" using a "Bluetooth interface." PA-4, 16-17; Ex. C, ¶65.

F I G. 1



PA-4, FIG. 1 (Kawamura's remote control and Bluetooth network boxed using dashes, Kawamura's media player (e.g., a stereo unit, PA-4, 3-4) boxed using long dashes).

F I G. 2



PA-4, FIG. 2 (Kawamura's media player (e.g., a stereo unit, PA-4, ¶3-4) boxed using long dashes, Kawamura's Bluetooth network interface and remote control boxed using short dashes, and Kawamura's command sent by the remote control to the media player over the Bluetooth network boxed using dots).

Kawamura is analogous art to the '953 patent because it is directed to the same field: controlling synchronous audio playback. *Compare* Ex. A, 1:30-50, 2:40-52, *with* PA-4, 16-17, 36; Ex. C, ¶66. Kawamura is also reasonably pertinent to a problem faced by the inventor: controlling playback devices. *Compare* Ex. A, 1:30-50, 2:40-52, *with* PA-4, ¶¶16-17, 36; Ex. C, ¶66.

E. Muchow (U.S. 7,421,478) (PA-5)

Muchow was filed on March 7, 2002, as U.S. Patent Application No. 10/094,552 and issued on September 2, 2008. PA-5, Cover, codes (21), (22), and (45). Muchow qualifies as prior art to the '953 patent at least under pre-AIA 35 U.S.C. §102(e). Muchow was not considered during examination of the '953 patent.

Muchow relates to "applications using a master-slave configuration" and a "method that can provide efficient failure recovery … between nodes of a networked computer system." PA-5, 1:9-15, 2:51-53; Ex. C, ¶67. Each "node" is "a distinct processing element of a computer system."PA-5, 3:61-67. "Each node 102 includes one or more processors and one or more external network interfaces." *Id.*, 4:28-35.

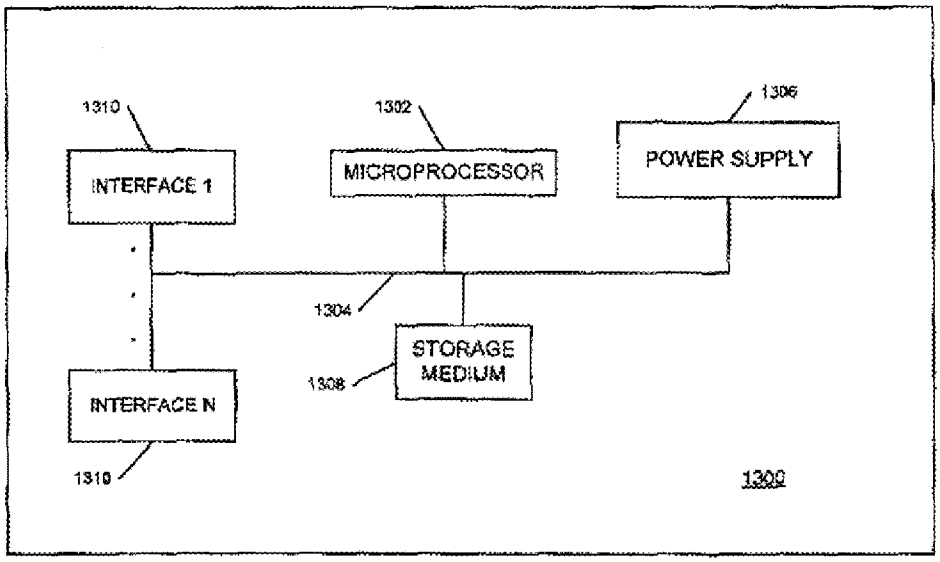


FIG. 13

Id., FIG. 13.

A node that "run[s]" "an application instance is considered a 'master' for that application instance, and all other nodes 102 are considered 'slaves.'" *Id.*, 4:54-58. An "application instance"

is "any node function … whose communications relating to master-slave operation are being managed by a main task." *Id.*, 5:10-14.

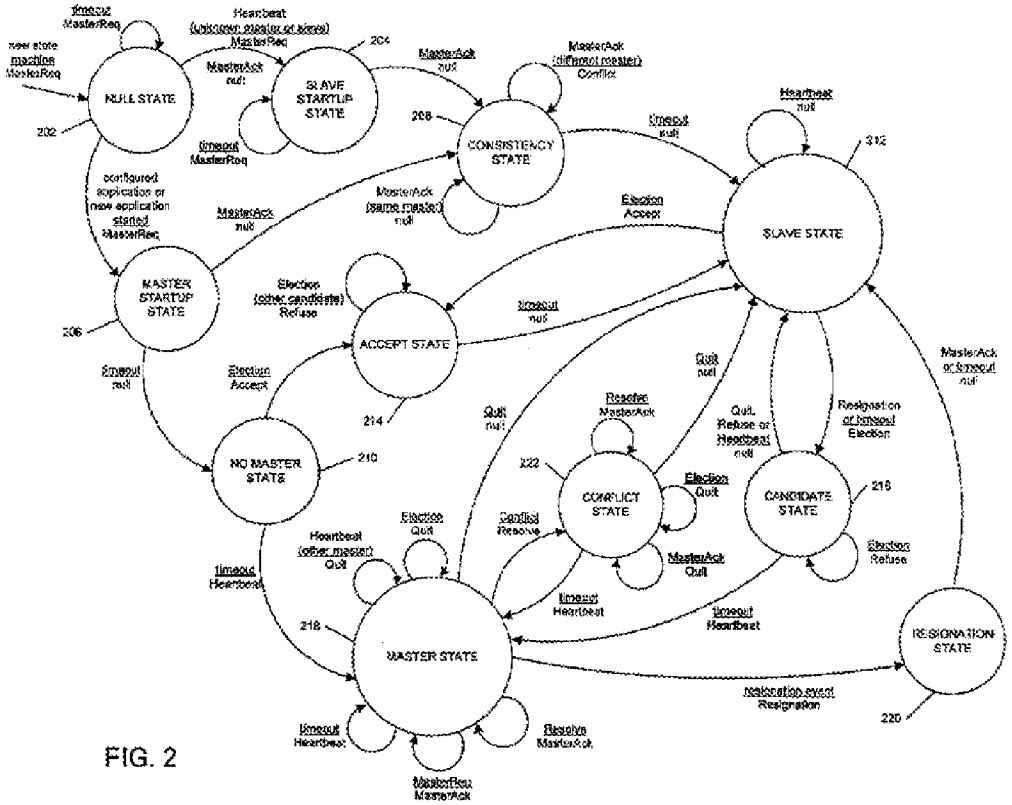


FIG. 2

Id., FIG. 2.

A "monitor task" "monitor[s] the operation of the node itself and/or various functions or components associated with the node (e.g., the CPU …)." *Id.*, 26:56-67. "[T]he monitor task … determines the health and/or operational status," and "determines whether a problem … indicates that the health and/or operational status of one or more application instances is degraded." *Id.*, 27:15-60.

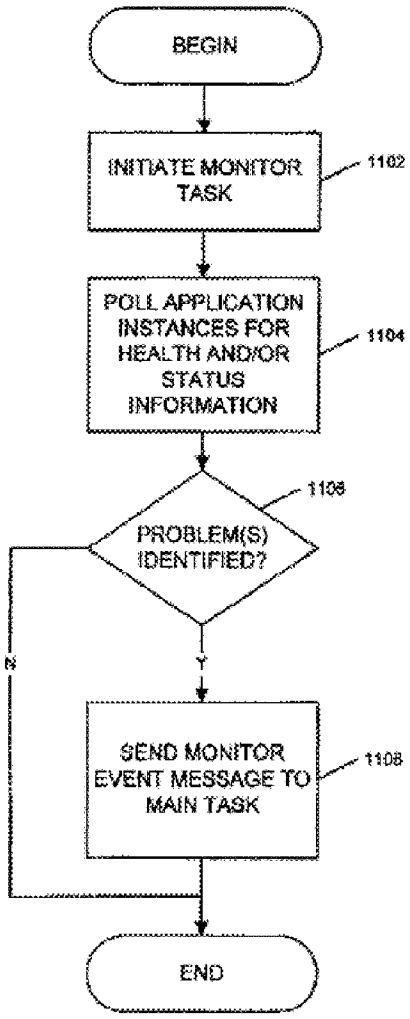
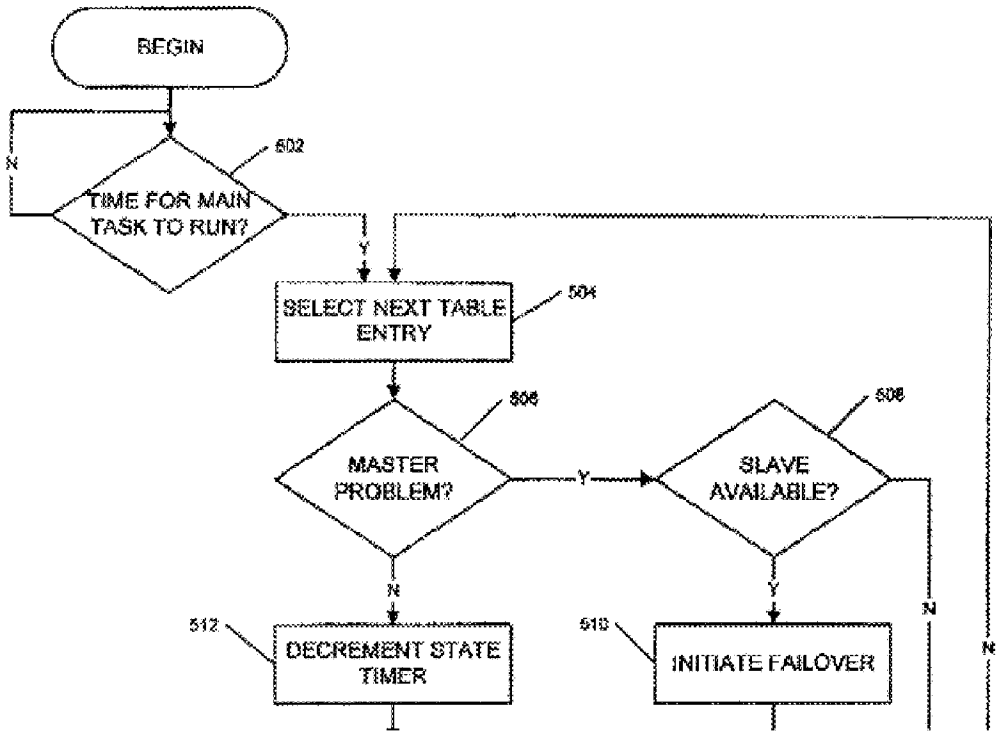


FIG. 11

Id., FIG. 11.

Next, "[a] determination is then made, … whether … a problem has occurred with the master." *Id.*, 16:7-28. If "a problem has occurred, then a determination is made, … whether a slave is available to take over master operations." *Id.*, 16:29-41. "If a slave is available, then the node initiates a failover." *Id.*



Id., FIG. 5 (excerpted).

Muchow is analogous art to the '953 patent at least because it is reasonably pertinent to a problem faced by the inventor: synchronized operation between master and slave devices. *Compare* Ex. A, 8:41-9:4, 13:25-49, *with* PA-5, 1:42-46, 5:53-57, 24:7-12; Ex. C, ¶71. "Because of the matter with which [Muchow] deals" (fault tolerant master-slave systems), Muchow "logically would have commended itself to an inventor's attention in considering his problem." *In re ICON Health and Fitness, Inc.*, 496 F.3d 1374, 1379-80 (Fed. Cir. 2007).

III. Identification of Claims for Reexamination and Proposed Rejections

Google respectfully requests reexamination and cancellation of claims 1, 4-9, 12-14, 18-20, 22-25, and 28-30 of the '953 patent based on the following proposed rejections:

- **Proposed Rejection 1**: Claims 1, 4, 7-9, 12-14, 18-20, 24, 25, and 28 are obvious over Janevski, Balassanian, and Okamura under 35 U.S.C. § 103.
- **Proposed Rejection 2**: Claims 5, 22, and 29 are obvious over Janevski, Balassanian, Okamura, and Kawamura under 35 U.S.C. § 103.

- **Proposed Rejection 3**: Claims 6, 23, and 30 are obvious over Janevski, Balassanian, Okamura, and Muchow under 35 U.S.C. § 103.

A listing of claims, with limitations identified by reference number, appears after the Table of Contents.

IV. Identification of Substantial New Questions of Patentability

The applied references raise substantial new questions of patentability because they disclose and suggest the limitations relied on by the Examiner when allowing the '953 patent claims. During prosecution, the Examiner identified the following limitation as allegedly not disclosed by the prior art:

> *receiving, from the second zone player over the LAN, (a) audio information for at least a first audio track and (b) playback timing information associated with the audio information for the first audio track that comprises an indicator of a first future time, relative to the clock time of the second zone player, at which the first and second zone players are to initiate synchronous playback of the audio information for the first audio track; updating the first future time to account for the determined differential between the clock time of the first zone player and the clock time of the second zone player; and when the clock time of the first zone player reaches the updated first future time, initiating synchronous playback of the received audio information with the second zone player.*

Ex. B, 3537-3538 (emphasis in original).

The prior art combinations in this Request were not considered during prosecution of the '953 patent claims or in a subsequently filed petition for inter partes review. These combinations raise substantial new questions of patentability because they disclose all limitations of the '953 patent claims—including the added and purportedly novel limitations—which would have rendered each claim obvious.

A. The Combination of Janevski, Balassanian, and Okamura Raises SNQs—Proposed Rejection 1 Would Have Rendered Obvious Claims 1, 4, 7-9, 12-14, 18-20, 24, 25, and 28

Proposed Rejection 1 shows how Janevski in view of Balassanian and Okamura would have rendered obvious claims 1, 4, 7-9, 12-14, 18-20, 24, 25, and 28, raising substantial new questions of patentability. This combination, which has not previously been before the Patent Office, either during examination or IPR, discloses or suggests every limitation of the challenged claims. *See infra* Section V.A.

Taken together, Janevski, Balassanian, and Okamura disclose or suggest networked playback devices configured to act as a synchrony group, with one device operating as a slave and another device operating as a master. Ex. C, ¶¶73-77, 80-82, 86-92. For example, Janevski discloses multiple playback devices, such as "personal video recorders (PVRs)," that "precisely synchronize their time-shifted viewing." PA-1, 5:3-5. One PVR, acting in an "initiator" role, controls synchronous playback of audio and video by one or more other, "participant" PVRs. PA-1, Abstract, 6:4-26, 15:43-47. These playback devices act as members of a synchrony group, with the initiator acting as a master and the participant acting as a slave. Ex. C, ¶¶ 81-82, 87-88. Specifically, "[t]he initiator directs all participants, … upon execution of each control function, … to synchronize their playbacks to that of the initiator, whereby all playbacks are synchronized and maintain[ed] in synchronization." PA-1, Abstract. Balassanian discloses "synchronizing the rendering of content at various rendering devices" over a local area network (LAN). PA-2, ¶¶16, 29; Ex. C, ¶¶80, 83-85. Balassanian teaches that its synchronization methods may apply to various types of rendering devices. PA-2, ¶20. Balassanian further discloses that "[v]arious communications links may be used, such as the Internet, a local area network, a wide area network, or a point-to-point dial-up connection." PA-2, ¶16.

Janevski, Balassanian, and Okamura each also disclose a slave device that receives timing and audio information from a master device. Ex. C, ¶¶94-120. Janevski discloses "synchronization" control where the initiator PVR transmits audio information accompanied with timing information to each participant PVR. PA-1, 7:39-50, 1:53-2:5. The initiator PVR transmits a "status message" to the participant PVR which includes both "[1] an indication of the time into the program[] and [2] information characteristic of content of a digital bit stream." *Id.* And Balassanian discloses that its rendering devices exchange "device time" and "rendering time" information. PA-2, ¶¶21-26, 29, 32-34, Figs. 2, 8-10, claims 1, 2, 6, 10. The slave receiving device uses this device time (the time indicated by a designated clock of the rendering device) and/or rendering time (the time represented by the amount of content that has been rendered by that rendering device) to calculate time differentials, which are then applied to offset the rendering of content such that playback is synchronized with a master device. PA-2, ¶¶21-26, 29, 32-34, Figs. 2, 8-10, claims 1, 2, 6, 10. Okamura discloses a time synchronization scheme where a "transmitting node [] arranges audio data of one or more channels into a data field and arranges the associated time stamp into a syt field so as to form a packet composed of the data field and the syt field, and sends the packet." PA-3, 1:42-56, 5:53-67.

Importantly, the prior art in Proposed Rejection 1 discloses and suggests that the received timing information identifies a future time for synchronous playback—timing information the Examiner cited as missing from the prior art when allowing the '953 patent claims. *See* Ex. B, 3537-3538; Ex. C, ¶¶111-126. Okamura, for example, teaches this "future time" element because it discloses adding an "offset time to a time indicated by the timestamp" to control "synchronous reproduction." PA-3, 5:53-67. And Balassanian discloses the use of device time differentials as a mechanism to offset the rendering of content. PA-2, ¶¶21-26, 29, 32-34, claims 1, 2, 6, 10. Given

these teachings, a reasonable Examiner would consider the teachings of Janevski, Okamura, and Balassanian detailed in Proposed Rejection 1 relevant in deciding patentability, at least because the specific supposedly missing limitations are taught by Okamura and Balassanian. *See* M.P.E.P. § 2242(I) (there is a substantial new question of patentability where (A) a reasonable examiner would consider the teaching of the prior art to be important in deciding whether or not at least one claim is patentable; and (B) the same question of patentability as to the claim has not been decided by the Office); Ex. C, ¶¶111-126.

As set forth in Section V.A below, Janevski in view of Balassanian and Okamura also discloses or suggests all limitations of the other independent claims 7 and 25 and dependent claims 4, 8, 9, 12-14, 18-20, 24, and 28, rendering them obvious just like the independent claims. Ex. C, ¶¶127-169.

It would have been obvious to modify Janevski's PVR system and method in view of Balassanian's and Okamura's disclosures of alternative timing information. Ex. C, ¶¶73-77, 84-85, 91-92, 96-97, 102-110, 115-120, 124-126. Indeed, Janevski discloses that "[t]ime synchronization can be implemented in many different known ways" and Janevski's system "is not limited to any particular time synchronization method." PA-1, 8:53-54, 13:22-24. Further, like the '953 patent, Janevski, Balassanian, and Okamura are in the technical field of controlling synchronous audio playback. *Compare* Ex. A, 1:25-45, 2:35-48, *with* PA-1, 1:5-11, 5:3-43; PA-2, ¶¶16; claims 1, 2, 6, 10; PA-3, 1:42-56, 2:49-3:18, 5:53-67, 24:7-25:59. A reasonable Examiner would consider the teachings of Janevski, Balassanian, and Okamura, as detailed in Proposed Rejection 1, relevant in deciding patentability, at least because Janevski provides a straightforward base reference for incorporation of Balassanian's and Okamura's time synchronization schemes. *See* M.P.E.P. § 2242(I).

Indeed, Patent Owner itself has relied on Janevski's disclosure to challenge Balassanian's patents. Specifically, Patent Owner filed two IPRs against Implicit LLC on March 9, 2018, challenging U.S. Patent Nos. 7,391,791 and 8,942,252. *See* Ex. F-1 (*Sonos, Inc. v. Implicit, LLC*, IPR2018-00766, Paper 1 (P.T.A.B.)); Ex. F-2 (*Sonos, Inc. v. Implicit, LLC*, IPR2018-00767, Paper 1 (P.T.A.B.)). Patent Owner asserted that "[a]s with [Implicit LLC's] Patent[s], Janevski is directed to 'techniques for synchronizing playback of two or more digital streams based on renderable content of those streams.'" Ex. F-1, 35-36 (quoting PA-1, 1:8-11), 37; Ex. F-2, 33-35.

In these IPRs, Patent Owner admitted that Janevski's "disclosure provides a clear motivation to combine Janevski with prior art references disclosing existing 'time synchronization' mechanisms …" (in that case, mechanisms that relate to smoothing functions). Ex. F-2, 66 (quoting PA-1, 8:53-64, 13:21-22), 71. Consistent with Patent Owner's admissions regarding Janevski's disclosure and motivation to combine, an ordinary artisan would have been motivated to combine Janevski, Balassanian, and Okamura for similar reasons—Balassanian and Okamura provide an advantageous, known, and alternative method of time synchronization and Janevski contemplates that any known way of time synchronization could have been used in its system.

Contrary to the Examiner's reasons for allowance, the prior art combined in Proposed Rejection 1 includes references (Okamura and Balassanian) that teach the future time limitation that the Examiner allegedly could not find in the prior art. Ex. B, 3537-3538; Ex. C, ¶¶111-126. For example, Okamura teaches the "future time" limitation because it describes adding an "offset time to a time indicated by the timestamp" to control "synchronous reproduction." PA-3, 5:53-67. And Balassanian teaches the use of device time differentials as a mechanism to offset the rendering of content. PA-2, ¶¶21-26, 29, 32-34, claims 1, 2, 6, 10. As such, a reasonable Examiner would consider the teachings of Okamura, detailed in Proposed Rejection 1, relevant in deciding

patentability, at least because the specific supposedly missing limitations are taught by Okamura and Balassanian. See M.P.E.P. § 2242(I) (there is a substantial new question of patentability where (A) a reasonable examiner would consider the teaching of the prior art to be important in deciding whether or not at least one claim is patentable; and (B) the same question of patentability as to the claim has not been decided by the Office).

Janevski and Okamura were not before the Examiner during prosecution of the '953 patent. *See* Ex. A, Cover Page (References Cited). The patent (U.S. 7,391,791) that issued from Balassanian was listed on an IDS, but it was never cited by the Examiner or applied in any manner during prosecution of the '953 patent. *See* Ex. A, Cover Page (References Cited); Ex. B, 3430. There is thus no evidence that the Office has evaluated Balassanian's teachings alone. Even if it had, the Office has never considered the combination of Janevski, Balassanian, and Okamura.

To the extent that Patent Owner argues a substantial new question is not present because Balassanian's patent was involved in invalidity theories presented to the ITC and affirmed by the Federal Circuit, such arguments should be rejected. First, the ITC (and Federal Circuit) never considered the combination of Janevski, Balassanian, and Okamura. Ex. E-2, 84-90 (ITC Initial Determination). Second, Balassanian is presented in a different light because it is relied on to modify Janevski and not for any limitations that the ITC determined were not present in Balassanian (e.g., playback timing information). Ex. E-2, 84-90 (ITC Initial Determination). Third, the M.P.E.P. provides that "the existence of a final court decision that a claim has not been proven invalid in view of the same or different prior art does not necessarily mean that no new question is present, because of the different standards of proof employed by the federal district courts and the Office." M.P.E.P. § 2242(III); *In re Swanson*, 540 F.3d 1368, 1379 (Fed. Cir. 2008) ("a 'substantial new question of patentability' refers to a question which has never been considered by the PTO;

thus, a substantial new question can exist even if a federal court previously considered the question"). The "clear and convincing" standard of the ITC is higher than the preponderance of the evidence standard applied during ex parte reexamination. *Dome Patent v. Lee*, 799 F.3d 1372, 1378-79 (Fed. Cir. 2015) (finding that because the Patent Office reopens examination during ex parte reexamination, presumption of validity and "added burden" of clear and convincing evidence do not apply).

For at least these reasons, Janevski, Balassanian, and Okamura raise SNQs, not previously considered or decided by the Office, for claims 1, 4, 7-9, 12-14, 18-20, 24, 25, and 28.

B. The Combination of Janevski, Balassanian, Okamura, and Kawamura Raises SNQs—Proposed Rejection 2 Would Have Rendered Obvious Claims 5, 22, and 29

Proposed Rejection 2 applies Janevski in view of Balassanian, Okamura, and Kawamura, which would have rendered obvious '953 patent claims 5, 22, and 29. Janevski, Balassanian, Okamura, and Kawamura present SNQs at least for the same reasons discussed above in Section IV.A. They also render obvious receiving commands to adjust a volume of a zone player, as in claims 5, 22, and 29, raising additional SNQs for these claims. Ex. C, ¶¶170-176.

Together, Janevski, Balassanian, Okamura, and Kawamura disclose and suggest "receiving … a command to adjust an individual volume of the first zone player." Ex. C, ¶¶170-176. Janevski discloses that control functions such as "start, pause, rewind, fast forward" are sent between PVRs, but does not expressly discuss volume adjustment. PA-1, 6:18-22; 8:42-52. Okamura discloses that volume is a playback condition. PA-3, 20:67-21:14. And Kawamura teaches volume adjustment as another playback function by disclosing that "the remote commander 13 remotely controls the media player 11 for executing play control such as play, stop, pause, fast forward and rewind and remotely controls the headphone 12 for executing sound

volume adjustment (volume up/down) for example." PA-4, 16-17; Ex. C, ¶172. The headphone control block 12B realizes sound output functions such as volume up, volume down, and mute. PA-4, 18; Ex. C, ¶172. The remote commander issues volume adjustment commands, which are transferred by the media player to the headphone for execution. PA-4, 20, 24; Ex. C, ¶172. As such, a reasonable Examiner would consider the teachings of Kawamura, detailed in Proposed Rejection 2, relevant in deciding patentability, at least because it supplies supposedly missing limitations.

An ordinary artisan would have been motivated to combine Kawamura's volume adjustment playback function with the playback functions disclosed and suggested by Janevski, Balassanian, and Okamura to implement a standard set of playback commands (including volume) in a synchronized playback system. Ex. C, ¶173. An ordinary artisan would have had a reasonable expectation of success in implementing volume controls because it would have involved the use of known techniques (volume control via remote input) in known systems (multi-device synchronized playback), to achieve predictable results (volume adjustment during synchronized playback). Ex. C, ¶173. Common sense would also have suggested controlling the volume of audio players. Ex. C, ¶173.

Like Janevski, Balassanian, and Okamura, Kawamura was not substantively applied by the Office during prosecution of the '953 patent. *See* Ex. A, Cover Page (References Cited). A related US publication (U.S. Pub. No. 2004/0048569) was listed on an IDS, but was never cited by the Examiner or applied in any manner during prosecution of the '953 patent. *See* Ex. A, Cover Page (References Cited); Ex. B, 1639. There is thus no evidence that the Office has evaluated Kawamura's teachings alone. In any case, the Office has never considered the combination of Janevski, Balassanian, Okamura, and Kawamura.

For at least these reasons, Janevski in view of Balassanian, Okamura, and Kawamura raises substantial new questions of patentability for claims 5, 22, and 29 that were not previously considered or decided by the Office.

C. The Combination of Janevski, Balassanian, Okamura, and Muchow Raises SNQs—Proposed Rejection 3 Would Have Rendered Obvious Claims 6, 23, and 30

Proposed Rejection 3 applies Janevski in view of Balassanian, Okamura, and Muchow, which would have rendered obvious '953 patent claims 6, 23, and 30. Janevski, Balassanian, Okamura, and Muchow present SNQs at least for the same reasons discussed above in Section IV.A. They also render obvious receiving commands to transition a device from operating as a slave to operating as the master, as in claims 6, 23, and 30, raising additional SNQs for these claims. Ex. C, ¶¶177-184.

Together, Janevski, Balassanian, Okamura, and Muchow disclose and suggest receiving "control information that enables the first zone player to begin operating as the master of the synchrony group" and in response to that information, "transitioning from operating as the slave of the synchrony group to operating as the master of the synchrony group." Ex. C, ¶¶177-184. Janevski discloses that its PVRs are configured to perform and switch between both master and slave roles. Ex. C, ¶178; *see, e.g.*, PA-1, 6:18-21 ("Initially, the 'initiator' is the PVR that starts the session, although that role is handed off to any PVR that, as directed by its user, performs a control function (e.g., stop, pause, fast forward, reverse)."), 15:32-47. While Balassanian and Okamura's systems assign master-slave roles to their devices, they do not expressly discuss role switching. Ex. C, ¶¶177-184. Muchow relates to providing disaster recovery for "applications using a master-slave configuration" on the nodes of a networked computer system. PA-5, 1:9-15, 2:51-53. Muchow's system "monitor[s] … for correct operation" by "check[ing]" (evaluating) "criteria"

(operational performance metrics) of "components associated with the node," such as the "CPU" (processor) or "network interface[]" (network interface). PA-5, 4:28-36, 5:3-14, 11:33-42, 26:56-62, 12:11-16, 27:1-21. Through this monitor-task feature, Muchow's master device is configured to send a slave device a resignation message, indicating that the slave should assume the role of the master. PA-5, 12:19-33, 16:36-38; Ex. C, ¶179.

"Because of the matter with which [Muchow] deals" (fault tolerant master-slave systems), Muchow "logically would have commended itself to an inventor's attention in considering his problem." *In re ICON Health and Fitness, Inc.*, 496 F.3d 1374, 1379-80 (Fed. Cir. 2007); Ex. C, ¶¶180-182. As such, a reasonable Examiner would consider the teachings of Muchow, detailed in Proposed Rejection 3, relevant in deciding patentability, at least because Muchow discloses the supposedly missing limitations. *See* M.P.E.P. § 2242(I).

An ordinary artisan would have been motivated to modify Janevski-Balassanian-Okamura at least based on Muchow's express teachings, which disclose that "it is important to maximize the availability of critical services" which "is achieved by using a fault tolerant system," such that when one "component fails, the fault is detected, and a redundant component takes over to correct the problem." PA-5, 1:19-31; Ex. C, ¶¶180-182. An ordinary artisan would have had a reasonable expectation of success in the combination because it would have merely used known features according to their known functions (Janevski's existing initiator/participant handoff) to achieve predictable results (Janevski's initiator PVR initiates the existing initiator/participant handoff after determining a fault occurred (as in Muchow)). Ex. C, ¶¶181-182.

Muchow, like Janevski and Okamura, was not cited to or considered by the Office during prosecution of the '953 patent. *See* Ex. A, Cover Page (References Cited).

Accordingly, Janevski in view of Balassanian, Okamura, and Muchow raises substantial new questions of patentability for claims 6, 23, and 30 that were not previously considered or decided by the Office.

D. Section 325(d) Does Not Apply Because the Office Has Not Previously Considered the Same or Substantially the Same Art or Arguments

There is no basis to deny this Request under § 325(d). Section 325(d) denial would be improper here because this Request presents new prior art, proposed grounds for rejection, and new patentability arguments. For example, Janevski, Okamura, and Muchow are new references that were never before the Office during prosecution of the '953 patent. Balassanian and Kawamura were never cited or analyzed by the Examiner. Further, the combinations and arguments in this Request also have never been previously presented to the Office.

The *Advanced Bionics* and *Becton Dickinson* framework used in *inter partes* reviews does not necessarily apply to *ex parte* reexaminations. *Advanced Bionics, LLC v. Med-El Elektromedizinische Geräte GmbH*, IPR2019-01469, Paper 6 (P.T.A.B. Feb. 13, 2020); *Becton, Dickinson & Co. v. B. Braun Melsungen AG*, IPR2017-01586, Paper 8 (P.T.A.B. Dec. 15, 2017). However, to the extent that the CRU nevertheless applies the *Advanced Bionics* and *Becton Dickinson* framework to this Request, Requester maintains that denial under § 325(d) is inapplicable as detailed below.

Under the *Advanced Bionics* step 1 and *Becton, Dickinson* factors (a), (b), and (d), the same or substantially the same prior art and arguments raised in this Request have not been previously presented to the Office. Janevski, Okamura, and Muchow are new references that were never before the Office during prosecution of the '953 patent. *See* Ex. A, Cover Page (References Cited). Balassanian and/or Kawamura were never cited or analyzed by the Examiner on the record during prosecution. And the combinations of Janevski, Balassanian, and Okamura further in view of

Kawamura or Muchow have never been before the Office. *See Kolbe & Kolbe Millwork Co. v. Sierra Pacific Indus.*, IPR2019-00933, Paper No. 14, 46 (P.T.A.B. Oct. 9, 2019) (finding that a previously considered reference does not warrant denial under § 325(d) where "[n]one of the other prior [art] … was considered by the Examiner, and certainly, none of the specific combinations presented here was considered").

In any combination, the Office has never considered the '953 claims in view of Okamura, which discloses the allegedly novel claim limitation: "*(a) audio information for at least a first audio track and (b) playback timing information associated with the audio information for the first audio track that comprises an indicator of a first future time*…." Ex. B, 3537-3538. Okamura discloses the packaging and transmission of audio data with a reproduction timestamp for that data. PA-3, 1:42-56, 5:53-67. Okamura further instructs that the slave device may add an offset to this reproduction timestamp to achieve synchronized playback. PA-3, 5:53-67, 6:38-59. The Office also did not consider how Balassanian teaches the use of time differentials to offset rendering times in slave rendering devices. PA-2, claims 1, 2, 6, 10, 16, ¶¶19, 21-27, 30, 31. Therefore, the Office has not considered arguments related to the purportedly novel limitation of the '953 patent presented in the proposed rejections.

Advanced Bionics step 2 and *Becton, Dickinson* factors (c), (e), and (f) further weigh against denying this Request. As discussed above, of the prior art relied on by this Request, Balassanian and Kawamura are the only references with related applications listed on IDSs during prosecution. Ex. A, Cover Page. These related applications, which were submitted along with hundreds of other references, were never cited by the Examiner or substantively considered during examination. This lack of consideration demonstrates material error because these references are material to the patentability of the challenged claims as detailed below in the proposed rejections.

Patent Owner's submission of an "extraordinarily large number of references cited on the IDS" counsels against applying § 325(d) to this Request. *Ecto World, LLC, et al v. Rai Strategic Holdings, Inc.*, IPR2024-01280, Paper 16, 8-15 (P.T.A.B. June 25, 2025) (Denied on other grounds). In *Ecto World*, the Office declined to deny an IPR petition under § 325(d) even though the specific references were cited on the face of the patent because the Patent Owners submitted over 1,000 references without specifying which were most pertinent to the prosecution. *Id.*

Similar facts exist here, where Patent Owner submitted references related to Balassanian and Kawamura among over 1,000 patent and patent publication references and hundreds of other non-patent literature references across fourteen IDSs, without identifying for the Examiner which were most pertinent. Ex. B, 1639 (disclosing Kawamura U.S. 2004/0048569), 3430 (disclosing Balassanian U.S. 7,391,791); Ex. A, cover page. As in *Ecto World*, "[o]ther than initials on a lengthy IDS, nothing in the record indicates that the Examiner substantively considered" Balassanian or Kawamura. IPR2024-01280, Paper 16, 13-14. Burdened with an exorbitant number of references, the Examiner did not conduct a meaningful review, resulting in overlooked teachings from at least Balassanian and Kawamura.

Thus, because Janevski, Okamura, and Muchow were never considered and Balassanian and Kawamura were not substantively considered by the Office during prosecution of the '953 patent alone or in combination, denial of this Request under § 325(d) would be inappropriate.

V. Detailed Explanation of the Proposed Rejections Applying the Prior Art to the '953 Patent Claims

A. Proposed Rejection 1: Claims 1, 4, 7-9, 12-14, 18-20, 24, 25, and 28 Are Obvious Over Janevski, Balassanian, and Okamura

As described in greater detail below, a person of ordinary skill in the art would have found it obvious to implement Janevski's system and method of synchronized playback on a local

network (as suggested by Balassanian), while using time stamps and time offsets to synchronize independently clocked devices (as suggested by Balassanian and Okamura). The ordinary artisan would have been motivated to make this combination. Ex. C, ¶72. And Janevski, Balassanian, and Okamura would have rendered obvious '953 claims 1, 4, 7-9, 12-14, 18-20, 24, 25, and 28.

1. Motivation to Combine Janevski, Balassanian, and Okamura with a Reasonable Expectation of Success

A person of ordinary skill in the art would have been motivated to use Janevski, Balassanian, and Okamura together because each discloses methods of synchronizing audio and/or video playback across devices. Janevski discloses a form of "synchronization" control for digital streams stored on two or more Personal Video Recorders (PVRs). This includes synchronizing the clock of a participant PVR to the clock of an initiator PVR, which then transmits audio information accompanied with playback timing information to the participant PVR. PA-1, 7:39-50, 1:53-2:5; Ex. C, ¶73. Balassanian also describes methods of synchronizing playback between independently clocked devices, disclosing that differences between rendering devices' clock times may be used to adjust the rendering times used by the devices. PA-2, ¶¶21-26, 29, 32-34, Figs. 2, 8-10, claims 1, 2, 6, 10; Ex. C, ¶73. Okamura similarly describes a process of synchronizing playback of audio on independently clocked nodes that exchange audio data and associated reproduction timestamps, which may be adjusted using an offset. PA-3, 1:42-56, 2:49-3:18, 5:53-67, 24:7-25:58; Ex. C, ¶73. These similarities would have encouraged an ordinary artisan to consider Janevski, Balassanian, and Okamura together. Ex. C, ¶73.

The rationale to modify Janevski with Balassanian and Okamura is expressly taught, suggested, and motivated by Janevski itself. Janevski discloses that "[t]ime synchronization can be implemented in many different known ways" and Janevski "is not limited to any particular time synchronization method." PA-1, 8:53-54, 13:22-23; Ex. C, ¶74. As Patent Owner has previously

recognized, "this disclosure provides a clear motivation to combine Janevski with prior art references disclosing existing 'time synchronization' mechanisms …" (in that case, mechanisms that relate to smoothing functions). Ex. F-2, 66 (quoting PA-1, 8:53-64, 13:21-22); Ex. C, ¶74. Patent Owner also recognized that an ordinary artisan would have been motivated to combine Janevski with other references that "disclose mechanisms for improving the accuracy of 'time synchronization' between nodes in a distributed network." Ex. F-2, 71; Ex. C, ¶74. Here, an ordinary artisan would have been motivated to combine Janevski, Balassanian, and Okamura for similar reasons—Balassanian and Okamura provide an advantageous known alternative method of time synchronization and Janevski contemplates using other known ways of time synchronization in its system. Ex. C, ¶74.

An ordinary artisan would have reasonably expected success in combining Balassanian's and Okamura's synchronization teachings with Janevski's multi-device synchronization framework to achieve more robust and scalable synchronous playback. Ex. C, ¶75. The references are all directed to synchronizing playback across audio visual devices in networked environments and use similar components to achieve similar goals. PA-1, 6:4-44; PA-2, ¶¶21-26, 29, 32-34, Figs. 2, 8-10, claims 1, 2, 6, 10; PA-3, 1:42-56, 5:48-67; Ex. C, ¶75. An ordinary artisan would have understood that modifying Janevski's PVRs to operate on a LAN with independent clocks and scheduled playback times would not require any specialized skill or have rendered the devices inoperable. Ex. C, ¶75.

Implementing Balassanian's and Okamura's teachings in Janevski's multi-device synchronization framework would have used known techniques (e.g., LANs, reference clocks, offset adjustments, and transmitting audio between devices) according to their known functions (predictive synchronization), to achieve predictable results (accurate future playback timing across

devices). Ex. C, ¶76. Indeed, because the PVRs are already configured to communicate through the Internet, the devices include network interfaces that would have been readily adjusted to operate on different networks. Ex. C, ¶76. An ordinary artisan would have further expected that such an adjustment would not have rendered the devices unsuitable for their original purpose because LANs may extend beyond a single household—Patent Owner's own construction of a LAN encompasses geographic areas as large as industrial parks. Ex. C, ¶76.

Additional rationales to combine Janevski with Balassanian and Okamura are discussed throughout the analysis below. Ex. C, ¶77.

2. Independent Claim 1

a. [1pre]: A method carried out by a first zone player, the method comprising:

Janevski discloses or renders obvious a *method carried out by a first zone player* because it teaches a "method for synchronizing presentation from bit streams based on their content" that is performed by personal video recorders (PVRs 114a, b). PA-1, 1:1-3, 2:6-16, 6:15-18, 13:22-23, 17:7-16, FIG. 1. An ordinary artisan would have understood that Janevski's PVR 114a and PVR 114b correspond to the claimed *zone players* because they are "data network device[s] configured to process and output audio." Ex. E-3, 6-8, 15-20. For example, Janevski's PVRs "play[] back respective, identical copies of a video," which indicates that they are configured to receive, process, and output "aural" information that is sent over at least "Internet network 118" (i.e., a data network). PA-1, 1:8-11, 2:6-15, 2:23-45, 16:33-43. Indeed, each "PVR" describes a zone player because PVRs are "playback" devices that "playback … renderable content," including "visual" and/or "aural" information (audio content). PA-1, Abstract, 1:8-11, 2:23-45, 5:29-32, 10:30-35, 15:22-26, 16:33-43; Ex. C, ¶¶78-79.

As discussed in greater detail below in [1b], Janevski's PVR 114b corresponds to the claimed *first zone player* because it initially assumes the participant, or slave, role. PA-1, 6:13-26, 7:25-50.

b. [1a]: receiving a request to enter into a synchrony group with at least a second zone player that is communicatively coupled with the first zone player over a local area network (LAN);

Janevski and Balassanian render obvious [1a] because Janevski discloses that PVR 114a (second zone player) sends PVR 114b (first zone player) a menu as a request to engage in synchronized playback over the Internet (PA-1, 1:13, 6:15-26, 7:4-15, 7:57-63, 8:42-47, 11:4-21, FIG. 1) and Balassanian teaches how synchronized playback between rendering devices may be performed over a local area network (LAN) (PA-2, ¶¶16, 20, 29). Ex. C, ¶¶80-85.

Janevski discloses or renders obvious *receiving a request to enter into a synchrony group with at least a second zone player* because Janevski describes that PVR 114b (first zone player (participant)) receives a menu from PVR 114a (second zone player (initiator)) that provides the option to join a synchronized viewing session with PVR 114a (second zone player). PA-1, 1:13, 6:15-26, 7:4-15, 7:57-63, 8:42-47, 11:4-21, FIG. 1; *see infra* § [1b] (discussing first/second designations). For example, Janevski discloses that a control command from a remote control or other "input device" connected to the initiator PVR 114a activates a menu for synchronized playback and sends the menu for synchronized playback to the other participants (i.e., *a request to enter into a synchrony group with at least a second zone player*). PA-1, 7:4-16; Ex. C, ¶81. In Janevski, "user 1 takes the lead as the 'initiator', user 1, via a remote control 116, via controls on the PVR 114a itself, … [which] would activate a menu for synchronized viewing on the PVR 114a." PA-1, 7:4-9; Ex. C, ¶81. Then, user 1 would respond to and send the menu. PA-1, 7:4-9; Ex. C, ¶81. "Resulting other menus would be sent to user 2." PA-1, 7:9-10; Ex. C, ¶81. User 2 would also

use a remote or other input device to engage with and respond to the menu and establish synchronous playback, entering a synchrony group.[5] PA-1, 7:4-24; Ex. C, ¶81.

Janevski further discloses that PVR 114a (*second zone player*) *is communicatively coupled with the* PVR 114b (*first zone player*). For example, Figure 1 illustrates the "synchronized viewing session," where "[t]he Internet 118 supplies the means 119 for communicating information between the PVRs 114a, b such that synchronization may be achieved." PA-1, 6:48-51; Ex. C, ¶82.

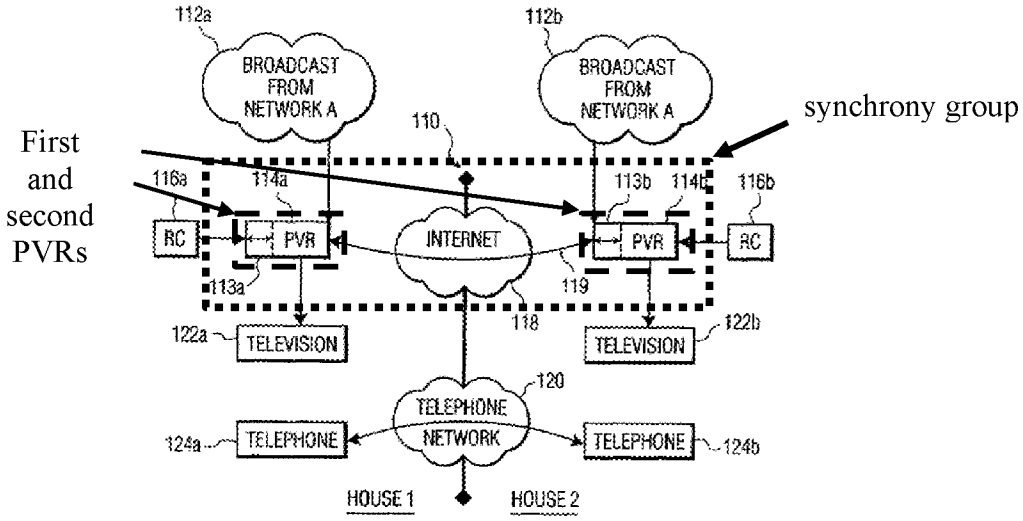


FIG. 1

[5] Requester applies the parties' agreed construction that "synchrony group" means "a set of two or more zone players that are to play the same audio program synchronously." Ex. E-3, 5-6. Regardless of whether the claim provides an objective boundary, an ordinary artisan would have understood that Janevski discloses playing back audio program "synchronously" because the prior art uses the same term. For example, Janevski discloses a "synchronized viewing session" and directing participant zone players "to synchronize their playbacks to that of the initiator, whereby all playbacks are synchronized and maintain in synchronization." PA-1, Abstract, 6:16-18. Janevski discloses the entire agreed construction because each "PVR" in Janevski's "synchronized viewing session" is a zone player which "view[s] the same program" in synchrony. PA-1, 2:6-11, 5:7-19, 6:4-18, 12:41-46.

PA-1, FIG. 1 (annotated, synchrony group boxed in dots and the first and second zone players boxed in dashes).

Balassanian discloses "synchronizing the rendering of content at various rendering devices" over a "local area network" (LAN). PA-2, ¶¶16, 29; Ex. C, ¶83. Balassanian's synchronization methods may apply to various types of rendering devices, including "the video rendering device 102, the audio rendering device 103, and the text rendering device 104 via communications link 105." PA-2, ¶20. The methods also apply "to multiple audio rendering devices." *Id.* Balassanian discloses that "[v]arious communications links may be used, such as the Internet, a local area network, a wide area network, or a point-to-point dial-up connection." PA-2, ¶29.

An ordinary artisan would have found it obvious to implement Janevski's system and method on Balassanian's LAN because it would have merely involved a simple substitution of one known element (Janevski's transmission of synchronization data over the Internet) for another (Balassanian's transmission of synchronization data over a LAN) to obtain the predictable result of synchronized PVRs on a LAN. Ex. C, ¶84. An ordinary artisan would have been motivated to implement Janevski's system and method on Balassanian's LAN because using multiple PVRs within a defined network was becoming increasingly more popular as users purchased multiple TVs and playback devices (such as PVRs). Ex. C, ¶84 (citing PA-7, ¶5 (suggesting that television has become so prevalent in the United States that the typical household may have two or more television sets, each with its own set-top terminal/PVR)). Indeed, synchronizing PVRs would have been seen as beneficial because it would have allowed devices on the same network to share content. Ex. C, ¶84 (citing PA-7, ¶6 ("multiple subscribers operating discrete [set top terminals] STTs within a subscriber premises or other local area to have access to programming and content received by and/or stored in another STT")). Connecting PVRs within a household (or restricted

premises) would have reduced costs for both providers and users. Ex. C, ¶84 (citing PA-7, ¶¶5, 24, 42, 48). For example, when Janevski's PVRs are connected over a local network, a user would be able to access the same content/media from different devices even if the media is not initially stored on every device as Balassanian suggests. Ex. C, ¶84; PA-2, ¶¶16, 20, 29. Such a system would have reduced the amount of storage required in some PVRs, reducing costs and simplifying the production of the devices. Ex. C, ¶84. Additionally, an ordinary artisan would have been motivated to make such a modification because it would have enhanced a user's experience. Ex. C, ¶84. Not only would a user be able to access content not necessarily stored on one PVR, a user would be able to move between locations without interrupting their enjoyment of content. Ex. C, ¶84. Multiple users would also be able to enjoy the same content while not being in the same room. Ex. C, ¶84; PA-1, 1:38-41.

An ordinary artisan would have had a reasonable expectation of success in the combination at least because Janevski and Balassanian use similar components in similar ways to achieve similar goals (e.g., synchronizing content on multiple devices). PA-1, 6:4-44; PA-2, ¶18. Indeed, Janevski teaches that its PVRs are already configured to transmit data between each other over a network, suggesting that any changes to the system would have been minor. PA-1, 6:45-51; PA-2, ¶¶16, 20; Ex. C, ¶85. The type of information transmitted in both references is similar, including both video and audio information. PA-1, 6:45-51, 16:34-38; PA-2, ¶¶20; Ex. C, ¶85. An ordinary artisan thus would have understood that operating Janevski's system and method on a local network, as Balassanian suggests, would have been no more than combining prior art elements according to known methods, yielding predictable results (i.e., playback of content). Ex. C, ¶85.

c. [1b]: in response to receiving the request to enter into the synchrony group, entering into the synchrony group with the second zone player, wherein the first zone player is selected to begin operating as a slave of the synchrony group and the second zone player is selected to begin operating as a master of the synchrony group, and wherein the first zone player operates in accordance with a clock time that differs from a clock time of the second zone player;

Janevski and Balassanian render obvious [1b] because they disclose methods for synchronizing playback by master and slave devices that operate with different device clocks. Janevski's PVRs enter a "synchronized viewing" session with master and slave devices. PA-1, 7:4-15; 7:25-50. Janevski discloses that these PVRs initially operate on different clocks and that its method may be implemented with different types of time synchronization. PA-1, 7:51-62, 8:39-54, 8:65-10:3, 13:22-23. And Balassanian describes a synchronization method where each rendering device has a unique device time throughout synchronized playback. PA-2, ¶¶16, 19-26, 29, 32-34, claims 1, 2, 6, 10; Ex. C, ¶¶86-92.

Janevski discloses, *in response to receiving the request to enter into the synchrony group, entering into the synchrony group with the second zone player* because, as described in [1a], Janevski teaches that PVR 114b (first zone player) receives a menu from PVR 114a (second zone player), which enables the user of PVR 114b (first zone player) to select whether it would like to establish a synchronized viewing session with PVR 114a (second zone player). PA-1, 6:15-26, 7:4-15, 11:4-21, Fig. 1; *see supra* Section V.A.2.b; Ex. C, ¶87.

Janevski discloses that *the first zone player is selected to begin operating as a slave of the synchrony group and the second zone player is selected to begin operating as a master of the synchrony group* because Janevski's PVR 114a (second zone player) initiates communications and initially controls playback (i.e., initiator/master function) while PVR 114b (first zone player) receives instructions and follows the commands of the PVR 114a (i.e., participant/slave function).

PA-1, 6:13-26, 7:25-50. Janevski states that "the 'initiator' is the PVR that starts the session, although that role is handed off to any PVR that, as directed by its user, performs a control function (e.g., stop, pause, fast forward, reverse). All other PVRs participating in the session are 'participants'." PA-1, 6:13-26. The '953 patent does not describe a selection process in response to receiving a request to enter into a synchrony group or otherwise describe how roles are selected, except to say, for example, that "the initial master device 21 for the synchrony group will be the first zone player 11(*n*) that a user wishes to play an audio program." Ex. A, 8:41-44. A POSITA would have understood that Janevski's teachings correspond to the claimed selection because Janevski's PVR 114a (second zone player) that initiates playback is selected to be the master at first while the subsequent players are selected to be the slaves. Ex. C, ¶88. Janevski thus discloses that the initiator and participant designations are *selected to begin* based on which PVR starts the "synchronized viewing" session. PA-1, 7:4-15; 7:25-50.

Janevski and Balassanian disclose and suggest that *the first zone player operates in accordance with a clock time that differs from a clock time of the second zone player* because Janevski discloses that PVRs 114a and 114b both contain clocks in the form of "video timer 212" and "period timer 213" and Balassanian discloses a method of synchronizing rendering devices that each have "a device time and a rendering time." PA-1, 7:51-62, 8:39-52, 8:65-10:3, Fig. 2; PA-2, Abstract, ¶16. Janevski's timers 212 and 213 are depicted in Figure 2, reproduced below:

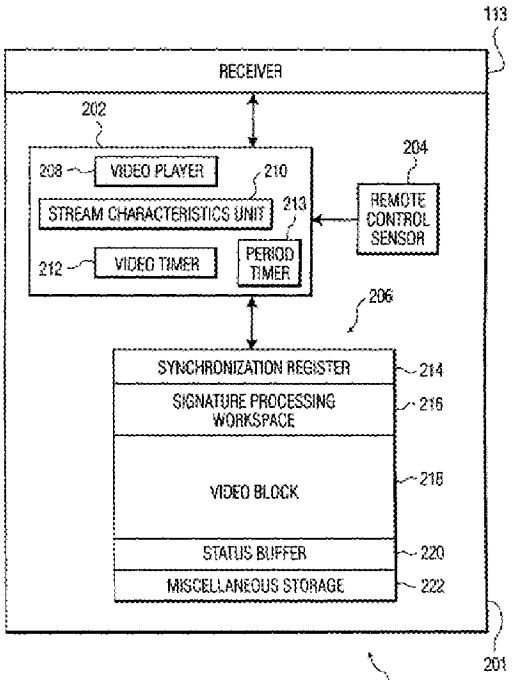


FIG. 2

PA-1, Fig. 2; *see also id.* 2:23-44 (describing issues with synchronizing playback based on PVRs with different clock times). Janevski discloses that the timers 212 produce time stamps required to synchronize the timers, suggesting that the timers initially operate independently but use timestamps to align their clocks such that playback is synchronized. PA-1, 7:51-62, 8:39-52, 8:65-10:3; Ex. C, ¶89. Janevski instructs that "[t]ime synchronization can be implemented in many different known ways" and that its method "is not limited to any particular time synchronization method." PA-1, 8:53-54, 13:22-23; Ex. C, ¶89.

Similar to Janevski, Balassanian discloses a system that uses time to synchronize rendering devices operating on different clock times. PA-2, ¶¶16, 19-26, 29, 32-34, claims 1, 2, 6, 10. Balassanian discloses that "each rendering device has a device time and a rendering time," where the device time is "the time as indicated by a designated clock (e.g., system clock) of the rendering device" and the rendering time is "the time represented by the amount of content that has been

rendered by that rendering device." PA-2, ¶16. Thus, the rendering time of content at a rendering device has a "corresponding" device time, which is "the device time at which the rendering time occurred." PA-2, ¶16. To accomplish synchronization, Balassanian's system designates one rendering device as a master and the rest of the devices as slaves. PA-2, ¶16. Once the roles have been assigned,

> [t]he master rendering device sends a message with its rendering time and corresponding device time to the slave rendering devices. Each slave rendering device, upon receiving the message from the master rendering device, determines whether it is synchronized with the master rendering time. If not, the slave rendering device adjusts the rendering of its content to compensate for the difference between the master rendering time and the slave rendering time. A slave rendering device can determine the amount it is out of synchronization by comparing its slave rendering time at a certain slave device time to the master rendering time at that same device time.

PA-2, ¶16; *see also id.*, ¶¶19-26, 29 ("calculates a rendering time differential that is used to adjust the rendering of the content"), 32-34. An embodiment of Balassanian's synchronization system "factors in the differences between the time domains of the various rendering devices when evaluating synchronization." PA-2, ¶19. Specifically, the receiving (slave) rendering device "calculates the time differential between its time domain and the time domain of the [master] sending rendering device." PA-2, ¶19; *see also* PA-2, claims 1, 2, 3, 6, 10. From these disclosures, an ordinary artisan would have understood that Balassanian's slave device may operate in accordance with a clock that differs from the clock time of the master device. Ex. C, ¶90.

These disclosures would have motivated an ordinary artisan to calculate clock offsets between Janevski's PVRs, as suggested by Balassanian, to enable more robust and accurate synchronization across zone players. Ex. C, ¶91. Balassanian's approach accounts for clock drift

and network delays, which can degrade synchronization quality over time. *Id.*; PA-2, ¶29. Balassanian addresses these concerns by utilizing one clock within each device as a reference for timing synchronization. PA-2, ¶¶16, 19, 20, 29; Ex. C, ¶91. Indeed, Balassanian uses differentials between the device times (and/or rendering times that correspond to the device times) to offset the rendering of content. PA-2, ¶¶16, 19, 20, 29, claims 1, 2, 3, 6, 10; Ex. C, ¶91. As Balassanian instructs, the use of its designated clock enables the rendering devices to account for drift and communications link latency (i.e., network delays) that leads to unsynchronized playback. PA-2, ¶¶23-27, 29. An ordinary artisan would have found Balassanian's use of rendering times, which correspond to device times, to synchronize content further improves synchronization because it links playback time to specific content at specific device times. Ex. C, ¶91.

An ordinary artisan would have had a reasonable expectation of success in using Balassanian's offsets to synchronize between Janevski's PVRs because both references are directed to synchronizing playback across audio visual devices in networked environments and use similar components, e.g., media players, control messages, and timing mechanisms, to achieve similar goals. PA-1, 6:4-44; PA-2, ¶¶19, 20, claims 1, 2, 3, 6, 10; Ex. C, ¶92. Because Janevski teaches that its method "is not limited to any particular time synchronization method" (PA-1, 8:53-54, 13:22-23), an ordinary artisan would have understood that other timing schemes would also work in Janevski's system and method. Ex. C, ¶92. An ordinary artisan thus would have reasonably expected success in combining Balassanian and Janevski to achieve predictable and scalable results. Ex. C, ¶92.

d. [1c]: after beginning to operate as the slave of the synchrony group:

Janevski and Balassanian render obvious [1c]. Janevski discloses *after beginning to operate as the slave of the synchrony group* because, as discussed in [1b], Janevski teaches that

PVR 114b (first zone player) initially operates as the participant rather than the initiator. PA-1, 6:15-26, 7:4-15, 7:25-50, 11:4-21; Ex. C, ¶93. When operating as the participant, Janevski discloses that PVR 114b performs the following limitation found in [1d]-[1h]. *See infra* Section [1d]-[1h].

e. [1d]: receiving, from the second zone player over the LAN, clock timing information that comprises at least one reading of the clock time of the second zone player;

Janevski and Balassanian render obvious [1d] because Janevski and Balassanian both disclose methods in which device time information is exchanged between playback devices. Ex. C, ¶¶94-96.

Janevski discloses that the PVRs are configured to exchange *clock timing information that comprises at least one reading of the clock time of the second zone player* because it teaches that PVR 114a (second zone player) sends PVR 114b (first zone player) an originating synchronization message 402 that contains a time stamp from PVR 114a. PA-1, 8:39-52, 8:65-9:4, 10:4-27, Figs. 4, 5. For example, Figure 4 illustrates "a possible message flow design in the present invention to determine the misalignment, if any, in the respective timings of the video timers 212 of two PVRs 114*a, b*, so that the timers can be synchronized." PA-1, 8:39-42. When "the initiator PVR 114a sends an originating synchronization message 402 to the participant PVR 114 b. The message 402 is sent at a time A which is 0 hours, 0 minutes and 2 seconds according to the video timer 212 of the initiator PVR 114a." PA-1, 9:15-29.

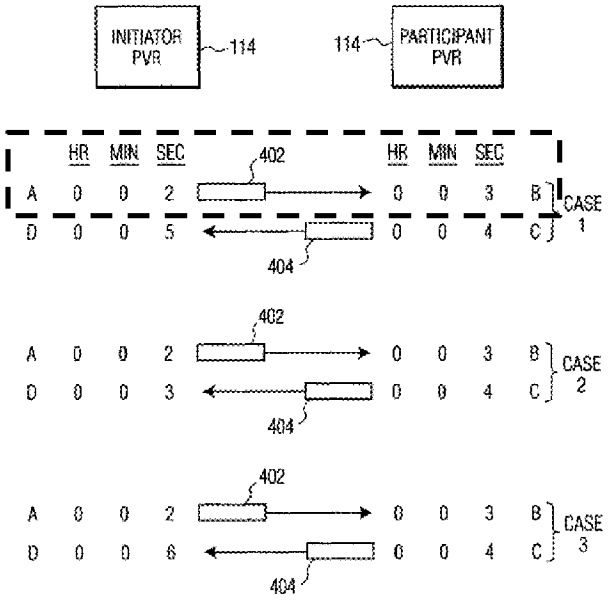


FIG. 4

PA-1, Fig. 4 (annotated). The video timer in PVR 114a corresponds to the claimed clock of the second zone player, while the video timer of PVR 114b corresponds to the claimed clock of the first zone player. As further illustrated in Figure 5, message 402 includes "time stamp A," which is the time at which the message is sent based on PVR 114a's timer. PA-1, 10:4-27, 11:12-21.

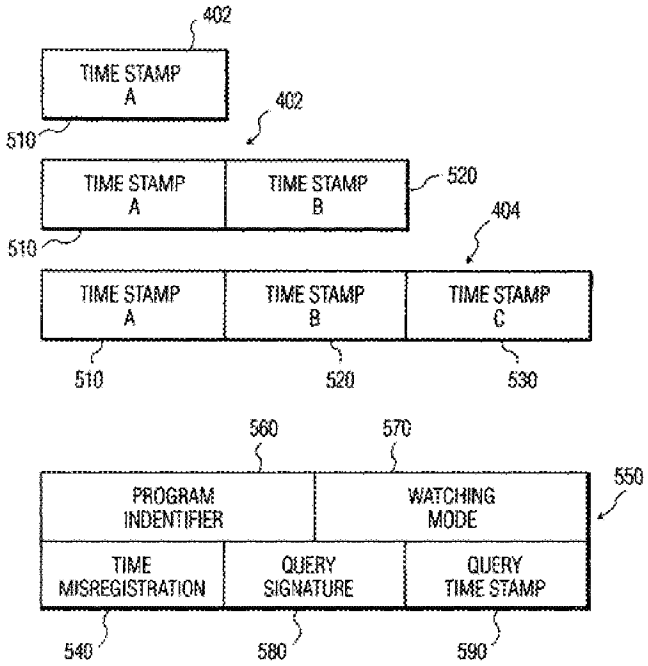


FIG. 5

PA-1, Fig. 5. Janevski then uses time stamp A, among other time stamps, to calculate time misregistration (offset) between devices, which is later used to ensure simultaneous playback. PA-1, 8:65-9:29; 10:4-27, 11:17-21. Janevski also discloses that "[t]ime synchronization can be implemented in many different known ways." PA-1, 8:53-54; Ex. C, ¶95.

Similar to Janevski, Balassanian describes that device time and rendering time information is exchanged between rendering devices to calculate time differentials. PA-2, ¶16 ("The master rendering device sends a message with its rendering time and corresponding device time to the slave rendering devices…."). For example, Balassanian discloses that each device has a "designated clock" (i.e., the master rendering device ("Device 1" in Figure 2 below) has a clock and the slave rendering device has a clock ("Device 2" in Figure 2 below)) and device times are exchanged between rendering devices and used to calculate time domain differentials. PA-2, ¶¶16, 21-26, claims 1, 2, 6, 7, 10, FIG. 2.

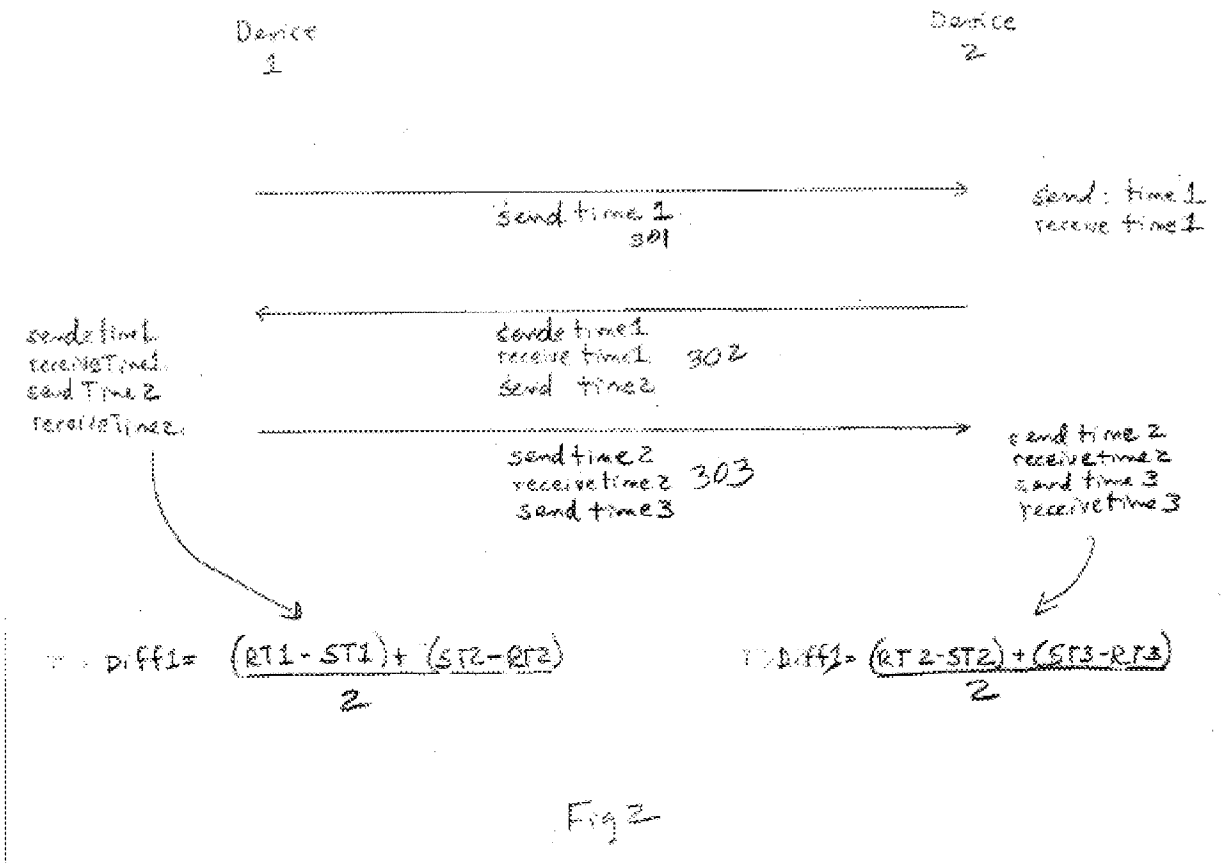


Fig 2

PA-2, FIG. 2. Balassanian applies the difference between these device times to "adjust[] … for variations in the time domain of the master device and the slave device." PA-2, claim 10. Balassanian further discloses that device times may be associated with corresponding rendering times. PA-2, ¶¶16, 28, claims 1, 2, 6, 10. Because rendering times are associated with device times, an ordinary artisan would have understood that whenever Balassanian also transmits a rendering time and calculates a differential between rendering times, this process involves a time differential between the clocks of the first and second zone players. PA-2, ¶¶16, 29, 32-34, claims 1, 2, 6, 10, Figs. 8-10; Ex. C, ¶96. Based on these disclosures, an ordinary artisan would have understood that Balassanian's exchange of device times and rendering times corresponds to the claimed *receiving, from the second zone player over the LAN, clock timing information that comprises at least one*

reading of the clock time of the second zone player as in limitation [1d] and *based on the received clock timing information, determining a differential between the clock time of the first zone player and the clock time of the second zone player* as in limitation [1e]. Ex. C, ¶96.

f. [1e]: based on the received clock timing information, determining a differential between the clock time of the first zone player and the clock time of the second zone player;

Janevski and Balassanian render obvious [1e] for the same reasons discussed above in [1d]. Ex. C, ¶97. The combination teaches *based on the received clock timing information, determining a differential between the clock time of the first zone player and the clock time of the second zone player* because Janevski discloses the concept of time misregistration (PA-1, 9:15-34, 10:4-27, 12:18-29, 12:59-13:21) and Balassanian discloses the calculation of time differentials at a slave rendering device (PA-2, ¶¶16, 20, 29, 32-34, claims 1, 2, 6, 10, Figs. 2, 8-10). Ex. C, ¶97. An ordinary artisan would have found it obvious to incorporate Balassanian's timing scheme into Janevski for the same reasons discussed in Section V.A.1, such that PVR 114b (first zone player) would calculate the device time differential upon receiving sufficient device time information as depicted in Balassanian's Figure 2. Ex. C, ¶97.

g. [1f]: receiving, from the second zone player over the LAN, (a) audio information for at least a first audio track and (b) playback timing information associated with the audio information for the first audio track that comprises an indicator of a first future time, relative to the clock time of the second zone player, at which the first and second zone players are to initiate synchronous playback of the audio information for the first audio track;

Janevski, Balassanian, and Okamura render obvious [1f] because Janevski and Okamura disclose and suggest sending audio information associated with an audio track and playback timing information. Ex. C, ¶¶98-120.

i. receiving, from the second zone player over the LAN, (a) audio information for at least a first audio track

Janevski discloses a form of "synchronization" control where the initiator PVR transmits a type of audio information and timing information to the participant PVR. PA-1, 7:39-50, 1:53-2:5; Ex. C, ¶99. Janevski describes that the synchronized content "may be merely visual or merely aural or both visual and aural." PA-1, 6:16-27, 16:34-43; Ex. C, ¶99. Janevski's initiator PVR transmits to the participant PVR a "status message" including "an indication of the time into the program[] and information characteristic of content of a digital bit stream." PA-1, 7:39-50, 1:53-2:5; Ex. C, ¶99. Janevski thus teaches the transmission and receipt of audio information related to audio tracks because it discloses that the "characteristic information may be characteristic of … audible sounds" and "audio transform coefficients" can be used to "characterize the content of the bit streams." PA-1, 16:38-43; Ex. C, ¶99. Janevski then discloses that this "information characteristic of content of a digital bit stream" is used to synchronize playback. PA-1, 7:47-50; Ex. C, ¶99.

Similar to Janevski, Okamura discloses processing audio data for transmission to a receiving node. Ex. C, ¶100. For example, in the "transmitting apparatus, the packetizing section 9 arranges the event sequence data into data blocks and adds thereto a timestamp so as to sequentially produce packets." PA-3, 12:30-33; Ex. C, ¶100. This "event sequence" is "an audio channel." PA-3, 1:51-53, 3:2-7; *see also id.*, 1:42-56 ("Each transmitting node also arranges audio data of one or more channels into a data field and arranges the associated timestamp into a syt field so as to form a packet composed of the data field and the syt field, and sends the packet"); Ex. C, ¶100. Okamura's "packetizing section 9 ***arranges*** the event sequence data into data blocks" that are transmittable and represent the original audio channel. PA-3, 1:51-53, 12:26-34; Ex. C, ¶100. Okamura also discloses that "packetized audio data are supplied from one or more transmitting

nodes" and "[i]n the receiving node, the received audio data are outputted …" PA-3, 13:29-37; Ex. C, ¶100. Thus, in Okamura, the obtained audio information is the audio data to be played back by the transmitting and receiving devices, not merely characteristic information for synchronization. *Id.* As another example, Okamura specifically teaches that "[b]y use of the time information of the received timestamp syt, the time of reproducing the received audio data is set to the time of the cycle timer of the receive block 2, and the received data are outputted to a peripheral device at a reproduction timing clock synchronized with the input sampling clock of the transmit side." PA-3, 10:65-11:3; Ex. C, ¶100. Okamura discloses synchronizing audio data reproduction between transmitting and receiving nodes. PA-3, Abstract, 1:42-56, 5:53-67, 24:45-25:57.

Okamura's disclosure of "arrang[ing] the event sequence data into data blocks" and "generat[ing]" packets (PA-3, 7:36-49, 12:26-34) corresponds to the claimed *audio information for at least one audio track*. Ex. C, ¶101. The '953 patent explains that audio information can be an individual frame or set of frames and that "an audio track may comprise any unit of audio information that is to be played without interruption." Ex. A, 19:49-55; Ex. C, ¶101. Accordingly, an ordinary artisan would have understood that Okamura teaches, or at least renders obvious, the sending/receiving *audio information for at least a first audio track* because it discloses the transmission of groups of audio data. Ex. C, ¶101.

An ordinary artisan would have found it obvious to implement Okamura's transmission of audio data alongside a reproduction timestamp in Janevski-Balassanian's method and system to further enhance the combined system's synchronization method. Ex. C, ¶102. An ordinary artisan would have recognized that Janevski's system is not restricted to scenarios where each PVR has its own copy of the content. Janevski expressly teaches that "[a]lthough [] copies of video 308 are described as recorded from broadcasts, ***this is not a limitation***," and "[t]he video copies could be

downloaded from a service provider." PA-1, 16:10-16; Ex. C, ¶102. Moreover, Janevski teaches that "[t]he video copies whose playback is being synchronized need not be remotely located, nor locally located at their respective PVRs." PA-1, 16:10-16; Ex. C, ¶102.

Okamura discloses a synchronization mechanism that transmits audio data for playback packaged along with associated timing information. PA-3, 1:42-56 ("Each transmitting node also arranges audio data of one or more channels into a data field and arranges the associated timestamp into a syt field ***so as to form a packet*** composed of the data field and the syt field"); Ex. C, ¶103. Because Okamura specifically teaches a synchronization method that "effect[s] synchronous reproduction of the event sequence data contained ***in the same packet*** as the timestamp," a person of ordinary skill in the art would have been motivated to modify Janevski's system to include the audio information for playback (as taught by Okamura) with Okamura's timing information in the same packet. PA-3, 5:48-67; Ex. C, ¶103.

An ordinary artisan would have recognized that transmitting (and receiving) Okamura's "packetized audio data" in Janevski's system would have advantageously allowed Janevski's "initiator" "PVR" "114a" to transmit the "broadcast" to the "participant" PVR 114b if it did not already have the broadcast recorded. PA-1, 6:13-38, 6:45-51, 6:59-7:3; Ex. C, ¶104. An ordinary artisan would have been motivated to implement Okamura's packetized audio to advantageously allow two PVRs to synchronously play back programming that one of the PVRs did not previously record. Ex. C, ¶104. An ordinary artisan would have recognized that Janevski expressly teaches that "[a]lthough [] copies of video 308 are described as recorded from broadcasts, this is not a limitation," and "[t]he video copies could be downloaded from a service provider." PA-1, 16:10-16; Ex. C, ¶104. Moreover, Janevski teaches that "[t]he video copies whose playback is being synchronized need not be remotely located, nor locally located at their respective PVRs." PA-1,

16:10-16; Ex. C, ¶104. An ordinary artisan would have sought solutions for retrieving audio copies where the second PVR had not previously recorded a copy. Ex. C, ¶104. Okamura teaches such a solution by allowing Janevski's second PVR to receive the content for playback from the first PVR along with the timing information. Ex. C, ¶104.

An ordinary artisan would have been motivated to replace Janevski's use of different (or at least separate) versions of the same locally stored content on each PVR with Okamura's content sharing between devices because it would have reduced the complexity of Janevski's synchronization method. Ex. C, ¶105. An ordinary artisan would have understood that Janevski's playback method, which involves time and frame misregistration, requires a comparison between "query signature 580" (i.e., data that is representative of audio content) and "a query time stamp 590"—received from the master PVR—against "the signature of the I frame of the participant PVR 114b whose time stamp is closest to the time stamp 590 of the query frame." PA-1, 10:36-62; Ex. C, ¶105. An ordinary artisan would have appreciated that the frame misregistration is required when different versions of content must be compared or when a representation of the content is compared to the actual content. Ex. C, ¶105. An ordinary artisan would have known that this process can be avoided if one version of the content is sent from one device to another along with instructions of when to play the content. Ex. C, ¶105. Thus, an ordinary artisan would have understood that the complexity of Janevski's synchronization method would be reduced by removing the need to process frame misregistration. Ex. C, ¶105.

An ordinary artisan would have also been motivated to replace Janevski's use of different (or at least separate) versions of the same locally stored content on each PVR with Okamura's content sharing between devices because it would have optimized storage, making it more efficient. Ex. C, ¶106. Indeed, an ordinary artisan would have understood that by saving the content on one

PVR (and then transmitting it to others), the content is only permanently stored in one location. This would have been viewed as reducing the amount of saved data, allowing the device to store other content, data, or use the storage space in another way. Ex. C, ¶106. An ordinary artisan would have further found the combination to be advantageous because it would allow for synchronized playback even if one of the playback devices is not connected to a broadcast source. Ex. C, ¶106.

An ordinary artisan would have reasonably expected success in combining Janevski and Okamura because both references are directed to synchronizing playback across AV devices in networked environments and use similar components, e.g., media players, control messages, and timing mechanisms, to achieve similar goals. PA-1, 6:4-44; PA-3, 1:42-56, 5:53-67; Ex. C, ¶107. Moreover, an ordinary artisan would have recognized that the expectation of success would have been heightened because Janevski already teaches a "status message" including "information characteristic." PA-1, 7:25-50; *id.*, 1:53-2:5; Ex. C, ¶107. Thus, Janevski already supports a mechanism for transmitting audio information between its PVRs and transmitting Okamura's packetized audio information between the PVRs would have straightforwardly applied to Janevski's existing system. Ex. C, ¶107.

An ordinary artisan would also have had a reasonable expectation of success in the modification at least because Janevski suggests that the use of locally stored content is not required. For example, Janevski provides that "video copies whose playback is being synchronized need not be remotely located, nor locally located at their respective PVRs." PA-1, 16:10-16; Ex. C, ¶108. An ordinary artisan would have further expected this to be a successful combination because other PVR devices, like those described in Janevski, were configured to share content. *See* Ex. C, ¶108 (citing PA-7, ¶¶5, 6, 24, 42, 48). Accordingly, it would have been within an ordinary artisan's skill set to implement the change in Janevski. Ex. C, ¶108.

Implementing Okamura's scheme in the Janevski-Balassanian system would have used known features according to their known functions (deriving audio information packets and transmitting the audio information, e.g., over Janevski's Internet connection), to achieve predictable results (Janevski's participant PVR receives the packetized audio information for playback from the initiator PVR). Ex. C, ¶109.

An ordinary artisan further would have been motivated to transmit Okamura's audio content using Janevski's PVRs over a LAN as in Balassanian because, as noted above (*see* Sections V.A.1, V.A.2.b), it would have reduced complexity, reduced costs, and enhanced the user experience. An ordinary artisan would further have had a reasonable expectation of success in the combination because the devices use similar components to achieve similar goals. Ex. C, ¶110; Sections V.A.1, V.A.2.b.

ii. **[*receiving, from the second zone player over the LAN*] *(b) playback timing information associated with the audio information for the first audio track that comprises an indicator of a first future time, relative to the clock time of the second zone player, at which the first and second zone players are to initiate synchronous playback of the audio information for the first audio track***

An ordinary artisan would also have found it obvious to modify Janevski's system to implement Okamura's use of playback timing information (which is indicative of at least one future time relative to a reference clock time). Ex. C, ¶¶111-120.

As noted above, Janevski discloses a form of "synchronization" control where the initiator PVR 114a (second zone player) transmits a type of audio information and timing information to the participant PVR 114b (first zone player) within a "status message." PA-1, 7:39-50, 1:53-2:5, 13:22-23; Ex. C, ¶112. But Janevski's invention "is not limited to any particular time synchronization method." PA-1, 13:22-23; Ex. C, ¶112. In fact, Janevski also discloses that "[t]ime

synchronization can be implemented in many different known ways." PA-1, 8:53-54; Ex. C, ¶112. So, while Janevski does not disclose the claimed *first future time* limitation as its exemplary timing solution, an ordinary artisan would have been motivated to look to other known solutions. Ex. C, ¶112.

Okamura discloses a known way of performing time synchronization—one using *playback timing information associated with the audio information for the first audio track*. Ex. C, ¶113. Similar to Janevski, Okamura discloses that timing information is included in a packet with audio data. PA-3, 1:47-56; Ex. C, ¶113. Specifically, Okamura discloses that "[e]ach transmitting node also arranges audio data of one or more channels into a data field and arranges the associated timestamp into a syt field so as to form a packet composed of the data field and the syt field, and sends the packet." PA-3, 1:47-56, 5:21-46, 6:15-19, 23:45-49. Therefore, Okamura discloses that the playback timing information is packaged (i.e., included in the same packet) with the audio data, thereby associating it with specific portions of the audio stream and enabling synchronized playback. Ex. C, ¶113. An ordinary artisan would have recognized Okamura's and Janevski's approaches as known and suitable options for achieving synchronized playback. Ex. C, ¶113. It would have been obvious to implement either method, or a combination thereof, to coordinate playback timing across multiple devices in a synchrony group as permitted under the flexible obviousness standard articulated in *KSR Int'l Co. v. Teleflex Inc.*, 550 U.S. 398, 421 (2007). Ex. C, ¶113.

Okamura further discloses *playback timing information ... that comprises an indicator of a first future time, relative to the clock time of the second zone player, at which the first and second zone players are to initiate synchronous playback of the audio information for the first audio track* ("the *first future time* limitation"). Okamura teaches that the transmitting node (i.e., PVR 114a,

second zone player) generates a timestamp "on the basis of the time provided by the cycle timer" and associates it with specific portions of the audio stream. PA-3, 1:42-56; Ex. C, ¶114. The timestamp is transmitted along with the audio data and "specifies the reproduction time at the receiving side of an event sequence," enabling the receiving node (i.e., PVR 114b, first zone player) to initiate playback of the corresponding portion of the audio information at the designated future time. PA-3, 1:51-54, 3:23-28, 5:53-67. In other words, the timestamp sent by Okamura's transmitting node/master node signifies a time at which the audio data should be played back based on (i.e., relative to) the transmitting node's clock (i.e., the clock time of the second zone player). Ex. C, ¶114. The receiving node (i.e., PVR 114b, first zone player) uses its own internal cycle timer as a local clock and initiates playback when the adjusted timestamp matches its current time. PA-3, 5:53-67; Ex. C, ¶114; *see infra* Section V.A.2.h ([1g]). Based on these disclosures, an ordinary artisan would have understood that Okamura discloses the claimed *first future time* limitation because the timestamp is based on the transmitting node's clock and informs both nodes when to play back content. Ex. C, ¶114.

An ordinary artisan would have been motivated with a reasonable expectation of success to implement Okamura's transmission of audio data alongside a reproduction timestamp in Janevski-Balassanian's method and system. Ex. C, ¶115. The rationale to modify Janevski with Balassanian and Okamura is expressly taught, suggested, and motivated by Janevski itself, which discloses that "[t]ime synchronization can be implemented in many different known ways" and Janevski "is not limited to any particular time synchronization method." PA-1, 8:53-54, 13:22-23; Ex. C, ¶115. Patent Owner likewise recognized that "this disclosure provides a clear motivation to combine Janevski with prior art references disclosing existing 'time synchronization' mechanisms …" (in that case, mechanisms that relate to smoothing functions). Ex. F-2, 66 (quoting

PA-1, 8:53-64, 13:21-22); Ex. C, ¶115. Patent Owner also recognized that an ordinary artisan would have been motivated to combine Janevski with other references that "disclose mechanisms for improving the accuracy of 'time synchronization' between nodes in a distributed network." Ex. F-2, 71; Ex. C, ¶115. Here, an ordinary artisan would have been motivated to combine Janevski and Okamura for similar reasons—Okamura provides an advantageous known alternative method of time synchronization, and Janevski contemplates using other known ways of time synchronization in its system. Ex. C, ¶115.

An ordinary artisan would have been motivated to combine Janevski, Balassanian, and Okamura to improve synchronization precision and scalability across networked playback devices. Ex. C, ¶116. Janevski relies on reactive synchronization using internal video timers and message exchanges to correct misalignment between devices. PA-1, 8:65-10:3, 12:59-66; Ex. C, ¶116. However, this approach assumes symmetrical transmission delays and lacks a predictive mechanism for future playback timing based on a shared reference clock. Ex. C, ¶116.

Okamura addresses these limitations by teaching a synchronization method that uses a cycle timer as a reference clock to generate timestamps representing future playback times and adjusts for propagation delay and clock offset. PA-3, 1:42-56, 5:53-67, 24:7-12; Ex. C, ¶117. In the context of the combination, Okamura's cycle timer in the transmitting node corresponds to the reference clock maintained by Janevski's initiator zone player (PVR 114a/ second zone player). Ex. C, ¶117. An ordinary artisan would have recognized that Okamura's predictive synchronization mechanism would have been advantageously implemented in Janevski's multi-device synchronization framework to improve timing accuracy and reduce reliance on reactive correction. *Id.*

These references are both directed to synchronizing playback across AV devices in networked environments and use similar components to achieve similar goals. PA-1, 6:4-44; PA-3, 1:42-56, 5:48-67; Ex. C, ¶118. An ordinary artisan would have reasonably expected success in combining Okamura's reference-clock-based timestamping with Janevski's multi-device synchronization framework to achieve more robust and scalable synchronous playback. Ex. C, ¶118.

Implementing Okamura's timestamp generation in Janevski's multi-device synchronization framework would have used known techniques (reference clocks and offset adjustments) according to their known functions (predictive synchronization), to achieve predictable results (accurate future playback timing across devices). Ex. C, ¶119.

As noted above with the *audio information* limitation, an ordinary artisan further would have been motivated to transmit Okamura's reproduction timestamp using Janevski's PVRs over a LAN as in Balassanian because, as noted above (Sections V.A.1, V.A.2.b), it would have reduced costs and enhanced the user experience. *See* Section V.A.1, V.A.2.b; Ex. C, ¶120. Moreover, an ordinary artisan would have had a reasonable expectation of success in the combination because the devices use similar components to achieve similar goals. *See* Section V.A.1; Ex. C, ¶120.

h. [1g]: updating the first future time to account for the determined differential between the clock time of the first zone player and the clock time of the second zone player; and

Janevski, Balassanian, and Okamura render obvious [1g] because Okamura teaches that its receiving node "adds the offset time to a time indicated by the timestamp" (PA-3, 5:30-47, 5:53-67, 23:57-61) and Balassanian teaches the use of a time domain differential to offset individually clocked rendering devices (PA-2, claims 1, 2, 6, 10, 16, ¶¶19, 21-27, 30, 31). Ex. C, ¶¶121-125.

Okamura's receiving node adds an offset to its timestamp to account for any time difference between the nodes. Ex. C, ¶122. For example, Okamura discloses that the system includes "an offset setting section that sets an offset time for the receiving node relative to the transmitting node and adds the offset time to a time indicated by the timestamp ..." and "a reproduction time control section that operates when the time of the timestamp added with the offset time coincides with a current time indicated by an internal cycle timer for controlling the data output section to effect synchronous reproduction." PA-3, 5:30-47, 5:53-67; Ex. C, ¶122. Additionally, Okamura teaches that "[b]y adjusting the offset value on the receiving side, the time of reproducing the audio data supplied from each transmitting node can be shifted from the time of timestamp." PA-3, 24:9-12; Ex. C, ¶122.

As discussed in detail in Sections [1d] and [1e], Balassanian similarly teaches offsetting a rendering time based on a differential to synchronize play back. For example, claim 1 of Balassanian recites

> 1. A method for synchronizing the rendering of content at a plurality of devices, the content having a rendering time, the method comprising:
>
> designating one of the devices as a master device and the other devices as slave devices;
>
> sending to each device content to be rendered at that device synchronized with the content sent to the other devices;
>
> sending from the master device to the slave devices an indication of when the master device renders content corresponding to a rendering time; and
>
> after receiving the indication at a slave device, adjusting based on the received indication the rendering of the content at the slave device to account for variation between when the master device and the slave device render content that should be rendered at the same time.

PA-2, claim 1, ¶¶19, 21-27, 30, 31. Balassanian's dependent claims further define that the adjustment to the rendering of content "accounts for variations in the time domain of the master device and the slave device." PA-2, claim 10, *see also* claims 2, 6, ¶¶19, 21-27, 30, 31. Based on these disclosures, an ordinary artisan would have understood that Balassanian teaches that a differential between two device times may be used to offset the rendering of content. Ex. C, ¶123.

An ordinary artisan would have found it obvious to implement Balassanian's device time/time domain differential as the offset for Okamura's reproduction timestamp in Janevski's system and method to ensure that timing information generated at one device can be correctly interpreted at another device with a different clock. Ex. C, ¶124. Janevski itself provides motivation to implement this timing scheme because it discloses that "[t]ime synchronization can be implemented in many different known ways" and Janevski "is not limited to any particular time synchronization method." PA-1, 8:53-54, 13:22-23; Ex. C, ¶124. Balassanian provides a known technique for independently clocked devices to exchange clock readings and compute a time-domain differential (offset) between their clocks, including approaches that mitigate message latency. Ex. C, ¶124. Moreover, an ordinary artisan would have known that using a calculated offset, as Balassanian suggests, provides a more accurate, dynamically computed offset based on actual communication timing rather than a fixed or estimated value. Ex. C, ¶124.

An ordinary artisan would have had a reasonable expectation of success in this combination because implementing Okamura and Balassanian's combined scheme in Janevski's system would have used known features (e.g., timing information, differentials, and offsets) according to their known functions (e.g., for use in synchronizing playback), to achieve predictable results (Janevski's participant PVR 114b plays back content). Ex. C, ¶125. All three references contemplate synchronized playback of content, and as noted above, Janevski suggests that any of

these time-based synchronization methods may be implemented in its system. Ex. C, ¶125. Indeed, the devices contain similar components for use in similar manners, meaning that the combination would not have rendered Janevski inoperable for its intended purpose. Ex. C, ¶125.

i. [1h]: when the clock time of the first zone player reaches the updated first future time, initiating synchronous playback of the received audio information with the second zone player.

Janevski, Balassanian, and Okamura render obvious [1h] because, as discussed in [1g], Okamura discloses "a reproduction time control section that operates when the time of the timestamp added with the offset time coincides with a current time indicated by an internal cycle timer for controlling the data output section to effect synchronous reproduction" (PA-3, 5:53-67) and Balassanian teaches using a clock time differential to offset the rendering of synchronized content (PA-2, claims 1, 2, 6, 10, 16, ¶¶19, 21-27, 30, 31). Ex. C, ¶126; *see also* Section V.A.2.g ([1g]). When Balassanian's time differential updates Okamura's reproduction timestamp in Janevski's PVR 114b, PVR 114b would then play back the corresponding content at that time, synchronizing the playback with PVR114a. An ordinary artisan would have been motivated with a reasonable expectation of success to combine Janevski, Balassanian, and Okamura for the same reasons discussed above. Ex. C, ¶126; Sections V.A.1, V.A.2.

3. Independent Claim 7

a. [7pre]: A first zone player comprising:

Janevski, Balassanian, and Okamura render obvious [7pre] for the same reasons discussed in claim 1 above. *See supra* Sections [1pre], [1b]. Janevski describes a method of synchronizing personal video recorders "PVRs 114a, b," which correspond to the claimed *zone players* because they are "data network device[s] configured to process and output audio." *See supra* Sections [1pre], [1b]; PA-1, 2:6-16, 6:13-26, 7:25-50, 13:22-23, 17:7-16, FIG. 1; Ex. C, ¶127. Janevski's

PVR 114b constitutes a *first zone player* because it initially assumes the participant or slave role. PA-1, 6:13-26, 7:25-50.

b. [7a]: a network interface that is configured to provide an interconnection with at least one data network;

Janevski, Balassanian, and Okamura render obvious [7a] because Janevski's PVRs communicate over a network "to synchronize their playbacks." PA-1, Abstract, 6:44-49; Ex. C, ¶128. Janevski's Figure 1 illustrates a "synchronized viewing session," where "[t]he Internet 118 supplies the means 119 for communicating information between the PVRs 114a, b such that synchronization may be achieved." PA-1, 6:48-51; Ex. C, ¶128. Moreover, Janevski describes that content may be downloaded to the PVRs through a network. PA-1, 6:6-16, 16:10-16; Ex. C, ¶128.

The '953 patent similarly describes its zone players being implemented with multiple network interface devices, including those that connect zone players to a local network and those that connect the local network to external networks such as the Internet or PSTN. Ex. A, 4:18-25; Ex. C, ¶129. Therefore, the network interface referenced in the claim may encompass multiple interfaces. Ex. C, ¶129.

Accordingly, an ordinary artisan would have understood that the PVR devices each contain a *network interface that is configured to provide an interconnection with at least one data network* because the devices interact with and communicate over a network. Ex. C, ¶130.

c. [7b]: a clock that is configured to provide a clock time of the first zone player;

Janevski, Balassanian, and Okamura render obvious [7b] because, as detailed in Section [1b], Janevski's PVR 114a/b both contain clocks in the form of "video timer 212" and "period timer 213" and Okamura discloses a synchronization method that involves independently clocked

timers. PA-1, 7:51-62, 8:39-52, 8:65-10:3, Fig. 2; PA-3, 1:42-56, 5:48-67, 5:53-67, 24:7-12; Ex. C, ¶131; *see supra* Section [1b].

d. [7c]: at least one processor;

Janevski, Balassanian, and Okamura render obvious [7c] because Janevski discloses that its PVRs comprise a "microprocessor 202" (*at least one processor*). PA-1, 7:20-24, 7:57-62; Ex. C, ¶132.

e. [7d]: a tangible, non-transitory computer-readable medium; and

Janevski, Balassanian, and Okamura render obvious [7d] because Janevski discloses "PVR 114a includes … a digital memory 206," which is a non-transitory computer-readable media (shown in Figure 2). PA-1, 7:57-8:8; Ex. C, ¶133. Janevski's memory includes instructions that are executed because "[a] memory device and a processor preferably reside in either the PVRs 114a, b" and "programming code associated with the system 110 preferably resides in the memory device and is processed by the processor." PA-1, 7:20-24; Ex. C, ¶133.

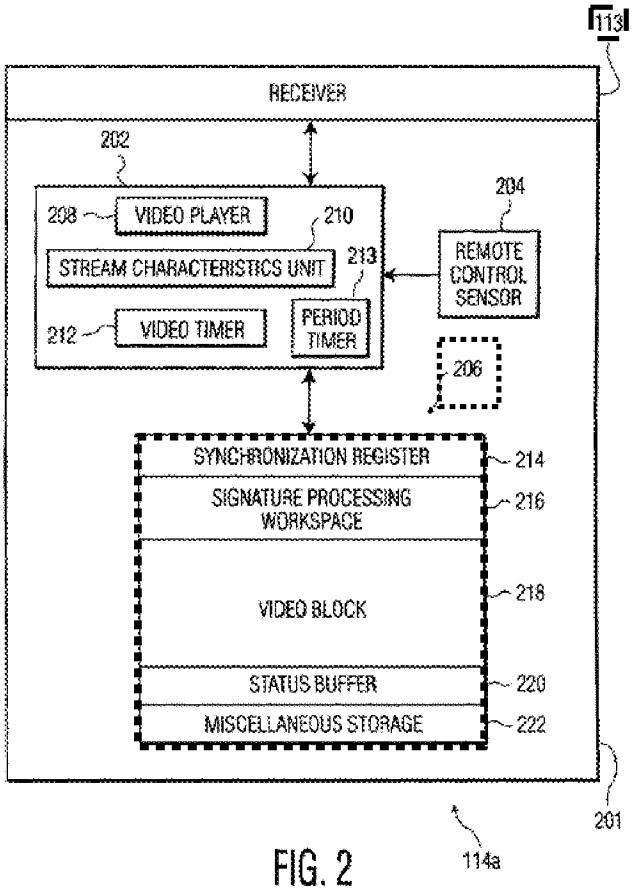


FIG. 2

PA-1, FIG. 2 (annotated) (PVR computer readable medium boxed using dots).

f. [7e]: program instructions stored on the tangible, non-transitory computer-readable medium that are executable by the at least one processor to cause the first zone player to perform functions comprising:

Janevski, Balassanian, and Okamura render obvious [7e] because, as noted in [7d], Janevski discloses that "programming code associated with the system 110 preferably resides in the memory device and is processed by the processor." PA-1, 7:20-24; Ex. C, ¶134.

g. [7f]: receiving a request to enter into a synchrony group with at least a second zone player that is communicatively coupled with the first zone player over a local area network (LAN);

Janevski, Balassanian, and Okamura render obvious [7f] for the same reasons detailed in [1a]. *See supra* Section [1a]; Ex. C, ¶135.

h. [7g]: in response to receiving the request to enter into the synchrony group, entering into the synchrony group with the second zone player, wherein the first zone player is selected to begin operating as a slave of the synchrony group and the second zone player is selected to begin operating as a master of the synchrony group, and wherein the clock time of the first zone player differs from a clock time of the second zone player;

Janevski, Balassanian, and Okamura render obvious [7g] for the same reasons detailed in [1b]. *See supra* Section [1b]; Ex. C, ¶136.

i. [7h]: after beginning to operate as the slave of the synchrony group:

Janevski, Balassanian, and Okamura render obvious [7h] for the same reasons detailed in [1c]. *See supra* Section [1c]; Ex. C, ¶137.

j. [7i]: receiving, from the second zone player over the LAN, clock timing information that comprises at least one reading of the clock time of the second zone player;

Janevski, Balassanian, and Okamura render obvious [7i] for the same reasons detailed in [1d]. *See supra* Section [1d]; Ex. C, ¶138.

k. [7j]: based on the received clock timing information, determining a differential between the clock time of the first zone player and the clock time of the second zone player;

Janevski, Balassanian, and Okamura render obvious [7j] for the same reasons detailed in [1e]. *See supra* Section [1e]; Ex. C, ¶139.

l. [7k]: receiving, from the second zone player over the LAN, (a) audio information for at least a first audio track and (b) playback timing information associated with the audio information for the first audio track that comprises an indicator of a first future time, relative to the clock time of the second zone player, at which the first and second zone players are to initiate synchronous playback of the audio information for the first audio track;

Janevski, Balassanian, and Okamura render obvious [7k] for the same reasons detailed in [1f]. *See supra* Section [1f]; Ex. C, ¶140.

m. [7l]: updating the first future time to account for the determined differential between the clock time of the first zone player and the clock time of the second zone player; and

Janevski, Balassanian, and Okamura render obvious [7l] for the same reasons detailed in [1g]. *See supra* Section [1g]; Ex. C, ¶141.

n. [7m]: when the clock time of the first zone player reaches the updated first future time, initiating synchronous playback of the received audio information with the second zone player.

Janevski, Balassanian, and Okamura render obvious [7m] for the same reasons detailed in [1h]. *See supra* Section [1h]; Ex. C, ¶142.

4. Independent Claim 25

a. [25pre]: Tangible, non-transitory computer-readable storage media, wherein the tangible, non-transitory computer-readable storage media is provisioned with software that is executable to cause a first zone player to perform functions comprising:

Janevski, Balassanian, and Okamura render obvious [25pre] for at least the same reasons detailed in [7d] and [7e]. *See supra* Section [7d], [7e]; Ex. C, ¶143. Janevski describes that its memory includes instructions that are executed because "[a] memory device and a processor preferably reside in either the PVRs 114a, b" and "programming code associated with the system

110 preferably resides in the memory device and is processed by the processor." PA-1, 7:20-24; Ex. C, ¶143.

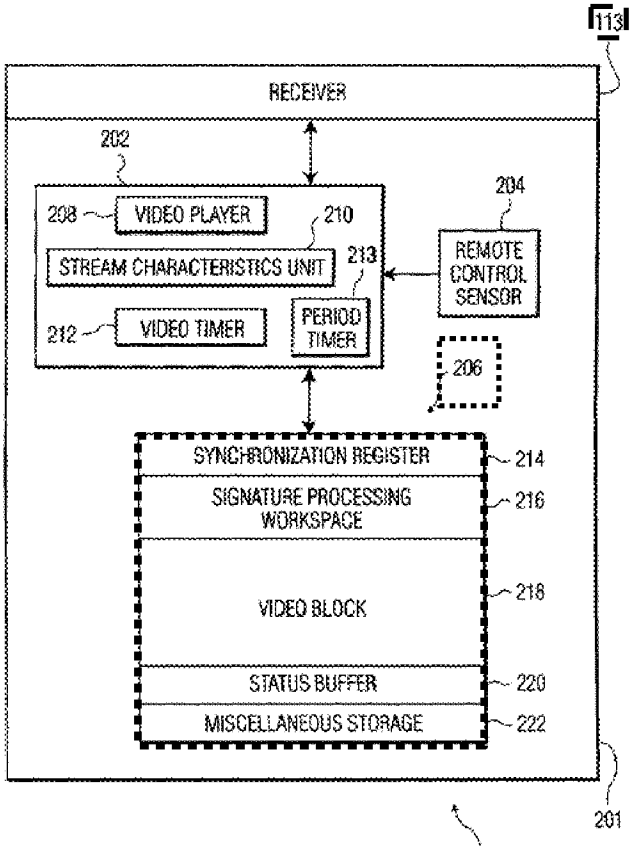


FIG. 2

PA-1, FIG. 2 (annotated) (PVR computer readable medium boxed using dots). An ordinary artisan would have understood Janevski's "programming code associated with the system 110" corresponds to the claimed *software that is executable to cause a first zone player to perform functions* because programming code is what builds software. Ex. C, ¶143.

b. [25a]: receiving a request to enter into a synchrony group with at least a second zone player that is communicatively coupled with the first zone player over a local area network (LAN);

Janevski, Balassanian, and Okamura render obvious [25a] for the same reasons detailed in [1a]. *See supra* Section [1a]; Ex. C, ¶144.

c. [25b]: in response to receiving the request to enter into the synchrony group, entering into the synchrony group with the second zone player, wherein the first zone player is selected to begin operating as a slave of the synchrony group and the second zone player is selected to begin operating as a master of the synchrony group, and wherein the first zone player operates in accordance with a clock time that differs from a clock time of the second zone player;

Janevski, Balassanian, and Okamura render obvious [25b] for the same reasons detailed in [1b]. *See supra* Section [1b]; Ex. C, ¶145.

d. [25c]: after beginning to operate as the slave of the synchrony group:

Janevski, Balassanian, and Okamura render obvious [25c] for the same reasons detailed in [1c]. *See supra* Section [1c]; Ex. C, ¶146.

e. [25d]: receiving, from the second zone player over the LAN, clock timing information that comprises at least one reading of the clock time of the second zone player;

Janevski, Balassanian, and Okamura render obvious [25d] for the same reasons detailed in [1d]. *See supra* Section [1d]; Ex. C, ¶147.

f. [25e]: based on the received clock timing information, determining a differential between the clock time of the first zone player and the clock time of the second zone player;

Janevski, Balassanian, and Okamura render obvious [25e] for the same reasons detailed in [1e]. *See supra* Section [1e]; Ex. C, ¶148.

g. [25f]: receiving, from the second zone player over the LAN, (a) audio information for at least a first audio track and (b) playback timing information associated with the audio information for the first audio track that comprises an indicator of a first future time, relative to the clock time of the second zone player, at which the first and second zone players are to initiate synchronous playback of the audio information for the first audio track;

Janevski, Balassanian, and Okamura render obvious [25f] for the same reasons detailed in [1f]. *See supra* Section [1f]; Ex. C, ¶149.

h. [25g]: updating the first future time to account for the determined differential between the clock time of the first zone player and the clock time of the second zone player; and

Janevski, Balassanian, and Okamura render obvious [25g] for the same reasons detailed in [1g]. *See supra* Section [1g]; Ex. C, ¶150.

i. [25h]: when the clock time of the first zone player reaches the updated first future time, initiating synchronous playback of the received audio information with the second zone player.

Janevski, Balassanian, and Okamura render obvious [25h] for the same reasons detailed in [1h]. *See supra* Section [1h]; Ex. C, ¶151.

5. Dependent Claims 4, 8, 9, 12-14, 18-20, 24, and 28

a. Claim 4. The method of claim 1,

wherein the determined differential between the clock time of the first zone player and the clock time of the second zone player comprises an initial differential between the clock time of the first zone player and the clock time of the second zone player, and wherein the method further comprises, while the first zone player is operating as a slave of the synchrony group:

after determining the initial differential between the clock time of the first zone player and the clock time of the second zone player, receiving, from the second zone player over the LAN, updated clock timing information that includes at least one updated reading of the clock time of the second zone player; and

based on the updated timing information, determining an updated differential between the clock time of the first zone player and the clock time of the second zone player.

Janevski, Balassanian, and Okamura render obvious claim 4 because Janevski's method repeatedly sends timing information (PA-1, 7:36-39, 15:32-33), Balassanian teaches that the exchange of device times and calculating the timing differential occurs periodically (PA-2, ¶20), and Okamura discloses that its reproduction timestamps are "added per a predetermined number of data blocks" (PA-3, 5:21-32, 6:15-20). Ex. C, ¶152. Further to the disclosures discussed in [1d], [1e], and [1g], an ordinary artisan would have found it obvious to periodically send timing information and update the timing information to account for drift between devices. Ex. C, ¶152.

As noted in [1d] and [1e], Balassanian discloses a synchronization method where rendering devices exchange their device times to facilitate synchronized playback. PA-2, ¶¶16, 20-26, 28-29, 32-34, claims 1, 2, 6, 7, 10, Figs. 2, 8-10. Balassanian teaches that this exchange occurs periodically. *Id.* For example, "the audio rendering device broadcasts a master rendering time message with its master device time and master rendering time to the slave rendering devices on a

periodic basis." PA-2, ¶¶20, 28, claims 1, 2, 6, and 19. As noted in [1e], Balassanian discloses that its slave rendering device uses this device-time information to calculate a differential. PA-2, ¶¶16, 20-26, 28-29, 32-34, claims 1, 2, 6, 7, 10, Figs. 2, 8-10; Ex. C, ¶153.

An ordinary artisan would have understood that the first instance of Balassanian's exchange of device-time information corresponds to the claimed *initial differential* because, consistent with the plain meaning of the phrase, it is the first of several exchanges. Ex. C, ¶154. An ordinary artisan would have further understood that the subsequent exchange(s) of device-time information corresponds to the claimed *receiving updated clock timing information* and *determining an updated differential* because it provides new device-time information, which is used to calculate another differential at the slave rendering device. Ex. C, ¶154.

An ordinary artisan would have found it obvious to implement Balassanian's periodic exchange of device times and calculation of new differentials into Janevski's system and method to ensure consistently synchronized playback. Further to the disclosures discussed in [1d], [1e], and [1g], an ordinary artisan would have been motivated to periodically send timing information and update the timing information to account for drift between devices. Ex. C, ¶155. Indeed, as Janevski acknowledges, "the presentation may drift out-of-synch as it progresses." PA-1, 3:1-9. Balassanian provides a solution to this because "[o]ne skilled in the art will appreciate that the frequency of sending time domain messages can be adjusted to account for the anticipated drift between clocks of the rendering devices." PA-2, ¶29. An ordinary artisan would have had a reasonable expectation of success in this modification because it would have involved no more than a simple application of a known technique (Balassanian's device time exchanges and updating a differential calculation) to a known method (Janevski's synchronization method that may be

accomplished with different time synchronization) to achieve predictable results of a synchronized playback that minimizes drift. Ex. C, ¶155.

b. Claim 8. The first zone player of claim 7, wherein receiving the request to enter into the synchrony group with at least the second zone player comprises:
receiving the request to enter into the synchrony group with at least the second zone player over the LAN from one or both of (a) a controller device that is communicatively coupled to the first zone player over the LAN and (b) the second zone player.

Janevski, Balassanian, and Okamura render obvious claim 8 because, as noted in [1a], Janevski describes that PVR 114b (first zone player) receives a menu from PVR 114a (second zone player) that provides the option to join a synchronized viewing session with PVR 114a (second zone player). *See supra* Section [1a]; PA-1, 1:13, 6:15-26, 7:4-15, 7:57-63, 8:42-47, 11:4-21, FIG. 1; Ex. C, ¶156.

c. Claim 9. The first zone player of claim 7, wherein entering into the synchrony group with the second zone player comprises:
receiving, from the second zone player over the LAN, a notification that the second zone player is to begin operating as the master of the synchrony group and the first zone player is to begin operating as the slave of the synchrony group.

Janevski, Balassanian, and Okamura render obvious claim 9 because Janevski discloses that after PVR 114b (participant/slave) joins a session (*see* Section V.A.1.b-V.A.1.c), "[t]he initiator PVR 114a, in response, sends an originating synchronization message 402 to the new participant PVR 114b (step S604)," which causes PVR 114b to be synchronized to PVR 114a. PA-1, 11:12-20. An ordinary artisan would have understood that Janevski suggests that PVR 114a (second zone player) informs PVR 114b (first zone player) that PVR 114a will be operating as the master and that PVR 114b will be operating as the slave because PVR 114b aligns its playback to PVR114a. Ex. C, ¶157. An ordinary artisan would have thus found it obvious that the originating synchronization message 402 is a notification that corresponds to the additional limitations in

claim 9. Ex. C, ¶157. When operating the Janevski-Balassanian-Okamura combination, an ordinary artisan would have accomplished synchronization as described with respect to claim 1 above. Ex. C, ¶157.

To the extent that Patent Owner disputes that the originating synchronization message 402 constitutes a notification, an ordinary artisan would have found it obvious to include a notification about the roles of each device as part of the originating synchronization message. Ex. C, ¶158. Janevski further discloses that when one PVR "broadcast[s] a command that other participant PVRs [] follow its control function," this command informs each PVR of the role of the devices such that they both "know" their roles. PA-1, 15:38-47. An ordinary artisan would have found it obvious to include such information in the originating synchronization message 402 because it would have clarified roles from the onset and ensured that there is only one master at a time. Ex. C, ¶158. Indeed, such a modification would merely have been the use of a known technique to a known device ready for improvement to yield predictable results. Ex. C, ¶158. Moreover, an ordinary artisan would have found it obvious to try including such a notification in the originating synchronization message because it would have been one of a very finite set of design choices. Ex. C, ¶158.

d. Claim 12. The first zone player of claim 7, wherein receiving the audio information for the first audio track from the second zone player over the LAN comprises:

receiving a series of frames that each include a respective portion of the received audio information for the first audio track.[6]

Janevski, Balassanian, and Okamura render obvious claim 12 because Okamura teaches that audio data is transmitted in packets comprising event sequences/data blocks (i.e., frames). Ex. C, ¶159.

Janevski describes the use of frame misregistration to "'fine tune' the synchronization" when content is locally stored on each PVR. PA-1, 7:47-50, 10:30-62. As explained in claim 1, it would have been obvious to modify Janevski based on Okamura's teachings such that audio information is transmitted from one PVR to another alongside playback timing information. *See* Section V.A.2. With this modification, Janevski's frame synchronization would no longer be needed. Ex. C, ¶160.

Okamura discloses and renders obvious transmitting audio information in discrete portions associated with timing information. Specifically, Okamura discloses generating "a timestamp … one in every 8 sampling clocks (or 8 data blocks)," indicating that the audio stream is divided into blocks, each corresponding to a portion of the audio data. PA-3, 1:42-47. Okamura further explains that the timestamp "specifies the reproduction time at the receiving side" and is transmitted along with the audio data, such that each transmitted unit includes both timing information and a respective portion of the audio content. PA-3, 1:47-56. Because these timestamped data blocks are transmitted and processed sequentially at the receiving node, an ordinary artisan would have

[6] The Certificate of Correction applied to claim 12, deleting "the obtained audio information" and replacing it with "the received audio information." Ex. B, 3792, 3801.

understood that Okamura teaches receiving a series of frames, each including a respective portion of the received audio information. Ex. C, ¶161.

e. Claim 13. The first zone player of claim 12, wherein a first frame in the series of frames includes the indicator of the first future time.

Janevski, Balassanian, and Okamura render obvious claim 13 because Okamura discloses that "[t]he timestamp specifies the reproduction time at the receiving side of an event sequence" and that the timestamp is packaged into a packet that is comprised of "at least one data block." PA-3, 1:51-56, 4:24-38, 5:1-7. Based on these disclosures, an ordinary artisan would have understood that Okamura teaches that each data block may be associated with a timestamp. Ex. C, ¶162. Because these packets are sent in sequential order, an ordinary artisan would have understood that the timestamp in the first of these packets corresponds to the first future time. Ex. C, ¶162.

**f. Claim 14. The first zone player of claim 13, wherein the playback timing information further comprises, for each subsequent frame in the series of frames:
an indicator of a respective future time, relative to the clock time of the second zone player, at which the frame is to be synchronously played back by the first and second zone players.**

Janevski, Balassanian, and Okamura render obvious claim 14 for the same reasons explained above. Ex. C, ¶163; *see supra* Sections V.A.2, V.A.5.f. As explained in claim 1, Okamura discloses that a reproduction timestamp is transmitted from the transmitting node (i.e., PVR 114a/second zone player) to the receiving node (PVR 114b/first zone player). *See supra* Sections V.A.2, V.A.5.f. Okamura further details that "the packet containing at least one data block composed of at least one event sequence data and a timestamp added per a predetermined number of data blocks." PA-3, 3:48-54. When each packet contains one data block (i.e., frame), an ordinary

artisan would have found it obvious that it has one corresponding timestamp that depicts the time at which the event is to be played back (i.e., future time). Ex. C, ¶163.

g. Claim 18. The first zone player of claim 7, wherein the determined differential between the clock time of the first zone player and the clock time of the second zone player comprises an initial differential between the clock time of the first zone player and the clock time of the second zone player, and wherein the first zone player further comprises program instructions stored on the tangible, non-transitory computer-readable medium that are executable by the at least one processor to cause the first zone player to perform the following functions while operating as the slave of the synchrony group:
after determining the initial differential between the clock time of the first zone player and the clock time of the second zone player, receiving, from the second zone player over the LAN, updated clock timing information that includes at least one updated reading of the clock time of the second zone player; and
based on the updated timing information, determining an updated differential between the clock time of the first zone player and the clock time of the second zone player.

Janevski, Balassanian, and Okamura render obvious claim 18 for the same reasons discussed above in claim 4 because claim 18 is nearly identical to claim 4 but depends from claim 7. Ex. C, ¶164.

h. Claim 19. The first zone player of claim 18, further comprising program instructions stored on the tangible, non-transitory computer-readable medium that are executable by the at least one processor to cause the first zone player to perform the following functions while operating as the slave of the synchrony group:
receiving, from the second zone player over the LAN, (a) audio information for a second audio track and (b) playback timing information associated with the received audio information for the second audio track that comprises an indicator of a second future time, relative to the clock time of the second zone player, at which the first and second zone players are to initiate synchronous playback of the audio information for the second audio track;
updating the second future time to account for the updated differential between the clock time of the first zone player and the clock time of the second zone player; and
when the clock time of the first zone player reaches the updated second future time, initiating synchronous playback of the received audio information for the second audio track with the second zone player.

Janevski, Balassanian, and Okamura render obvious claim 19 for the same reasons discussed above in claim 1 and 7. Ex. C, ¶165. Claim 19 repeats the limitations of claims 1 and 7 but recites that the process is performed for "a second audio track." An ordinary artisan further would have found it obvious to repeat the method described in claims 1 and 7 for a second audio track because it would have involved the same steps, but for another track. Ex. C, ¶165. Further it is common for users to sequentially access multiple audio or video tracks. Ex. C, ¶165.

i. Claim 20. The first zone player of claim 7, further comprising program instructions stored on the tangible, non-transitory computer-readable medium that are executable by the at least one processor to cause the first zone player to perform the following functions while operating as the slave of the synchrony group:
receiving, from the second zone player over the LAN, a command to terminate playback of the first audio track; and in response to receiving the command to terminate, terminating playback of the received audio information for the first audio track.

Janevski, Balassanian, and Okamura render obvious claim 20 because Janevski teaches that its PVRs have the ability to "skip" and "pause" the playback of audio. PA-1, 1:25-37, 2:65-3:5, 6:18-21. Janevski describes that a user may input commands on PVR 114a to control the playback of audio on PVR 114b. PA-1, 2:65-3:5, 6:18-21. These commands include at least "stop, pause, fast forward, reverse" and also other commands like "skip[ping] any commercials." PA-1, 1:25-37, 2:65-3:5, 6:18-21. An ordinary artisan would have also found it obvious that stopping playback corresponds to, or at the very least, would render obvious *a command to terminate playback of the first audio track* because it would prevent the audio track from playing. Ex. C, ¶166. An ordinary artisan would have found it obvious that the skipping of commercials would also render obvious terminating the playback of the first audio track because it would prevent the audio track associated with the commercial from playing. Ex. C, ¶166.

j. Claim 24. The first zone player of claim 7, further comprising program instructions stored on the tangible, non-transitory computer-readable medium that are executable by the at least one processor to cause the first zone player to perform the following functions:
while operating as the slave of the synchrony group, receiving a request to disengage from the synchrony group;
in response to receiving the request to disengage from the synchrony group, disengaging from the synchrony group and transitioning from operating as the slave of the synchrony group to operating as a standalone zone player.

Janevski, Balassanian, and Okamura render obvious claim 24 because Janevski suggests that its PVRs return to operating independently after the "synchronized viewing session" has ended. Ex. C, ¶¶167-168.

Janevski discloses a synchronized viewing session in which one PVR acts as an initiator (master) and other PVRs act as participants (slaves). PA-1, 6:13-26. Participation and control within the session are governed by user commands, including commands such as stop, pause, and other playback functions that are propagated among devices. PA-1, 6:13-26. An ordinary artisan would have understood that such control commands include requests to cease participation in the synchronized session, i.e., to disengage from the synchrony group. Ex. C, ¶168. Upon receiving such a command, a participant PVR necessarily exits the synchronized session and ceases operating as a slave. Ex. C, ¶168. Because each PVR is independently capable of receiving and playing back content, the device would revert to its normal standalone mode of operation after disengaging. Ex. C, ¶168. This is consistent with Balassanian and Okamura, which both treat devices as independently operating units that temporarily coordinate through synchronization mechanisms, but otherwise maintain local control of playback through their own clocks and control logic. Ex. C, ¶168. Accordingly, the combined references render obvious receiving a

request to disengage from a synchrony group and, in response, disengaging and transitioning to standalone operation. Ex. C, ¶168.

k. Claim 28. The tangible, non-transitory computer-readable media of claim 25, wherein the determined differential between the clock time of the first zone player and the clock time of the second zone player comprises an initial differential between the clock time of the first zone player and the clock time of the second zone player, and wherein the tangible, non-transitory computer-readable media is provisioned with further software that is executable to cause the first zone player to perform additional functions comprising, while operating as a slave of the synchrony group:
after determining the initial differential between the clock time of the first zone player and the clock time of the second zone player, receiving, from the second zone player over the LAN, updated clock timing information that includes at least one updated reading of the clock time of the second zone player; and
based on the updated timing information, determining an updated differential between the clock time of the first zone player and the clock time of the second zone player.

Janevski, Balassanian, and Okamura render obvious claim 28 for the same reasons discussed above in claim 4 because claim 28 is nearly identical to claim 4 but depends from claim 25. Ex. C, ¶169.

B. Proposed Rejection 2: Claims 5, 22, and 29 Are Obvious Over Janevski, Balassanian, Okamura, and Kawamura

1. Claim 5. The method of claim 1, further comprising, while the first zone player is operating as a slave of the synchrony group:
receiving, from the second zone player over the LAN, a command to adjust an individual volume of the first zone player; and
in response to receiving the command, adjusting the individual volume of the first zone player.

Janevski, Balassanian, Okamura, and Kawamura render obvious claim 5 because Kawamura teaches "executing sound volume adjustment (volume up/down) for example." PA-4, 16-17, 36; Ex. C, ¶170.

Janevski teaches control functions such as "start, pause, rewind, fast forward," and synchronization of playback across devices, but does not expressly disclose volume adjustment. PA-1, 6:18-22; 8:42-52. Okamura mentions volume only in the context of preset playback conditions by disclosing that "in step S81, the audio data are reproduced and outputted to the reproduction channels (audio0 through audio7) under conditions such as volume, effect, etc. preset to these channels." PA-3, 21:1-14; Ex. C, ¶171. Okamura, however, also does not elaborate on this volume control. Ex. C, ¶171.

Kawamura teaches volume adjustment as another playback function. Kawamura discloses that "the remote commander 13 remotely controls the media player 11 for executing play control such as play, stop, pause, fast forward and rewind and remotely controls the headphone 12 for executing sound volume adjustment (volume up/down) for example." PA-4, 16-17; Ex. C, ¶172. The headphone control block 12B realizes sound output functions such as volume up, volume down, and mute. PA-4, 18; Ex. C, ¶172. The remote commander issues volume adjustment commands, which are transferred by the media player to the headphone for execution. PA-4, 20, 24; Ex. C, ¶172.

An ordinary artisan would have found it obvious to implement Kawamura's volume controls in the Janevski-Balassanian-Okamura system and method. Ex. C, ¶173. An ordinary artisan would have recognized that volume adjustment is a standard playback function, just like play, pause, or fast forward. Ex. C, ¶173. An ordinary artisan would have been motivated to combine Kawamura's volume adjustment playback function in addition to Janevski and Okamura's playback functions to implement a standard set of playback commands (including volume) in a synchronized playback system to transmit all relevant commands as needed. *Id.* An ordinary artisan would have specifically been motivated to implement volume controls as a command from PVR

114a (second zone player/master) to PVR 114b (first zone player/slave) because it would have improved the user's experience by simplifying the need to adjust volume at each individual device. Ex. C, ¶173.

An ordinary artisan would have had a reasonable expectation of success in the combination because joint volume control was a well-known feature at the time of invention. Ex. C, ¶174. An ordinary artisan would have had the knowledge and skills required to implement such programming because it was so common. Ex. C, ¶174. Thus, the combination of Janevski, Balassanian, Okamura, and Kawamura would have used known techniques (volume control via remote input) in known systems (multi-device synchronized playback), to achieve predictable results (volume adjustment during synchronized playback). *Id.* Common sense would also have suggested controlling the volume of audio players. *Id.*

2. Claim 22. The first zone player of claim 7, further comprising program instructions stored on the tangible, non-transitory computer-readable medium that are executable by the at least one processor to cause the first zone player to perform the following functions while operating as the slave of the synchrony group:
receiving, from the second zone player over the LAN, a command to adjust an individual volume of the first zone player; and
in response to receiving the command, adjusting the individual volume of the first zone player.

Janevski, Balassanian, Okamura, and Kawamura render obvious claim 22 for the same reasons discussed above in claim 5 because claim 22 is nearly identical to claim 5 but depends from claim 7. Ex. C, ¶175.

3. Claim 29. The tangible, non-transitory computer-readable media of claim 25, wherein the tangible, non-transitory computer-readable media is provisioned with further software that is executable to cause the first zone player to perform additional functions comprising, while operating as a slave of the synchrony group:
receiving, from the second zone player over the LAN, a command to adjust an individual volume of the first zone player; and
in response to receiving the command, adjusting the individual volume of the first zone player.

Janevski, Balassanian, Okamura, and Kawamura render obvious claim 29 for the same reasons discussed above in claim 5 because claim 29 is nearly identical to claim 5 but depends from claim 25. Ex. C, ¶176.

C. Proposed Rejection 3: Claims 6, 23, and 30 Are Obvious Over Janevski, Balassanian, Okamura, and Muchow

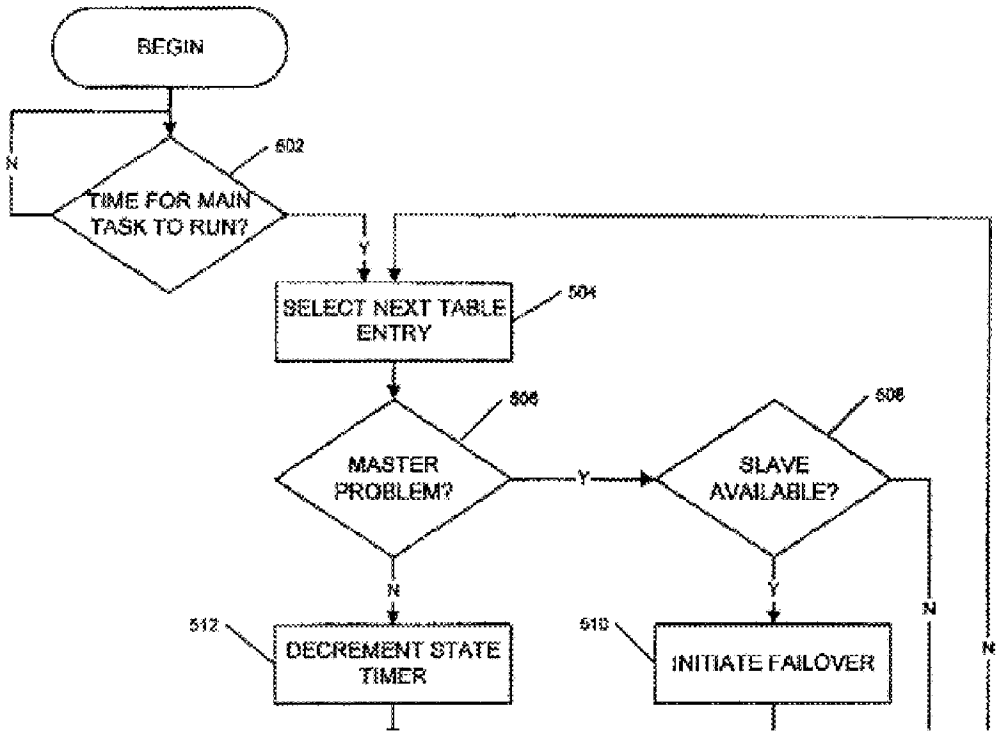
1. Claim 6. The method of claim 1, wherein the method further comprises:
while operating as the slave of the synchrony group, receiving, from the second zone player over the LAN, control information that enables the first zone player to begin operating as the master of the synchrony group;
and in response to receiving the control information, transitioning from operating as the slave of the synchrony group to operating as the master of the synchrony group.

Janevski, Balassanian, Okamura, and Muchow render obvious claim 6 because Janevski discloses that the PVRs are configured to perform and switch between both master and slave roles (PA-1, 6:18-21, 15:32-47) and Muchow provides implementation details for a handoff process involving control information (PA-5, 4:28-36, 5:3-14, 11:33-42, 12:11-16, 26:56-62, 27:1-21). Ex. C, ¶¶177-182.

Janevski discloses that its PVRs are configured to perform and switch between both master and slave roles. Ex. C, ¶178. For example, Janevski describes that the roles of PVR 114a (second zone player/master) and PVR 114b (first zone player/slave) may be switched when the user of PVR 114b inputs a command such as fast forward or rewind. PA-1, 6:18-21 ("Initially, the 'initiator'

is the PVR that starts the session, although that role is handed off to any PVR that, as directed by its user, performs a control function (e.g., stop, pause, fast forward, reverse)."), 15:32-47 ("an initiator PVR 114a that receives a command that changes the watching mode knows that it is no longer the initiator PVR 114a, and a participant PVR 114b that issues the command knows that it is now the initiator PVR 114a."). Janevski thus discloses that the PVRs are configured to transition between roles when a control command is entered on one of the PVRs. Ex. C, ¶178. Janevski, however, does not explain whether the switch occurs in other situations.

Muchow describes a "method that can provide efficient failure recovery and configuration information exchanges between nodes of a networked computer system." PA-5, 1:50-52. In Muchow, "[e]ach node executes a … 'main task,'" including the master node. PA-5, 5:3-14; Ex. C, ¶179. A "monitor task" "monitor[s] the operation of the node itself and/or various functions or components associated with the node (e.g., the CPU …)." PA-5, 26:56-67; *see also id.*, 4:28-36, 5:3-14, 11:33-42, 12:11-16, 27:1-21; Ex. C, ¶179. "[T]he monitor task … determines the health and/or operational status," and "determines whether a problem … indicates that the health and/or operational status of one or more application instances is degraded." PA-5, 27:15-60, Fig. 11. Next, "[a] determination is then made, … whether … a problem has occurred with the master." *Id.*, 16:7-28. If "a problem has occurred, then a determination is made, … whether a slave is available to take over master operations." *Id.*, 16:29-41. "If a slave is available, then the node initiates a failover … by sending out a Resignation message." *Id.*



Id., Fig. 5 (excerpted).

This process, while including more implementation detail, is like the goals recited in Janevski. Ex. C, ¶180. Janevski's "participant PVR 114b" can "assume[] the role of initiator PVR 114a," which discloses the "PVR 114a" (first zone player) migrating the "initiator" (master) to the "PVR 114b" (second zone player). PA-1, 15:38-43; Ex. C, ¶180. This "role is handed off." PA-1, 6:18-21; Ex. C, ¶180. As combined, it would have been obvious that a migration is initiated where the "initiator" "role is handed off" (as in Janevski) when Muchow's "resignation process" "failover" occurs. PA-1, 15:38-43, 6:18-21; PA-5, 3:55-60, 16:29-41; Ex. C, ¶180.

The combination of the Janevski-Balassanian-Okamura system and method with Muchow would have been obvious, as explained for Proposed Rejection 1. *See supra* Section V.A; Ex. C, ¶181. An ordinary artisan further would have been motivated to combine the Janevski-

Balassanian-Okamura system with Muchow's initiating migration of the master device role and reasonably expected success in doing so. Ex. C, ¶181.

An ordinary artisan would also have been motivated to combine Muchow's master role migration initiation into the Janevski-Balassanian-Okamura system and method to ensure a fault tolerant system by enabling another "PVR" in Janevski's system become the "initiator" when the current "initiator PVR" fails. PA-1, 6:18-21, 15:38-43; Ex. C, ¶182. As explained above, Janevski already teaches "hand[ing] off" the initiator role. Ex. C, ¶182. An ordinary artisan would have further reasonably expected success because implementing this scheme in the Janevski-Balassanian-Okamura system and method would have used known features according to their known functions (Janevski's existing initiator/participant handoff) to achieve predictable results (Janevski's initiator PVR initiates the existing initiator/participant handoff after determining a fault occurred (as in Muchow)). Ex. C, ¶182.

2. Claim 23. The first zone player of claim 7, further comprising program instructions stored on the tangible, non-transitory computer-readable medium that are executable by the at least one processor to cause the first zone player to perform the following functions:
while operating as the slave of the synchrony group, receiving, from the second zone player over the LAN, control information that enables the first zone player to begin operating as the master of the synchrony group; and
in response to receiving the control information, transitioning from operating as the slave of the synchrony group to operating as the master of the synchrony group.

Janevski, Balassanian, Okamura, and Muchow render obvious claim 23 for the same reasons discussed above in claim 6 because claim 23 is nearly identical to claim 6 but depends from claim 7. Ex. C, ¶183.

3. Claim 30. The tangible, non-transitory computer-readable media of claim 25, wherein the tangible, non-transitory computer-readable media is provisioned with further software that is executable to cause the first zone player to perform additional functions comprising:
while operating as the slave of the synchrony group, receiving, from the second zone player over the LAN, control information that enables the first zone player to begin operating as the master of the synchrony group; and
in response to receiving the control information, transitioning from operating as the slave of the synchrony group to operating as the master of the synchrony group.

Janevski, Balassanian, Okamura, and Muchow render obvious claim 30 for the same reasons discussed above in claim 6 because claim 30 is nearly identical to claim 6 but depends from claim 25. Ex. C, ¶184.

D. No Secondary Considerations Exist

Patent Owner alleged secondary considerations during reexamination of a family member patent, U.S. Patent No. 9,213,357. Ex. F-3, 3-4. Those secondary considerations do not apply to the '953 patent because the claims of the '357 patent are materially different from those challenged in the instant Request. Ex. C, ¶¶185-186. Any evidence of secondary considerations must have a nexus to this limitation. *See* M.P.E.P. § 716.01(b) ("Where the offered secondary consideration actually results from something other than what is both claimed and novel in the claim, there is no nexus to the merits of the claimed invention.") (quoting *In re Kao*, 639 F.3d 1057, 1068 (Fed. Cir. 2011)).

The '357 patent claims do not recite the allegedly allowable "future time" limitation of the '953 patent. *Compare* Ex. F-3, 3-4, *with* Ex. A, claim 1; Ex. B, 3537-3538; *see also supra* §§ I.B, IV.A, IV.D; Ex. C, ¶¶185-186. Because the claims of the '357 patent are materially different from the challenged claims 1, 4-9, 12-14, 18-20, 22-25, and 28-30 of the '953 patent, any alleged evidence of secondary considerations relied on for the '357 patent is insufficient to establish a

nexus to the challenged claims. *See* M.P.E.P. § 716.01(b) (Nexus Requirement and Evidence of Nonobviousness) ("If the evidence is to be given substantial weight in the determination of obviousness or nonobviousness, evidence of secondary considerations must be relevant to the subject matter as claimed, and therefore the examiner must determine whether there is a nexus between the merits of the claimed invention and the evidence of secondary considerations.") (citing *Ashland Oil, Inc. v. Delta Resins & Refractories, Inc.*, 776 F.2d 281, 305 n.42, 227 USPQ 657, 673-674 n. 42 (Fed. Cir. 1985), *cert. denied*, 475 U.S. 1017 (1986)); Ex. C, ¶¶185-186.

VI. RELATED PROCEEDINGS AND STATUTORY ESTOPPEL

A. Related Proceedings

Pursuant to M.P.E.P. § 2282, Requester is aware that the '953 patent is, or has been, involved in the following proceedings:

Name	Number	Court	Filed
Certain Audio Players and Controllers, Components Thereof, and Products Containing Same	Inv. No. 337-TA-1191	USITC	Jan. 7, 2020
Sonos, Inc. v. Google LLC	2:20-cv-00169	C.D. Cal.	Jan. 7, 2020
Google LLC v. ITC	22-1573	CAFC	Mar. 24, 2022

B. Certification Regarding Statutory Estoppel

As required by 37 C.F.R. § 1.510(b)(6), Google certifies that the statutory estoppel provisions of 35 U.S.C. § 315(e)(1) and 35 U.S.C. § 325(e)(1) do not prohibit Google from filing the instant request for *ex parte* reexamination.

C. Certification of Service on Patent Owner

As required by 37 C.F.R. § 1.510(b)(5), Google certifies that it has served a copy of this Request in its entirety on counsel for Patent Owner and assignee Sonos, Inc. at the address below:

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West Palm Beach, FL 33401
United States

D. Request for Expedited Examination

Due to the ongoing nature of the above-identified proceeding, Requester respectfully urges that, pursuant to 35 U.S.C. § 305, this Request be granted and reexamination be conducted not only with "special dispatch," but also with "priority over all other cases" in accordance with M.P.E.P. § 2261.

E. Reservation of Rights

Requester reserves all rights and defenses available, including, without limitation, defenses as to invalidity, unenforceability, and non-infringement regarding the '953 patent. Accordingly, any interpretation or construction of the claims or particular terms, phrases, or clauses made in this proceeding, either implicitly or explicitly, are solely for the purpose of this proceeding and should not be viewed as constituting, in whole or in part, Requester's own interpretation or construction. Moreover, because the *ex parte* reexamination procedure does not permit challenges under 35 U.S.C. § 112, Requester has not included any indefiniteness arguments herein. Requester reserves the right, however, to make such arguments in other proceedings.

VII. Conclusion

For at least the reasons detailed above, the prior art in this Request presents substantial new questions of patentability that were not considered by the Office with respect to the challenged claims 1, 4-9, 12-14, 18-20, 22-25, and 28-30 of the '953 patent. Moreover, and as explained in the proposed rejections set forth herein, the challenged claims would have been obvious over the prior art. Accordingly, reexamination should be granted and the challenged claims cancelled.

If there are any other fees due in connection with the filing of this paper not already paid, please charge the fees to our Deposit Account No. 06-0916.

Date: August 6, 2026

Respectfully submitted,

FINNEGAN, HENDERSON, FARABOW, GARRETT & DUNNER, LLP

/Jeffrey C. Totten/
Jeffrey C. Totten
Reg. No. 65,229

Attachments: (1) Certificate of Service to Patent Owner
(2) Information Disclosure Statement and Form PTO/SB/08

CERTIFICATE OF SERVICE

Requester certifies that a complete copy of this Request, with associated Exhibits, has been served in its entirety, via USPS, on the Patent Owner's counsel of record in U.S. Patent No. 10,209,953, at the following address:

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Dated: August 6, 2026

Respectfully submitted,
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