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571-272-7822

Paper 16
Entered: February 21, 2020

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

GOOGLE LLC,
Petitioner,

v.

VIRENTEM VENTURES, LLC,
Patent Owner.

IPR2019-01241
Patent 7,683,903 B2

Before MEREDITH C. PETRAVICK, JENNIFER MEYER CHAGNON, and TERRENCE W. McMILLIN, *Administrative Patent Judges.*

McMILLIN, *Administrative Patent Judge.*

DECISION
Granting Institution of *Inter Partes* Review
35 U.S.C. § 314

I. INTRODUCTION

Google LLC ("Petitioner")[1] filed a Petition to institute an *inter partes* review of claims 1–4, 7, 12–14, 17, and 22 of U.S. Patent No. 7,683,903 B2 (Ex. 1001, the "'903 patent") pursuant to 35 U.S.C. § 311 *et seq*. Paper 1 ("Petition" or "Pet."). Virentem Ventures, LLC ("Patent Owner") filed a Preliminary Response to the Petition. Paper 14 ("Preliminary Response" or "Prelim. Resp.").

We have authority under 35 U.S.C. § 314, which provides that an *inter partes* review may not be instituted unless the information presented in the Petition and the Preliminary Response shows that "there is a reasonable likelihood that the petitioner would prevail with respect to at least 1 of the claims challenged in the petition." 35 U.S.C. § 314(a) (2018); *see also* 37 C.F.R § 42.4(a) (2019) ("The Board institutes the trial on behalf of the Director."). After considering the Petition, the Preliminary Response, and the evidence of record, we institute an *inter partes* review as to claims 1–4, 7, 12–14, 17, and 22 of the '903 patent.

A. Related Proceedings

The parties identify *Virentem Ventures, LLC v. YouTube, LLC*, Case No. 1:18-cv-917-MN (D. Del.) as a related matter involving the '903 patent, as well as U.S. Patent Nos. 8,345,050; 8,068,108; 9,785,400; 6,598,228; 7,100,188; 8,566,885; 7,043,433; 9,185,380; 6,801,888; and 7,299,184. Pet. 1; Paper 3, 1. Petitioner indicates that it is "concurrently filing [*inter partes* review] petitions against each of these patents except for U.S. Patent Nos. 6,801,888 and 7,299,184." Pet. 2; *see* IPR2019-01236, -01237

[1] Petitioner identifies Google LLC and YouTube LLC as the real parties-in-interest to this proceeding. Pet. 1.

(pertaining to U.S. Patent No. 8,345,050); IPR2019-01238, -01239 (pertaining to U.S. Patent No. 8,068,108); IPR2019-01240 (also pertaining to the '903 patent); IPR2019-01242, -01243 (pertaining to U.S. Patent No. 9,785,400); IPR2019-01244 (pertaining to U.S. Patent No. 6,598,228); IPR2019-01245 (pertaining to U.S. Patent No. 7,100,188); IPR2019-01246 (pertaining to U.S. Patent No. 8,566,885); IPR2019-01247 (pertaining to U.S. Patent No. 7,043,433); and IPR2019-01248 (pertaining to U.S. Patent No. 9,185,380).

Patent Owner also identifies Application No. 15/700,096 (filed Sept. 9, 2017)[2] as related to this proceeding. Paper 3, 1.

The '903 patent is also the subject of co-pending IPR2019-01240.[3]

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[2] A review of USPTO records indicates that this application was abandoned on August 16, 2019.

[3] Patent Owner requests that we exercise our discretion to deny institution because Petitioner has challenged a subset of the claims challenged in this proceeding based on different cited art in IPR2019-01240. Prelim. Resp. 5–6, 31–32. After the Petition in this case was filed on June 21, 2019, the USPTO issued the July 2019 Update to the USPTO Office Trial Practice Guide, 84 Fed. Reg. 33,925 (July 16, 2019) (available at https://www.uspto.gov/sites/default/files/documents/trial-practice-guide-update3.pdf), which states: "[O]ne petition should be sufficient to challenge the claims of a patent in most situations." *Id.* at 26. In accordance, with the July 2019 Trial Practice Guide Update, the Board issued an order requesting that Petitioner rank the petitions in the order in which Petitioner wished the Board to consider the merits of the petitions. Paper 9. In response, the Petitioner asked that the Board consider the Petition in this proceeding prior to the Petition in IPR2019-01240. Paper 10, 1. Thereafter, Patent Owner argued that the petitions in both proceedings should be denied. Paper 11. We do not believe it is appropriate to deny both petitions on this basis. As this is the first of the two Petitions challenging the '903 patent that we have taken up for consideration and in light of the merits of this Petition, we decline to exercise our discretion to deny institution in this proceeding solely because Petitioner has filed another Petition challenging the same patent.

B. The '903 Patent

The '903 patent is titled, "Management of Presentation Time in a Digital Media Presentation System with Variable Rate Presentation Capability." Ex. 1001, code (54). By way of background, the '903 patent explains that traditional digital rendering systems, such as RealNetworks RealPlayer digital media players, maintain an internal variable during playback of media content that reflects a current presentation time, which is referred to as "Current Time." *Id.* at 1:23–27. Current Time reflects a current position in the media content, starting at zero at the beginning of the media content. *Id.* at 1:27–32. The '903 patent explains that Current Time conflates two different properties of media playback: (1) "Presentation Time," which is the time elapsed since the beginning of the media content presentation; and (2) "Content Time," which is the location in the media content stream that is currently being played. *Id.* at 1:50–66. The '903 patent also describes that "Data Time" is a time value associated with each content element "specifying how long it would take to reach that location, starting from the beginning of the media content, and playing at normal rate." *Id.* at 1:66–2:7. The '903 patent explains that "Presentation Time and Data Time are identical in traditional players, because traditional players can only present media content at a fixed 'normal' rate." *Id.* at 2:8–10. In the case of media players enhanced with Time-Scale Modification (TSM) capability, the player can present media content at various rates, and thus Presentation Time and Data Time may diverge. *Id.* at 2:10–15. For example, a player with TSM functionality could play a 60-second clip in only 30 seconds if the content is presented at a fixed rate that is twice normal rate. *Id.* at 2:15–19. The '903 patent describes two problems resulting from

the possible disparity between Presentation Time and Data Time in media players with TSM functionality. *Id.* at 2:20–35. A first problem is that "the significance of the time value distributed to multiple objects is, in general, ambiguous." *Id.* at 2:27–30. A second problem "is that Data Time does not, in general, equal Presentation Time, and the calculation, storage, and distribution of a single time value is inadequate to specify both values." *Id.* at 2:30–35. In particular, the '903 patent explains that it is common for media players to rely on an audio renderer to calculate and update the Current Time value. *Id.* at 2:36–39. When "a media player does in fact acquire the Current Time value from the audio renderer, the value that the audio renderer will return to the system will typically be the Presentation Time." *Id.* at 2:49–52. This creates a problem in media players with TSM functionality because "most of the rest of the system needs Data Time," and thus "most of the rest of the system can no longer employ the value returned by the audio renderer object." *Id.* at 2:53–55.

The invention manages "Presentation Time in a digital rendering system for presentation of temporally-ordered data when the digital rendering system includes a Variable Rate Presentation capability." Ex. 1001, 2:62–65. Figure 1 of the '903 patent is reproduced below.

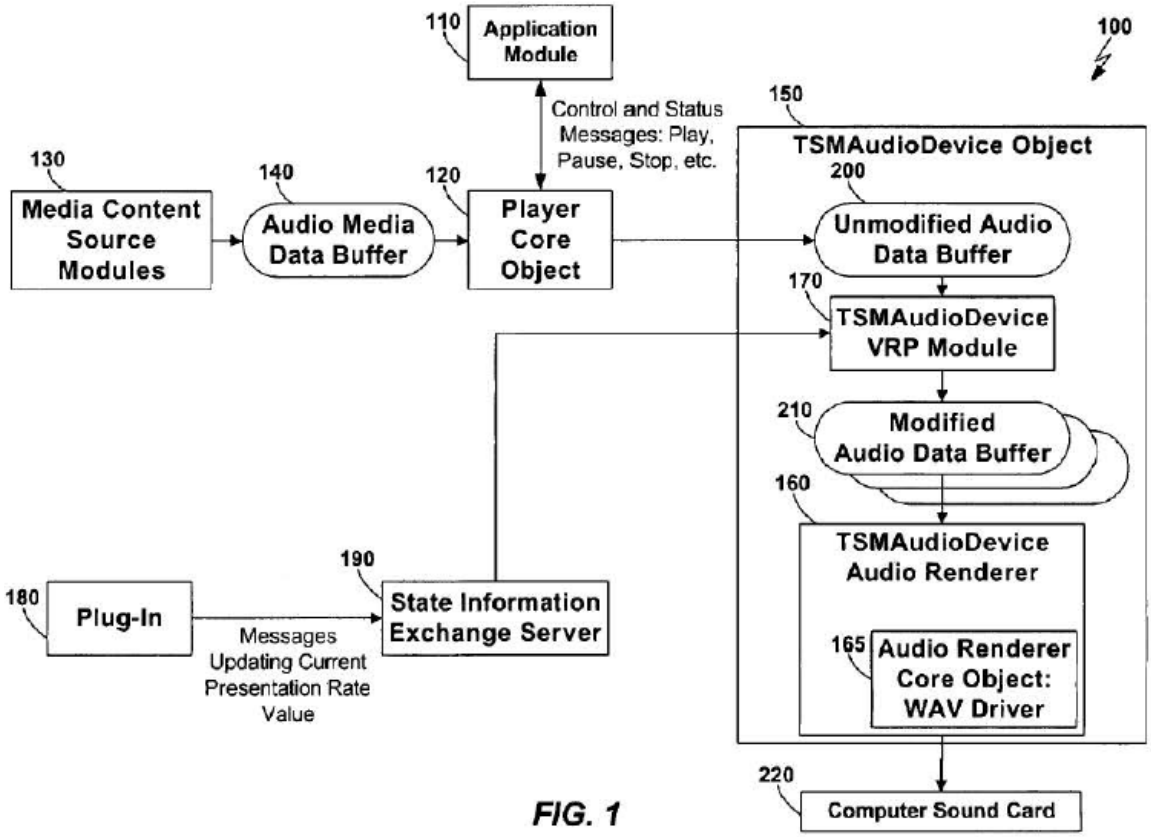

FIG. 1

Figure 1, above, depicts "a block diagram of a Presentation System embodied as a RealNetworks RealPlayer application running on a computer." *Id.* at 5:27–29. Presentation System 100 includes an application module 110 which communicates control and status messages (e.g., Play, Pause, Stop), to Player Core object 120. *Id.* at 6:4–7. "Temporal Sequence Presentation Data" or "Presentation Data" are embodied as streaming media content and are delivered to the RealPlayer application. *Id.* at 6:7–13. Presentation Data are received by media content source module(s) 130, and are placed in audio media data buffers 140. *Id.* at 6:13–18. TSMAudioDevice object 150 combines functions of the Renderer for audio data (TSMAudioDevice Audio Renderer 160) and a Variable Rate Presentation Module. *Id.* at 6:49–54. The '903 patent notes that although the RealNetworks RealPlayer application does not natively include support

for variable rate playback, plug-in 180 adds variable rate playback capability to the RealPlayer application. *Id.* at 6:58–66. Plug-in 180 communicates with TSMAudioDevice object 150 by sending messages that specify a desired playback or presentation rate through an object called State Information Exchange Server 190 ("SIX Server 190"). *Id.* at 7:1–11. TSMAudioDevice object 150 accepts messages from State Information Exchange Server 190 ("SIX Server 190") that specify a desired playback or presentation rate. *Id.* at 7:5–7. The '903 patent notes that Player Core object 120 of the RealPlayer application includes methods to query the Current Time, and Player Core object 120 interprets all returned times as Data Times. *Id.* at 7:50–62. In order to support the concept of Presentation Times that are different than Data Times, according to one embodiment of the '903 patent, TSMAudioDevice object 150 performs conversion of Presentation Time into Data Time (as needed by Player Core object 120). *Id.* at 7:62–67.

C. Challenged Claims

Petitioner challenges claims 1–4, 7, 12–14, 17, and 22 of the '903 patent. Pet. 2–3. Of the challenged claims, claims 1 and 12 are independent method claims and claims 13 and 22 are independent apparatus claims. Ex. 1001, 23:19–26:65. Claim 1 recites:

> 1. A method, performed by at least one machine, for rendering temporal sequence presentation data in a machine-implemented rendering system, the temporal sequence presentation data being tangibly stored in a first computer-readable medium, the method comprising steps of:
>
> (A) maintaining a value of a presentation time parameter tangibly stored in a second computer-readable medium and representing an amount of time elapsed during rendering of a portion of the temporal sequence presentation data;

(B) providing the value of the presentation time parameter to a first component of the rendering system;

(C) maintaining a value of a data time parameter tangibly stored in a third computer-readable medium and representing an amount of time required by the rendering system to render the portion of the temporal sequence presentation data at a default presentation rate; and

(D) providing the value of the data time parameter to a second component of the rendering system;

wherein the value of the presentation time parameter is not equal to the value of the data time parameter.

Id. at 23:19–39. Claim 12 recites:

12. A method, performed by at least one machine, for rendering temporal sequence presentation data in a machine-implemented rendering system, the temporal sequence presentation data being tangibly stored in a first computer-readable medium, the method comprising steps of:

(A) receiving a request from a first component of the rendering system for a first current time;

(B) maintaining a value of a presentation time parameter tangibly stored in a second computer-readable medium and representing an amount of time elapsed during rendering of a portion of the temporal sequence presentation data by the rendering system;

(C) providing the value of the presentation time parameter to the first component in response to the request;

(D) receiving a request from a second component of the rendering system for a second current time;

(E) maintaining a value of a data time parameter tangibly stored in a third computer-readable medium and representing an amount of time required to render the portion of the temporal sequence presentation data at a default presentation rate; and

(F) providing the value of the data time parameter to the second component in response to the request;

wherein the value of the presentation time parameter is not equal to the value of the data time parameter.

Id. at 24:52–25:9. Claim 13 recites:

> 13. A device for rendering temporal sequence presentation data in a machine-implemented rendering system, the temporal sequence presentation data being tangibly stored in a first computer-readable medium, the device comprising at least one processor and at least one second computer-readable medium tangibly storing computer program instructions for:
>
> maintaining a value of a presentation time parameter tangibly stored in a third computer-readable medium and representing an amount of time elapsed during rendering of a portion of the temporal sequence presentation data by the rendering system;
>
> providing the value of the presentation time parameter to a first component of the rendering system;
>
> maintaining a value of a data time parameter that is not equal to the value of the presentation time parameter and which represents an amount of time required by the rendering system to render the portion of the temporal sequence presentation data at a default presentation rate, the data time parameter being tangibly stored in a fourth computer-readable medium; and
>
> providing the value of the data time parameter to a second component of the rendering system.

Id. at 25:10–31. Claim 22 recites:

> 22. A device for rendering temporal sequence presentation data in a machine-implemented rendering system, the temporal sequence presentation data being tangibly stored in a first computer-readable medium, the device comprising at least one processor and at least one second computer-readable medium tangibly storing computer program instructions for:
>
> receiving a request from a first component of the rendering system for a first current time;
>
> maintaining a value of a presentation time parameter tangibly stored in a third computer-readable medium and representing an amount of time elapsed during rendering of a portion of the temporal sequence presentation data by the rendering system;
>
> providing the value of the presentation time parameter to the first component in response to the request;

> receiving a request from a second component of the rendering system for a second current time;
>
> maintaining a value of a data time parameter that is not equal to the value of the presentation time parameter and which represents an amount of time required to render the portion of the temporal sequence presentation data at a default presentation rate, the data time parameter being tangibly stored in a fourth computer-readable medium; and
>
> providing the value of the data time parameter to the second component in response to the request.

Id. at 26:40–65. Although claim 1 is directed to a method and claim 13 is directed to a device, outside of the preambles, the claims recite the same method steps or elements. And, although claim 12 is directed to a method and claim 22 is directed to a device, outside of the preambles, the claims recite the same method steps or elements. The same is true of the challenged dependent claims.

D. The Asserted Grounds

Petitioner challenges claims 1–4, 7, 12–14, 17, and 22 of the '903 patent on the following grounds:

Claims Challenged	35 U.S.C. §	Reference(s)/Basis
1–4, 12–14, 22	103(a)	Nelson[4]
7, 17	103(a)	Nelson, DeMoney[5]

Petitioner relies on the Declaration of Dan Schonfeld, Ph.D. (Ex. 1002) which provides evidence in support of the contentions in the Petition. Dr. Schonfeld has been retained by Petitioner as an independent expert consultant. Ex. 1002 ¶ 1. In the Preliminary Response, Patent Owner fails to discuss the Schonfeld Declaration or to directly address any of the testimony it contains. *See generally* Prelim. Resp. As such, at this stage of

[4] US Patent No. 5,719,786 (Ex. 1006) filed Feb. 3, 1993.
[5] US Patent No. 6,065,050 (Ex. 1012) filed June 5, 1996.

the proceeding, the Schonfeld Declaration is uncontradicted. Patent Owner has not submitted a declaration or other testimonial evidence of an expert in support of its contentions.

II. ANALYSIS

We analyze Petitioner's asserted grounds of unpatentability and Patent Owner's arguments in its Preliminary Response to determine whether Petitioner has met the threshold standard of 35 U.S.C. § 314(a).

A. Claim Construction

"In an *inter partes* review proceeding, a claim of a patent . . . shall be construed using the same claim construction standard that would be used to construe the claim in a civil action under 35 U.S.C. § 282(b), including construing the claim in accordance with the ordinary and customary meaning of such claim as understood by one of ordinary skill in the art and the prosecution history pertaining to the patent." 37 C.F.R. § 42.100(b). In applying a district court-type claim construction, we are guided by the principle that the words of a claim "are generally given their ordinary and customary meaning," as understood by a person of ordinary skill in the art at the time of the invention. *Phillips v. AWH Corp.*, 415 F.3d 1303, 1312–13 (Fed. Cir. 2005) (en banc) (citation omitted). "In determining the meaning of the disputed claim limitation, we look principally to the intrinsic evidence of record, examining the claim language itself, the written description, and the prosecution history, if in evidence." *DePuy Spine, Inc. v. Medtronic Sofamor Danek, Inc.*, 469 F.3d 1005, 1014 (Fed. Cir. 2006) (citing *Phillips*, 415 F.3d at 1312–17). There is a "heavy presumption," however, that a claim term carries its ordinary and customary meaning. *CCS Fitness, Inc. v. Brunswick Corp.*, 288 F.3d 1359, 1366 (Fed. Cir. 2002) (citation omitted).

We are also guided by the principle that we only construe claim terms if, and to the extent that, it is necessary for the purpose of the proceeding, here, to determine whether to institute an *inter partes* review. *See, e.g.*, *Wellman, Inc. v. Eastman Chem. Co.*, 642 F.3d 1355, 1361 (Fed. Cir. 2011) ("[C]laim terms need only be construed 'to the extent necessary to resolve the controversy.'") (quoting *Vivid Techs., Inc. v. Am. Sci. & Eng'g, Inc.*, 200 F.3d 795, 803 (Fed. Cir. 1999)).

The District Court presiding over the litigation between the parties involving the '903 patent issued an order (Ex. 2005) construing certain claim terms. As provided for in the rules governing this proceeding, we have considered the District Court's claim construction order. *See* 37 C.F.R. § 42.100(b) ("Any prior claim construction determination concerning a term of the claim in a civil action, or a proceeding before the International Trade Commission, that is timely made of record in the *inter partes* review proceeding will be considered."). The District Court construed the following terms from the challenged claims of the '903 patent: "presentation time parameter," "data time parameter," "default," "presentation rate," "current time," "rend[er]ing system," "portion," "tangibly stored in a . . . computer-readable medium," "temporal sequence presentation data," and "component." Ex. 2005, 1–4. In addition, the transcript of the claim construction hearing before the District Court was filed as Exhibit 2004. We have reviewed the District Court's claim construction order and the hearing transcript.

Petitioner provides proposed constructions of the following claim terms: "temporal sequence presentation data," "rendering system," "tangibly stored in a . . . computer-readable medium"/ "a computer-readable

medium tangibly storing," and "current time." Pet. 13–19. Patent Owner contends, "it is not necessary for the Board to resolve the construction of these claim terms to resolve the institution question." Prelim. Resp. 29. Accordingly, Patent Owner "does not propose any specific constructions, and respectfully requests that the Board not adopt Petitioner's unnecessary constructions." *Id.* at 30–31. We agree with Patent Owner. As shown below, explicit construction of the claim terms proposed by Petitioner is unnecessary to resolve the current disputes between the parties in order to make this determination as to whether to institute *inter partes* review.

B. Legal Standards

A patent claim is unpatentable as obvious if the differences between the claimed subject matter and the prior art are such that the subject matter, as a whole, would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. *KSR Int'l Co. v. Teleflex Inc.*, 550 U.S. 398, 406 (2007). The question of obviousness is resolved on the basis of underlying factual determinations including: (1) the scope and content of the prior art; (2) any differences between the claimed subject matter and the prior art; (3) the level of ordinary skill in the art; and (4) objective evidence of nonobviousness.[6] *Graham v. John Deere Co.*, 383 U.S. 1, 17–18 (1966).

"In an [*inter partes* review], the petitioner has the burden from the onset to show with particularity why the patent it challenges is unpatentable." *Harmonic Inc. v. Avid Tech., Inc.*, 815 F.3d 1356, 1363 (Fed. Cir. 2016) (citing 35 U.S.C. § 312(a)(3) (requiring *inter partes* review

[6] Neither party presents any objective evidence of nonobviousness or any related arguments for us to consider at this stage of the proceeding.

petitions to identify "with particularity . . . the evidence that supports the grounds for the challenge to each claim")). Petitioners cannot satisfy their burden of proving obviousness by employing "mere conclusory statements." *In re Magnum Oil Tools Int'l, Ltd.*, 829 F.3d 1364, 1380 (Fed. Cir. 2016).

C. Level of Skill in the Art

With regard to the level of ordinary skill in the art, Petitioner contends that a person of ordinary skill would have either "(a) a Master's or doctoral degree in computer science, electrical engineering, or a similar discipline" or "(b) a Bachelor's degree in computer science, electrical engineering, or a similar discipline and at least two years of work experience in content presentation systems, or a related area." Pet. 4 (citing Ex. 1002 (Schonfeld Decl.) ¶¶ 19–20). Patent Owner does not address this issue. *See generally* Prelim. Resp. We find, based on the current record, Petitioner's contention to be reasonable, and, for purposes of this institution decision, we adopt the level of ordinary skill in the art as proposed by Petitioner.

D. Obviousness Challenge Based on Nelson

Petitioner contends that claims 1–4, 12–14, and 22 would have been obvious in view of Nelson. Pet. 2–3, 19–64.

1. Nelson

Nelson was filed on February 3, 1993, and issued on February 17, 1998. Ex. 1006, codes (22), (45). The earliest priority date claimed for the '903 patent is based on a provisional filing date of December 12, 2000. *See* Pet. 3 n.2. Therefore, Nelson is prior art to the '903 patent under 35 U.S.C. § 102(b). *See id.* at 3. Patent Owner does not contest the prior art status of Nelson. *See generally* Prelim. Resp.

Nelson is titled, "Digital Media Data Stream Network Management System." Ex. 1006, code (54). Nelson is directed to a "computer-based media data processor for controlling transmission of digitized media data in a packet switching network." *Id.*, code (57) (Abstract). Nelson "relates to the management of digitized media stream data, e.g., digitized video and particularly relates to the capture, storage, distribution, access and presentation of digital video within a network computing environment." *Id.* at 1:7–10. Nelson discloses a digital video management system (DVMS) that provides the ability to capture, store, transmit, access, process, and present live or stored media stream data, independent of its capture or storage location, in either a stand-alone or a network environment. *Id.* at 5:45–50.

Figure 4 of Nelson is reproduced below.

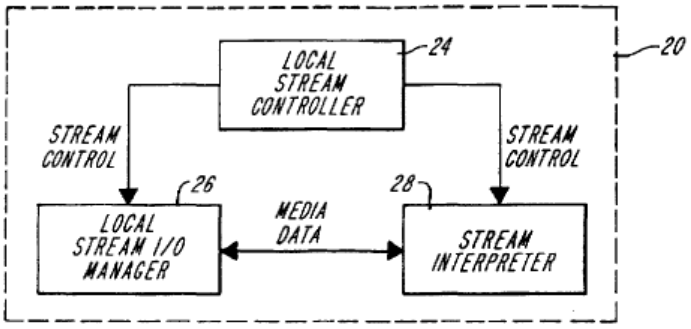

FIG. 4

Figure 4 of Nelson depicts a schematic diagram of a network implementation of the digital video management system (DVMS). *Id.* at 5:4–6. The description of Figure 4 states:

> [T]he local DVMS manager 20 consists of three modules: the stream controller 24, stream input/output (I/O) manager 26, and the stream interpreter 28. This modularity is exploited in the DVMS design to separate the flow of data in a media data streams from the flow of control information for that media

> stream through the system. Based on this data and control separation, streams data and stream control information are each treated as producing distinct interactions among the three manager modules, which operate as independent agents.

Id. at 7:57–66. The description of Figure 4 further states:

> The stream interpreter module 28 is responsible for managing the dynamic computer-based representation of audio and video as that representation is manipulated in a standalone computer or a computer linked into a packet network. This dynamic management includes synchronization of retrieved audio and video streams, and control of the rate at which the audio and video information is presented during a presentation sequence.

Id. at 8:25–32. Figure 5 of Nelson is reproduced below.

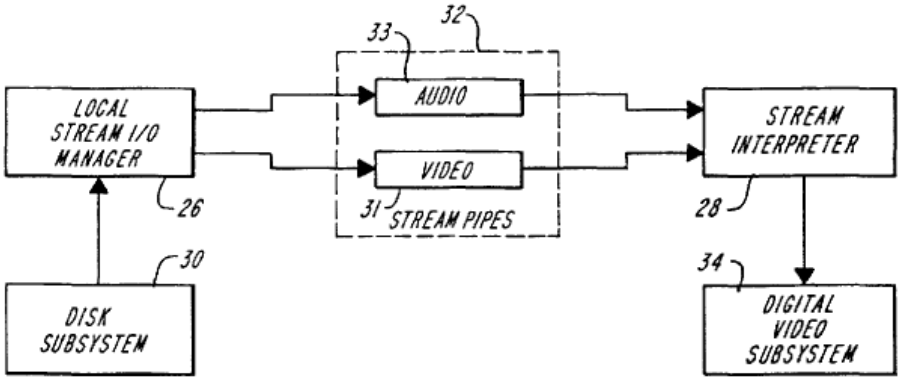

FIG. 5

Figure 5 of Nelson depicts a stream flow when the DVMS requests access to audio or video streams. *Id.* at 9:62–63. The description of Figure 5 states:

> The stream I/O manager 26 module retrieves the requested streams from a stream input 30; this stream input comprises a storage access point, e.g., a computer file or analog video source. The stream I/O manager then separates the retrieved streams according to the specified file format of each stream. If two streams, e.g., audio and video streams, which are accessed

> were interleaved in storage, the stream I/O manager dynamically separates the streams to then transform them to distinct internal representations, each comprising a descriptor which is defined based on their type (i.e. audio or video). Once separated, the audio and video stream data are handled both by the stream I/O manager and the stream interpreter as distinct constituent streams within a stream group. The stream I/O manager 26 then exchanges the stream data, comprising sequences of presentation units, with the stream interpreter 28 via a separate queue of presentation units called a stream pipe 32, for each constituent stream; an audio stream pipe 33 is thus created for the audio presentation units, and a video stream pipe 31 is created for the video presentation units. Each audio stream (of a group of audio streams) has its own pipe, and each video stream has its own pipe. During playback of streams, the stream I/O manager continually retrieves and produces presentation units from storage and the stream interpreter continuously consumes them, via the stream pipes, and delivers them to a digital media data subsystem for, e.g., presentation to a user.

Id. at 9:63–10:22. "[T]he digital video management system of the invention provides synchronization of audio to video, and in general, synchronization between any two or more dynamic stream[s] being presented." *Id.* at 12:16–21.

Figure 6 of Nelson is reproduced below.

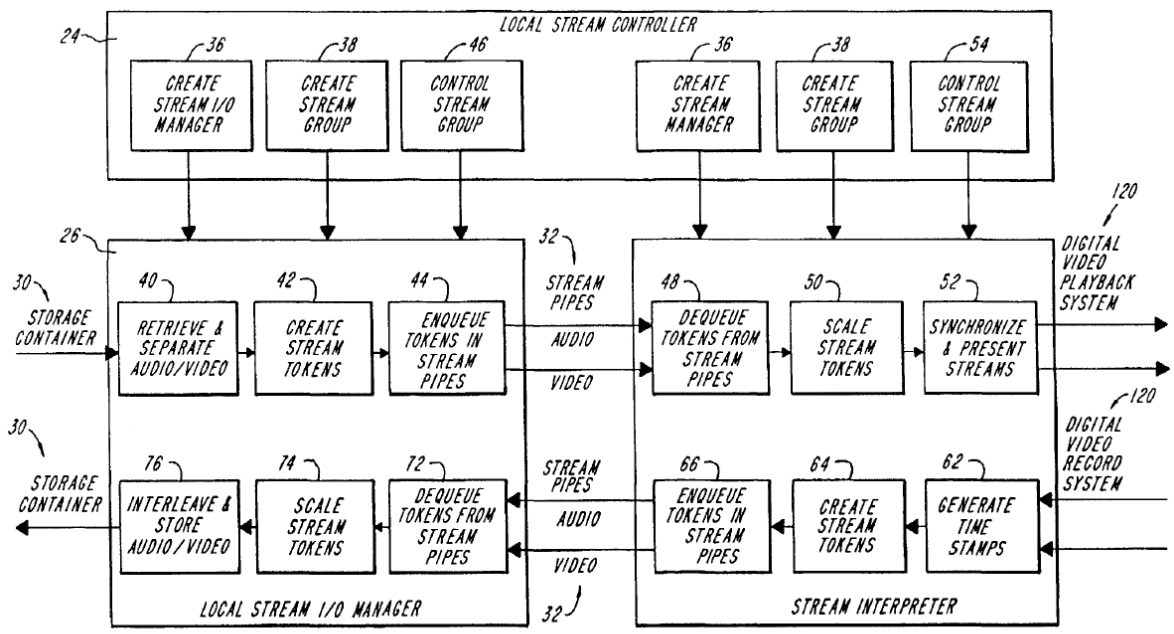

FIG. 6

Figure 6 of Nelson depicts "a schematic flow chart illustrating presentation and capture scenarios carried out by the local digital video management system manager of FIG. 4." *Id.* at 5:13–15. The description of Figure 6 states:

> [T]he synchronization of streams within a stream group is the responsibility of the stream interpreter module during a scaling process. The streams may be self-synchronized using either an implicit timing scheme or an explicit timing scheme. Implicit timing is based on the fixed periodicity of the presentation units in the constituent streams of a stream group to be synchronized. In this scheme, each presentation unit is assumed to be of a fixed duration and the presentation time corresponding to each presentation unit is derived relative to a reference presentation starting time. This reference starting time must be common to all of the constituent streams. Explicit timing is based on embedding of presentation time stamps and optionally, presentation duration stamps, within each of the constituent streams themselves and retrieving the stamps during translation

of streams from the storage format to the token format. The embedded time stamps are then used explicitly for synchronization of the streams relative to a chosen reference time base.

Using either the implicit or explicit timing self-synchronization schemes, a reference time base is obtained from a reference clock, which advances at a rate termed the reference clock rate. This rate is determined by the reference [cl]ock[7] period, which is the granularity of the reference clock ticks.

The DVMS of the invention supports two levels of self-synchronization control, namely, a base level and a flow control level. Base level synchronization is applicable to stream process scenarios in which the stream I/O manager is able to continuously feed stream data to the stream interpreter, without interruption, and in which each presentation unit is available before it is to be consumed. In this scenario, then, the stream I/O manager maintains a process rate and a process work load that guarantees that the stream I/O manager stays ahead of the stream interpreter.

Id. at 13:19–53.

Figure 10 of Nelson is reproduced below.

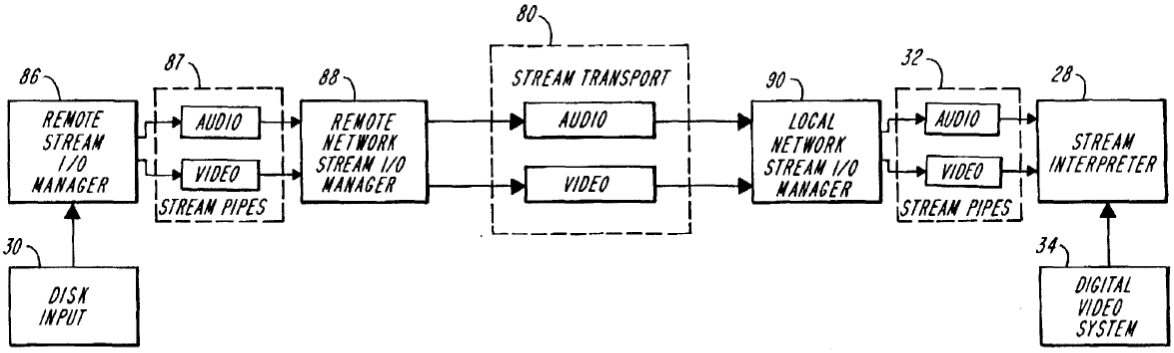

FIG. 10

[7] Elsewhere in the Specification, "dock" was changed to "clock." *See* Ex. 1006 at 58 (Certificate of Correction) ("each occurrence of the word 'dock' should read "clock'").

Figure 10 of Nelson depicts "a schematic diagram illustrating the flow of media stream data between the remote and local digital video management manager modules." *Id.* at 5:29–31. The description of Figure 10 states:

> Upon initialization from the request, and based on the network servers' stream group advertisements, the appropriate remote stream I/O manager 86 retrieves stored streams, e.g., audio and video streams, from the appropriate file storage 30 containing the requested stream group. The manager then separates the retrieved streams, if necessary, thereby producing separate audio and video presentation unit streams, and enqueues corresponding stream descriptor tokens in separate stream pipes 87, one pipe for each presentation unit token stream.
>
> The remote network stream I/O manager 88 consumes the presentation unit tokens from each of the stream pipes, assembles transmission packets based on the streams, and releases them for transmission across the network 80 directly to the corresponding local network stream I/O manager 90, based on the DVMS stream data transport protocols; the particular transport protocol used is set by the network environment.

Id. at 20:21–38.

2. Analysis of Independent Claims 1, 12, 13, and 22

Petitioner contends that claims 1, 12, 13, and 22 would have been obvious in view of Nelson. Pet. 3, 19–52, 56–64. Petitioner provides citations to the disclosure of Nelson (Ex. 1006) and the Declaration of Dr. Schonfeld (Ex. 1002) in support of its contention. *Id.* at 19–52, 56–64.

Patent Owner bases its arguments against instituting trial on two limitations of independent claims 1, 12, 13, and 22 and Nelson. *See generally* Prelim. Resp. Patent Owner first argues that Petitioner has not shown that Nelson discloses "maintaining a value of a presentation time parameter . . . representing an amount of time elapsed during rendering" as required by all four challenged independent claims. *Id.* at 34–36. Patent

Owner also argues that Petitioner has not shown that Nelson discloses that the claimed "presentation time" and a "data time" parameters represent respective rendering times for the same portion of temporal sequence presentation data, as required by all four challenged independent claims. *Id.* at 36–41.

Claim 1

"A method, performed by at least one machine, for rendering temporal sequence presentation data in a machine-implemented rendering system, the temporal sequence presentation data being tangibly stored in a first computer-readable medium, the method comprising steps of:"

Petitioner does not take a position as to whether the preamble of claim 1 is limiting. Pet. 19 ("To the extent that the preamble of claim 1 is limiting, *Nelson* discloses the limitations therein."). Patent Owner argues that "[t]he preamble of the challenged independent claims is limiting" but states that "based on the defects in the Petition for this proceeding IPR2019-01241, the Board need not reach the preamble issue to deny institution here." Prelim. Resp. 30 n.8.

We need not determine whether or not the preamble is limiting because Petitioner shows that the subject matter of the preamble is taught by the cited art and, at least at this stage of this proceeding, Patent Owner does not dispute this showing. Pet. 19–40; Prelim. Resp. 30 n.8 ("Patent Owner has not presented its arguments and intrinsic support regarding the preamble in this Preliminary Response.").

Parsing the preamble, it recites, (1) "[a] method, performed by at least one machine"; (2) "rendering temporal sequence presentation data in a machine-implemented rendering system"; and (3) tangibly storing the

temporal sequence presentation data in a computer-readable medium. Ex. 1001, 23:19–23. The Petition states, "*Nelson* discloses '**a computer-based media data processor** for controlling the **computer presentation** of digitized continuous **time-based** media data composed of a **sequence of presentation units**'" and "*Nelson* discloses a DVMS [Digital Video Management System], which 'provides the ability to capture, store, transmit, access, process and **present live or stored media stream data**.'" Pet. 19–20 (citing Ex. 1006, 2:10–13, 5:45–50). The Petition further states that, "*Nelson* discloses that a stream includes 'dynamic information . . . with **temporal predictability**' and '**a succession of sequences** . . . in turn, each sequence contains **a succession of segments**'" and "each stream contains a presentation unit being 'a unit of continuous, **temporally**-based data to be presented,' which 'has an **associated presentation time and presentation duration**." *Id.* at 21 (citing Ex. 1006, 6:10–26, 6:44–47).

Figure 2 of Nelson is reproduced below.

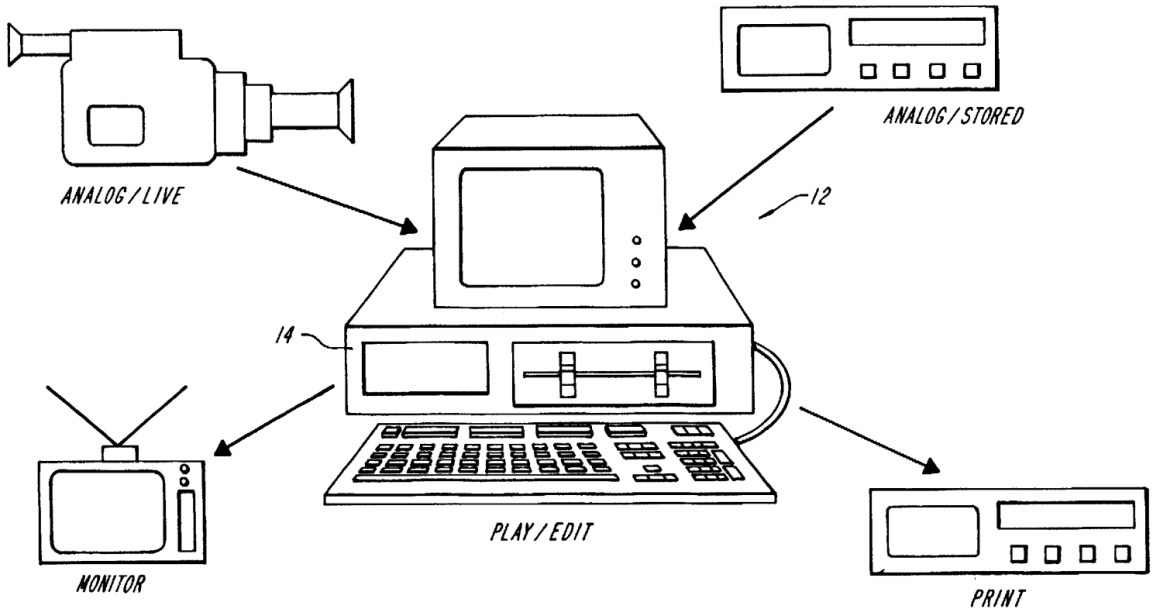

FIG. 2

Figure 2 of Nelson depicts, "a stand-alone implementation of the digital video management system [DVMS]." Ex. 1006, 5:1–2. The detailed description of Figure 2 in Nelson states:

> [T]he DVMS may be implemented in a stand-alone computer system or a computer-based, packet switched network. Referring to FIG. 2, in a stand-alone computer system implementation 12, live or stored media streams are accessed and captured for presentation and editing on the stand-alone computer 14. The captured, and optionally edited media streams may then be delivered to a presentation monitor or to a VCR tape printer utility.

Id. at 6:57–64. Figure 3 of Nelson is reproduced below.

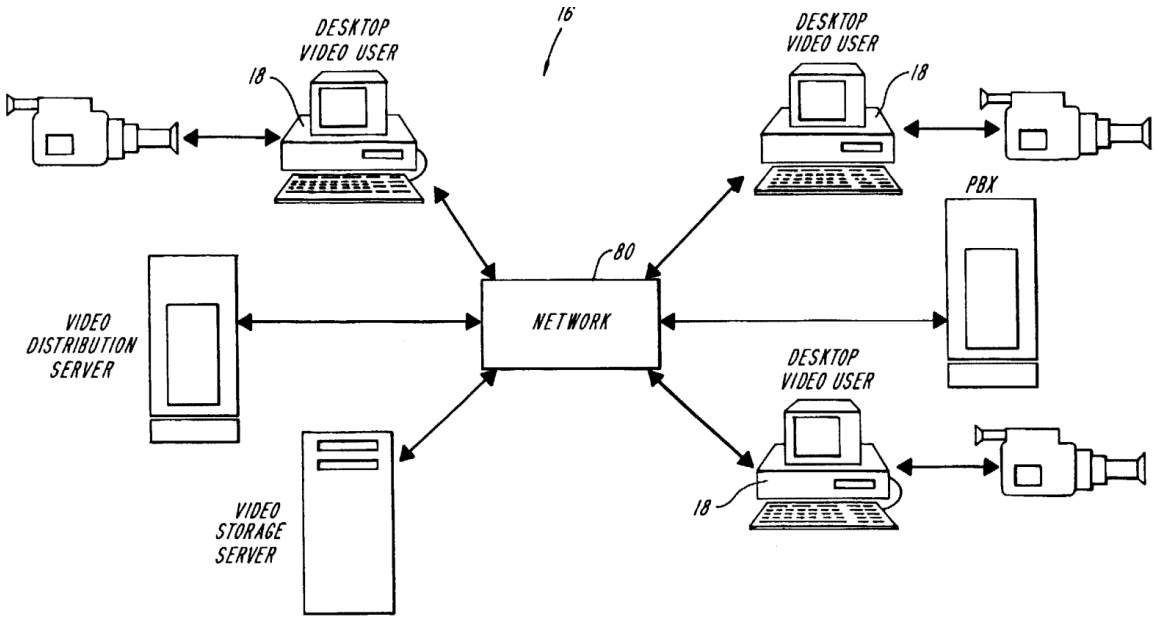

FIG. 3

Figure 3 of Nelson depicts, "a network implementation of the digital video management system [DVMS]." *Id.* at 5:4–5. The detailed description of Figure 3 in Nelson states:

> Referring to FIG. 3, a packet switching network in which the DVMS is implemented comprises desktop computer systems 18 which are linked via a packet switching network 80,

> which is controlled by the DVMS network implementation 16. The network 80 may comprise a local area network (LAN) or a wide area network (WAN), or a combination of one or more LANs and WANs. The DVMS provides access to and capture of media streams from live analog video capture, e.g., a VCR or camcorder, a network, storage or PBX server, or one of the desktop computers, and in turn manages the transmission of the media stream data across the network back to any of the access points.

Id. at 6:65–7:9.

Nelson supports Petitioner's contention that the preamble is taught by the cited art. As indicated previously, Patent Owner does not argue to the contrary. We determine that there is a reasonable likelihood that Petitioner will prevail in showing that the preamble is taught by Nelson.

"(A) maintaining a value of a presentation time parameter tangibly stored in a second computer-readable medium and representing an amount of time elapsed during rendering of a portion of the temporal sequence presentation data"

Petitioner contends that Nelson's description of a "reference time base" that is maintained and used in synchronization of media streams discloses the "presentation time parameter" as recited in this limitation. Pet. 41–42 (citing Ex. 1002 (Schonfeld Decl.) ¶¶ 59–64). The Petition states:

> *Nelson* discloses maintaining a value of a reference time base ("a value of a presentation time"), which is stored in a computer-readable medium of the DVMS ("stored in a second computer-readable medium"), where the value represents an amount of time elapsed during rendering of a portion of the media stream ("representing an amount of time elapsed during rendering of a portion of the temporal sequence presentation data"). ([Ex. 1002] ¶59.)

Pet. 41. And, "[i]n either the implicit timing scheme or the explicit timing scheme, 'a reference time base' obtained from a reference clock ([Ex. 1006], 13:38-43) is used to control synchronization. (*See, e.g.*, [Ex. 1006,] 14:44-48, 15:20-25.)" *Id.* at 24. With regard to the use of the "reference time base" in synchronization, the Petition states:

> *Nelson* explains that synchronization amongst media streams is "inherently required for the coordinated presentation." (Ex. 1006, 12:17-29; Ex. 1002, ¶60.) Synchronization of the streams may be achieved by maintaining "**a common reference time base**" in the disclosed synchronization schemes, including an implicit timing scheme and an explicit timing scheme. (Ex. 1006, 12:49-51 (disclosing that "independent constituent streams may . . . be stored in separate file containers and be synchronized, before presentation, with a common reference time base"), 13:38-43 (disclosing that in either synchronization scheme "a reference time base is obtained from a reference clock"), 13:22-26 (disclosing that synchronization of stream may be achieved using implicit or explicit timing scheme).) The implicit timing scheme is "based on the fixed periodicity of the presentation units in the constituent streams of a stream group to be synchronized." (*Id.*, 13:24-26; *see also id.*, 13:26-31.) The explicit timing scheme is based on embedded presentation time stamps (and optionally presentation duration stamps) within each of the streams.

Id. at 41–42.

Although Patent Owner disputes whether Nelson discloses "a presentation time parameter . . . representing an amount of time elapsed during rendering of the portion of the temporal sequence presentation data," Patent Owner appears to acknowledge that Nelson teaches this subject matter. Patent Owner states that in the '903 patent, "'presentation time' . . . tracks the elapsed rendering time of [a] media presentation" and "the time

elapsed during rendering the content [is] called 'Presentation Time.'"

Prelim. Resp. 8, 13. The Preliminary Response states:

> The reference time base indicates a current real time relative to the start of the stream. [Ex. 1006], 14:27-29.
>
> * * *
>
> "Reference time base" is also referred to as the "current presentation time" ([Ex. 1006], 14:53-58, 15:20-22) and the "currently maintained time count" (*id.*, 14:25-29).
>
> * * *
>
> external clock time (reference time base) . . . . To be clear, *Nelson* also refers to the external clock time as the current reference time, and also as the currently maintained time count. EX1006, 13:38-41, 14:26-29, 14:55-58, 15:29-32, 58 (CoC, Feb. 17, 1998).
>
> * * *
>
> In both schemes, the reference clock advances in accordance with clock time, whether or not presentation units are rendered. *See* [Ex. 1006], 13:38-43.
>
> * * *
>
> [T]he reference time base represents simply elapsed time.

Prelim. Resp. 17–18, 23 n.6, 26, 39, 41. Based on this record, we agree with Petitioner that Nelson discloses the claimed "presentation time parameter."

In contesting this element, Patent Owner presents an illustration based on Nelson in which "[a fifth unit] is deleted rather than presented," because "[d]ue to internet connectivity problems . . . the fifth presentation unit . . . arriv[es] only once the external clock time (reference time base) is at ten seconds." Prelim. Resp. 24–26. Patent Owner asserts its illustration "shows that when deletion is occurring, the reference clock . . . can never represent 'an amount of time elapsed during rendering' of the portion of presentation

units that includes that expired presentation unit that is not rendered." *Id.* at 35–36. We are not persuaded by Patent Owner's illustration and argument because the element at issue requires only that the "presentation time parameter . . . represent[] an amount of time elapsed during rendering of a portion of the temporal sequence presentation data." Ex. 1001, 23:24–28. Even in Patent Owner's illustration, the first four presentation units (i.e., "a portion of the temporal sequence presentation data") would have been rendered during the ten seconds of elapsed external clock time.[8]

Patent Owner further argues, "Petitioner appears to have ignored the Certificate of Correction that modifies *Nelson's* disclosure of the deletion function on which Petitioner relies." Prelim. Resp. 32–33 (citing Ex. 1006, 58 (modifying 15:30–33)). To the contrary, we find no fault with Petitioner's showing as it relates to Nelson's deletion function. The uncorrected sentence in the relevant passage in Nelson states, "in the implicit timing scheme, ***when the product of processed units and unit duration exceeds the currently maintained time count***, the next sequential unit is deleted rather than presented." Ex. 1006, 15:30–33 (emphasis added). The corrected sentence in the relevant passage in Nelson states, "in the implicit timing scheme, ***when the currently maintained time count exceeds the product of processed units and unit duration***, the next sequential unit is

[8] Nelson teaches that a "virtual presentation unit" or "substitute partial media information" is presented when the next presentation unit is not available. *See, e.g.*, Ex. 1006, 24:5–36. In the case of video, the system may "redisplay[] the most recent previous video frame." *Id.* at 15:60–61. With regard to audio, the system may render "a presentation unit consisting of null samples that represent silence." *Id.* at 15:63–64. Thus, in Nelson, the system continues to render the media presentation even if the next presentation unit is not available.

deleted rather than presented." Ex. 1006, 58 (Certificate of Correction) (emphasis added). The corrected sentence discloses the way in which the Petitioner states the implicit timing scheme works. *See* Pet. 42 ("*Nelson* in the base level implicit timing synchronization scheme discloses maintaining a reference time base ('a value of a presentation time parameter') and applying the same in the synchronization scheme." (citing Ex. 1002 (Schonfeld Decl.) ¶ 61)). Thus, it does not appear to us that Petitioner misinterpreted Nelson in light of the Certificate of Correction.

With regard to the portion of Element (A) relating to storing the presentation time parameter ("maintaining a value of a presentation time parameter tangibly stored in a second computer-readable medium"), Petitioner provides a well-supported showing that Nelson meets this limitation. *See* Pet. 43–44. The Petition states:

> Moreover, this value is "tangibly stored in a second computer-readable medium," as claimed. (Ex. 1002, ¶62.) For example, as discussed above, *Nelson* discloses that the DVMS utilizes the reference time base (the claimed "value of a presentation time parameter") to compare it with a calculated product. (Ex. 1006, 14:34-36.) Thus, the disclosed "value" is at least temporarily stored on the DVMS. Furthermore, as discussed above in claim 1 preamble, a POSITA would have found it obvious to store data, program instructions, and other parameters in non-volatile storage elements. (*See supra* Section IX.A.1.pre.) Accordingly, for similar reasons discussed therein, a POSITA would have would found it obvious to store the disclosed "value of a presentation time parameter" in non-volatile storage elements (the claimed "second computer-readable medium"). (Ex. 1002, ¶62; Section VIII.C.)

Id. at 43. Patent Owner does not address this storing limitation or dispute Petitioner's showing that Nelson teaches it.

Based on this record, we determine that there is a reasonable likelihood Petitioner will establish that the cited art teaches the subject matter recited in this limitation.

"(B) providing the value of the presentation time parameter to a first component of the rendering system"

With regard to this limitation, Petitioner argues, "*Nelson* discloses providing the value of the reference time base ('the value of the presentation time parameter') to the stream interpreter of the DVMS [Digital Video Management System] ('a first component of the rendering system')." Pet. 46. Petitioner contends, "*Nelson* discloses that the stream interpreter module is responsible for synchronizing streams using either the implicit or explicit timing scheme" and "the stream interpreter module uses the value of the reference time base to determine whether to release a presentation unit for synchronization purposes." *Id.* Nelson supports Petitioner's argument. Nelson states:

> [T]he synchronization of streams within a stream group is the responsibility of the stream interpreter module during a scaling process. . . . The embedded time stamps are then used explicitly for synchronization of the streams relative to a chosen reference time base.
>
> Using either the implicit or explicit timing self-synchronization schemes, a reference time base is obtained from a reference clock, which advances at a rate termed the reference clock rate. This rate is determined by the reference [cl]ock period, which is the granularity of the reference clock ticks.

Ex. 1006, 13:19–43. Patent Owner does not argue this limitation. *See generally* Prelim. Resp. Based on this record, we determine that there is a reasonable likelihood Petitioner will establish that the cited art teaches the subject matter recited in this limitation.

"(C) maintaining a value of a data time parameter tangibly stored in a third computer-readable medium and representing an amount of time required by the rendering system to render the portion of the temporal sequence presentation data at a default presentation rate"

Petitioner relies on Nelson's description of calculated and embedded presentation times as disclosing the "data time parameter" of this limitation. Pet. 47. Petitioner argues:

> *Nelson* discloses maintaining a value of a calculated or an embedded presentation time ("maintaining a value of a data time parameter"), which is stored in a computer-readable medium of the DVMS ("stored in a third computer-readable medium"), where the value represents an amount of time required by the DVMS to render a portion of the media stream at the original presentation rate ("representing an amount of time required by the rendering system to render the portion of the temporal sequence presentation data at a default presentation rate").

Id. Petitioner asserts that Nelson discloses this limitation in two distinct ways. *Id.* First, the Petition states:

> *Nelson* discloses in the implicit timing scheme that the DVMS "maintains a separate presentation unit counter" for each audio and video stream pipe (Ex. 1006, 14:8-17, 14:18-21), where the unit counter "indicates the number of already consumed presentation units in the corresponding stream" (*id.*, 14:29-32). (*Supra* Section IX.A.1.a; Ex. 1002, ¶68.) The scheme then calculates a product between the presentation unit count and the fixed presentation duration of each presentation unit. (Ex. 1006, 14:32-34; *see also id.*, 13:26-27.) *Nelson* explains that the calculated product "specifies **the real time which has elapsed to present the counted units**." [*Id.*] 14:32-34 (emphasis added).)

Id. at 47–48. Petitioner contends "this product represents 'an amount of time required by the rendering system to render the portion of the temporal

sequence presentation data at a default presentation rate,' as claimed, [because] it is the same time requirement regardless of the presentation rate." *Id.* at 48. The cited portions of Nelson support this contention by Petitioner.

> Second, the Petition states:
>
> > *Nelson* discloses in the explicit timing scheme that the DVMS "reads the embedded time stamp of each presentation token . . . to determine presentation time and duration for each presentation unit in the sequence." (Ex. 1006, 15:10-13; *supra* Section IX.A.1.a.) The scheme then compares "a reference time base with the presentation time and presentation duration stamp embedded in each presentation unit" to determine whether a presentation unit should be released for presentation. (Ex.1006, 15:20-25.) The embedded presentation time discloses "a value of a data time parameter . . . representing an amount of time required by the rendering system to render the portion of the temporal sequence presentation data at a default presentation rate," as claimed at least because it is equivalent to the calculated presentation time (the presentation unit-duration product), as discussed above in the first way of disclosing the claimed "value of a data time parameter." (*Id.*, 14:67-15:3 ("The stream interpreter does not maintain a presentation unit counter in [the explicit timing] scheme, as it does in the implicit timing scheme. Rather, the embedded time stamps in the streams provide equivalent information."); Ex. 1002, ¶70.)

Id. at 50. The cited portions of Nelson support this contention by Petitioner. Thus, Petitioner relies on Nelson's disclosure of "presentation time"

(calculated or embedded) as teaching the "value of a data time parameter" as recited in the claims.[9]

Nelson also provides this further description of the presentation of streams of time-based media data using its digital video management system (DVMS):

> Segments of streams contains presentation units. A presentation unit is a unit of continuous, temporally-based data to be presented, and accordingly, has an associated presentation time and presentation duration. A presentation time indicates the appropriate point in the sequence of a presentation at which the associated presentation unit is to be played, relative to the time base for the ongoing presentation. A presentation duration indicates the appropriate interval of time over which the associated presentation unit is to be played in the ongoing presentation.

Ex. 1006, 6:44–53 (cited by Patent Owner (Prelim. Resp. 17–18)). This passage also supports Petitioner's contention that Nelson teaches "maintaining a value of a data time parameter . . . representing an amount of time required by the rendering system to render the portion of the temporal sequence presentation data at a default presentation rate" as recited in independent claims.

The Petition also references the following passages in Nelson as disclosing "data time":

> "[e]ach presentation unit is characterized by a prespecified **presentation time** during a computer presentation of the media data." (Ex. 1006, 2:14-17; *see also id.*, 6:44-56 (disclosing that "[a] presentation time indicates the appropriate point in the

[9] Patent Owner recognizes that the differences in the terminology used in the '903 patent and Nelson could cause confusion and explains, "Petitioner relies on the 'presentation time' time stamps of *Nelson* to disclose the claimed 'data time.'" Prelim Resp. 22.

> sequence of a presentation at which the associated presentation unit is to be played, relative to a time base for the ongoing presentation"), 11:7-11 (disclosing "retriev[ing] the time stamp information from the corresponding [audio and video] frames"), 14:8-48 (describing use of presentation time), 15:10-40 (same), 15:66-16:19 (same), 16:21-53 (same).)

Pet. 30–31 (bracketed material in original).

Patent Owner does not contest that Nelson discloses "a data time parameter" that "represents an amount of time required by the rendering system to render a portion of the temporal sequence presentation data at a default presentation rate." However, Patent Owner contests this limitation because, it asserts, "Petitioner has not shown that *Nelson* discloses . . . the claimed 'presentation time' and a 'data time' parameters [that] represent respective rendering times for the ***same*** portion of temporal sequence presentation data." Prelim. Resp. 36. To make its argument, Petitioner points again to its illustration in which the system from Nelson deletes a fifth presentation unit that is delayed and arrives when the external clock time (reference time base) is ten seconds. *See id.* at 39–41. Patent Owner argues again that "[t]he reference clock time of 10 seconds cannot represent an elapsed time during rendering of the set of presentation units ending with the expired presentation unit that has time stamp of five seconds" because "[t]he reference clock has continued to advance despite that fifth presentation unit arriving later than expected, being discarded and not rendered." *Id.* at 40. According to Patent Owner, "there is no relationship whatsoever between the reference clock and an elapsed rendering time, much less any correspondence with the value of the time stamp or calculated time stamp for an expired presentation unit." *Id.* at 41.

We are not persuaded by Patent Owner's argument because, as outlined above, the element at issue requires only that the presentation parameter "represent[] an amount of time elapsed during rendering of a portion of the temporal sequence presentation data." Ex. 1001, 23:26–28. Even in Patent Owner's illustration, the first four presentation units would have been rendered during the ten seconds of elapsed external clock time. Further, in Patent Owner's illustration, Nelson's ten-second "presentation time" and four-second "data time" parameters would represent respective rendering times for the same portion of temporal sequence presentation data.

Although Patent Owner argues this limitation, Patent Owner appears to acknowledge that Nelson teaches "maintaining a value of a data time parameter." The Preliminary Response states that "'[d]ata [t]ime' can be regarded as a time value (e.g., timestamp) that specifies 'how long it would take to reach that location, starting from the beginning of the media content, and playing at [a] normal rate.'" Prelim. Resp. 13 (citing Ex. 1001, 2:2–8). With regard to Nelson, the Preliminary Response states:

> In *Nelson*, presentation time indicates the appropriate time at which the unit is to be played, relative to a reference time base. [Ex. 1001], 6:47-50. Presentation times are either explicit time stamps or the implicit calculated equivalent.
>
> * * *
>
> The token for each unit [as shown in Figure 7] represents an audio or video presentation unit (114) and a time stamp for that unit (116). *Id*., 11:11-14.
>
> * * *
>
> Explicit timing synchronization is based on the time stamps that are embedded in the stream tokens. *Id*., 14:50-52.

Prelim. Resp. 17, 19, 20.

With regard to the portion of this limitation relating to storing the data time parameter ("maintaining a value of a data time parameter tangibly stored in a third computer-readable medium"), Petitioner provides a well-supported showing that Nelson meets this limitation. *See* Pet. 49–50. The Petition states:

> Moreover, this value is "tangibly stored in a third computer-readable medium," as claimed. (Ex. 1002, ¶69.) For example, as discussed above, *Nelson* discloses that the DVMS utilizes the calculated product (the claimed "value of a data time parameter") to compare it with the reference time base. (Ex. 1006, 14:34-36.) Thus, the disclosed "value" is at least temporarily stored on the DVMS. Furthermore, as discussed above in claim 1 preamble, a POSITA would have found it obvious to store data, program instructions, and other parameters in non-volatile storage elements. (*See supra* Section IX.A.1.pre.) Accordingly, for similar reasons discussed therein, a POSITA would have would found it obvious to store the disclosed "value of a data time parameter" in non-volatile storage elements (the claimed "third computer-readable medium"). (Ex. 1002, ¶69; Section VIII.C.)

Id. at 51–52. Patent Owner does not address this storing limitation or dispute Petitioner's showing that Nelson teaches it.

Having considered the cited portions of Nelson and the arguments of the parties, we determine that there is a reasonable likelihood Petitioner will establish that Nelson discloses the subject matter recited in this limitation.

"(D) providing the value of the data time parameter to a second component of the rendering system"

Petitioner argues:

> *Nelson* discloses providing the calculated or embedded presentation time ("the value of the data time parameter") to the stream interpreter of the DVMS ("a second component of the rendering system"), where the value of the reference time base

> ("the value of the presentation time parameter") is not equal to the value of the calculated or embedded presentation time ("the value of the data time parameter"). ([Ex. 1002] ¶71.)
>
> As discussed in claim element 1(b), the stream interpreter module is responsible for synchronizing streams using either the implicit or explicit timing scheme. (*See supra* Section IX.A.1.b; Ex. 1006, 13:19-26, FIG. 6; Ex. 1002, ¶72.) Consistent with as discussed in claim element 1(c), the stream interpreter module uses the calculated or embedded presentation time to determine whether to release a presentation unit for synchronization purposes. (*See supra* Section IX.A.1.c; *see also* Ex. 1006, 14:37-48, 15:10-25.) Thus, each of the disclosed "value of the data time parameter" discussed above is provided to the stream interpreter module of the DVMS ("a second component of the rendering system").

Pet. 43–44. Nelson supports Petitioner's argument. Patent Owner does not dispute Petitioner's showing with regard to this limitation or argue that Nelson fails to teach or suggest this limitation. *See generally* Prelim. Resp. Based on this record, we determine that there is a reasonable likelihood Petitioner will establish that Nelson discloses the subject matter recited in this limitation.

"wherein the value of the presentation time parameter is not equal to the value of the data time parameter"

Petitioner contends, "*Nelson* discloses that the value of the calculated or embedded presentation time ('the value of the data time parameter'), and the value of the reference time base ('the value of the presentation time parameter') are not equal." Pet. 52. Petitioner argues:

> *Nelson* discloses controlling the synchronization of media streams based on these values not being equal. As discussed in claim elements 1(a) and (c), these two values are compared to determine whether a presentation unit should be released for presentation. (*See supra* Sections IX.A.1.a and c.) Only when

> these two values match, a presentation unit will be released. (Ex. 1006, 14:34-48, 15:20-25.) Indeed, *Nelson* discloses that "if the appropriate release time for those [presentation] units has passed," i.e., if the two times values are not equal, both the implicit and explicit schemes delete those units. (*Id.*, 15:26-40.)

Id. Nelson supports Petitioner's contention. Patent Owner does not dispute Petitioner's showing with regard to this limitation of the independent claims or argue that Nelson fails to teach or suggest this limitation. *See generally* Prelim. Resp. Based on this record, we determine that there is a reasonable likelihood Petitioner will establish that Nelson discloses the subject matter recited in this limitation.

Summary as to Claim 1

We determine that Petitioner's showing that claim 1 of the '903 patent would have been obvious in view of Nelson to be well-supported. In contrast, we do not find Patent Owner's arguments regarding claim 1, at this stage of the proceeding, to be convincing.[10]

Claims 12, 13, and 22

Independent claims 12, 13, and 22 include limitations similar to the limitations of independent claim 1. Petitioner relies on similar arguments and evidence as discussed above with respect to claim 1 for these claims. *See* Pet. 56–64. At this stage of the proceeding, Patent Owner's arguments

[10] Thus, we have determined, based on the Petition and the Preliminary Response, that there is a reasonable likelihood that the Petitioner will prevail with respect to at least one of the claims challenged in the Petition pursuant to 35 U.S.C. § 314 and that *inter partes* review as to claim 1 should be instituted. Accordingly, we institute as to all the challenged claims and all the challenges raised in the Petition. *USPTO Guidance on the Impact of SAS on AIA Trial Proceedings* (April 26, 2018) ("[T]he PTAB will institute as to all claims or none . . . if the PTAB institutes a trial, the PTAB will institute on all challenges raised in the petition.").

concerning claims 12, 13, and 22 are the same as those discussed above with respect to claim 1. *See* Prelim. Resp. 33–41. We have reviewed Petitioner's contentions and supporting evidence, and based on the current record, we determine that Petitioner has demonstrated a reasonable likelihood of prevailing on its assertion that claims 12, 13, and 22 are rendered obvious by Nelson.

3. Dependent Claims 2–4 and 14

Petitioner asserts that Nelson teaches each of the additional limitations of dependent claims 2–4 and 14. *See* Pet. 52–55, 62. Petitioner supports these assertions with citations to the record and the testimony of Dr. Schonfeld. *See id.* At this stage of the proceeding, Patent Owner does not dispute these assertions, or raise arguments separate from those discussed above with respect to claim 1. *See* Prelim. Resp. 34–35 n.10 ("As explained herein, Petitioner cannot show obviousness of any of the four challenged independent claims (claims 1, 12-13 and 22), and therefore the Petition necessarily fails as to the other challenged claims, all of which depend from these two [sic] claims."). We have reviewed Petitioner's contentions and supporting evidence, and based on the current record, we determine that Petitioner has demonstrated a reasonable likelihood of prevailing on its assertion that claims 2–4 and 14 are rendered obvious by Nelson.

E. Obviousness Challenge Based on Nelson and DeMoney

Petitioner contends that claims 7 and 17 would have been obvious in view of Nelson and DeMoney. Pet. 3, 64–69.

1. DeMoney

DeMoney was filed on June 5, 1996, and issued on May 16, 2000. Ex. 1012, codes (22), (45). Therefore, DeMoney is prior art to the '903 patent under 35 U.S.C. § 102(a). *See* Pet. 3. Patent Owner does not dispute that DeMoney is prior art. *See generally* Prelim. Resp.

DeMoney relates to "a video server system and method for indexing between video streams having different presentation rates, i.e., normal play, fast forward and fast reverse video streams." Ex. 1012, 1:16–19. The fast forward and fast reverse video streams are called "trick play video streams." *Id.* at 5:4–7. "The present invention generates index look-up tables (ILUTs) between the normal play and trick play video streams which enable indexing between the streams." *Id.* at 5:7–10. A server "maps . . . presentation timestamps to a 'normal play time' (NPT) standard." *Id.* at 8:26–27. "For the scaled streams, e.g., the fast forward and fast reverse streams, a scale factor is introduced into the normal play time values of the index look-up tables to compensate for the different presentation rates." *Id.* at 9:32–35.

2. Analysis

Claims 7 and 17

Petitioner alleges that dependent claims 7 and 17 would have been obvious in view of Nelson and DeMoney. Pet. 3, 64–69. Petitioner supports these assertions with citations to the record and the testimony of Dr. Schonfeld. *See id.* At this stage of the proceeding, Patent Owner does not dispute these assertions, or raise arguments separate from those discussed above with respect to claim 1. *See* Prelim. Resp. 34–35 n.10 ("As explained herein, Petitioner cannot show obviousness of any of the four challenged independent claims (claims 1, 12-13 and 22), and therefore the

Petition necessarily fails as to the other challenged claims, all of which depend from these two [sic] claims."). In the Preliminary Response, Patent Owner does not discuss claim 7, claim 17, and DeMoney, or to specifically address the challenge to claims 7 and 17 based on the combination of the teachings of Nelson and DeMoney. Indeed, the only mention of DeMoney in the Preliminary Response is in the opening paragraph in which Patent Owner recounts the grounds of unpatentability set forth in the Petition. *See id.* at 5. We have reviewed Petitioner's contentions and supporting evidence, and based on the current record, we determine that Petitioner has demonstrated a reasonable likelihood of prevailing on its assertion that claims 7 and 17 are rendered obvious by Nelson and DeMoney.

F. Conclusion

For the foregoing reasons, we conclude that Petitioner has demonstrated a reasonable likelihood of showing claims 1–4, 7, 12–14, 17, and 22 of the '903 patent would have been obvious. Accordingly, we institute *inter partes* review of all the challenged claims and on both the grounds asserted in the Petition.

Our discussion of facts herein is only for the purpose of determining whether or not *inter partes* review should be instituted and is not dispositive of any issue. At this preliminary stage, the Board has not made a final determination with respect to the patentability of the challenged claims or any underlying factual and legal issues. The Board's final determination will be based on the record as developed during the trial.

III. ORDER

In consideration of the foregoing, it is hereby:

ORDERED that, pursuant to 35 U.S.C. § 314(a), an *inter partes* review is instituted as to claims 1–4, 7, 12–14, 17, and 22 of U.S. Patent No. 7,683,903 B2 based on the challenges in the Petition (Pet. 2–3).

Pursuant to 35 U.S.C. § 314(c) and 37 C.F.R. § 42.4, notice is hereby given of the institution of a trial, which commences on the entry date of this Decision.

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