UNITED STATES PATENT AND TRADEMARK OFFICE

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BEFORE THE PATENT TRIAL AND APPEAL BOARD

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UNIFIED PATENTS, LLC,

Petitioner

v.

VL COLLECTIVE IP LLC,

Patent Owner

_____

IPR2022-01086

U.S. Patent 8,605,794

PETITIONER'S REPLY TO PATENT OWNER'S RESPONSE

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The Board should find the challenged claims of the '794 patent unpatentable under both the *Sonohara*-based grounds and *Abbott*-based grounds in the Petition. None of Patent Owner's (PO) arguments in its Response ("POR") overcome the Petition's strong showing of unpatentability. PO presents erroneous constructions in an attempt to establish patentability over *Sonohara*, and rehashes incorrect arguments from its Preliminary Response ("POPR") to establish patentability over *Abbott*.

Every argument in the POR against *Sonohara* is premised on PO's erroneous constructions. PO does not address (and therefore concedes) that *Sonohara* renders the challenged claims unpatentable under the correct plain and ordinary meaning. Even under PO's erroneous constructions, the challenged claims are unpatentable over *Sonohara*.

Regarding the *Abbott*-based grounds, PO again mischaracterizes *Abbott* by relying only on attorney argument, which is conclusively rebutted by Dr. Freedman's testimony. PO does not even address its proposed constructions in relation to *Abbott's* teachings. The challenged claims are unpatentable over *Abbott*.

I. PO'S CLAIM CONSTRUCTIONS ARE WRONG

PO construes three terms in claims 1 and 9 in an attempt to overcome the *Sonohara*-based grounds: (1) "content-related…data segments," (2) the preambles

of claims 1 and 9, and (3) "assignment rule."[1] The Board should reject each of PO's constructions and construe all terms of the challenged claims according to their plain and ordinary meaning. Pet., 8-9.[2]

PO's constructions of (1) "content-related…data segments" and (3) "assignment rule" are the same constructions it proposed in a district court proceeding involving the '794 patent (but not involving Petitioner). *Compare* POR, 14, 32 *with* EX2005, 8-9. The court rejected PO's constructions of these two terms, as discussed below. EX2009, 3-4. The Board should do the same here.

A. PO's construction of "content-related…data segments" is wrong.

The Board should reject PO's construction of "content-related…data segments" because it (a) improperly imports limitations from the specification that are not required by the claims, and (b) renders other portions of claim 1 superfluous. EX1016, ¶22.

Claim 1 recites "content-related first data segments" and "content-related

[1] PO does not rely on its erroneous constructions for the *Abbott*-based grounds. POR, 41-47.

[2] Device claim 9 is substantially similar to method claim 1. Pet., 33-35, 55-56. Petitioner addresses claim 1 unless noted otherwise. Petitioner's arguments apply equally to claim 9.

second data segments," without further defining the data segments. PO incorrectly construes the "content-related…data segments" terms as "data segments ordered in a file such that they will present the file's contents in their intended presentation order when rendered sequentially." POR, 14. This construction is wrong. EX1016, ¶¶22-23.

First, claim 1 does not require that the "content-related…data segments" are "ordered in a file," or that the data segments are "ordered in a file such that they will present the file's contents in their intended presentation order when rendered sequentially." EX1016, ¶23.

As alleged support for adding unrequired limitations into claim 1, PO cites an example in the specification of a "fragmentation description file…specif[ying] how content-related first and content-related second data segments S1, S2 can be obtained from the respective first and second data file D12, D2." POR, 14-15 (citing EX1001, 4:9-14). Claim 1 does not require this example nor the fragmentation description file. "[I]t is important not to import into a claim limitations that are not part of the claim." *Superguide Corp. v. DirecTV Enterprises, Inc.,* 358 F.3d 870, 875 (Fed. Cir. 2004); *EPOS Techs. Ltd. v. Pegasus Techs. Ltd.*, 766 F.3d 1338, 1341 (Fed. Cir. 2014) ("[I]t is improper to read limitations from a preferred embodiment described in the specification—even if it is the only embodiment—into the claims absent a clear indication in the intrinsic record that the patentee intended the claims to be so

limited."). There is no clear indication in the intrinsic record that the applicant intended the "content-related…data segments" to require PO's narrow construction. EX1016, ¶¶24-26.

Second, construing "content-related…data segments" as PO proposes improperly renders other portions of claim 1 superfluous. "It is highly disfavored to construe terms in a way that renders them void, meaningless, or superfluous." *Intel Corp. v. Qualcomm Inc.*, 21 F.4th 801, 810 (Fed. Cir. 2021). PO's construction suggests that the data segments **themselves**[3] dictate how they will be ordered "when rendered sequentially" because the data segments are "ordered in a file" so that "the file's contents [will be] in their intended presentation order when rendered sequentially." EX1016, ¶27. But claim 1 already recites that the data segments are sequentially output together based on "an assignment rule." Adopting PO's construction would improperly render the assignment rule entirely superfluous, because the "content-related…data segments" are output sequentially based on the "assignment rule," not how they are ordered in a file. EX1016, ¶27.

In district court litigation, PO construed "content-related…data segments" in the same manner it proposes here. EX2005, 9. The district court rejected that construction and construed "content-related…data segments" as "segments of

[3] Unless noted, all emphasis is added..

content data that have a syntactical meaning within the respective data file," based on the specification's description (EX1001, 4:14-17) that "content-related…mean[s] that first and second data segments have a syntactical meaning within the respective data file." EX2009, 4 (court's construction); EX1018, 111:24-112:1 (Judge Nall: "I'm going to adopt…the express definition provided in the specification.") (relying on definition in EX1001, 4:14-17). If the Board construes "content-related…data segments," the Board should adopt the same definitional construction the district court adopted. EX2009, 4; EX1016, ¶¶28-29, 31-34 (Dr. Freedman explaining POSITA's understanding of "syntactical meaning" based on EX1019, 727 (EX1019 is cited as document [1] in the '794 patent)). The Board should not adopt PO's construction that allegedly "reflects" or "captures" the definition, instead of the definition. POR, 14-21 (PO's construction allegedly "reflects" or "captures" the definition); EX1016, ¶¶30, 34.

As shown in Section II.A., *Sonohara* teaches this limitation under PO's construction, the district court's construction, or the plain and ordinary meaning.

B. PO's construction of "assignment rule" is wrong.

PO's proposed construction of "assignment rule" in claims 1 and 9 is wrong because it (a) improperly imports a negative limitation not required by the claims, and (b) is improper under claim differentiation principles. PO's construction is also not supported by any alleged disclaimer. The district court rejected PO's

construction. EX2005, 8 (PO's construction of "assignment rule" including same negative limitation); EX2009, 3 ("No construction necessary" for "assignment rule limitations"); EX1018, 109:4-110:1 (Judge Nall explaining that the negative limitation in PO's construction is unclear, not required under claim differentiation, and not supported by disclaimer). The Board should construe the "assignment rule" limitation according to its plain and ordinary meaning like the district court. Pet., 8-9; EX1016, ¶35.

Claim 1 recites that "each of the content-related second data segments is output together with an associated one of the content-related first data segments on the basis of an **assignment rule for assigning** each one of the content-related second data segments to one of the content-related first data segments." EX1001, 7:51-57. PO construes the "assignment rule" limitation to first require the exact terms of the limitation, but then adds a negative limitation that "the assignment is not performed by using exact timing information for the content-related data segments." POR, 32; EX1017, 83:10-85:8 (Dr. Goodrich explaining that the construction of "assignment rule" contains two parts: (1) the claim language itself, and (2) the added negative limitation). This construction is wrong. EX1016, ¶35.

First, the Board should not import a negative limitation that is not required by claims 1 or 9, or the disclosed embodiments. *Superguide,* 358 F.3d at 875. The '794 patent describes that the assignment rule "can be described merely by the

specification of [a] number" of first data segments assigned to second data segments. EX1001, 2:47-54. In one embodiment, the assignment rule specifies that one audio segment (second data segment) is assigned to every second video segment (first data segment). *Id*., 5:38-58. Alternatively, the '794 patent describes embodiments where the assignment rule is based on a "chronological sequence of the first data segments." *Id*., 2:55-59. Thus, the assignment rule matches identifying numbers of the first and second data segments according to the segments' chronological sequence. EX1016, ¶36 (explaining Fig. 3 embodiment and EX1001, 5:38-58). There is no embodiment in the '794 patent that *requires* the assignment to "not [be] performed by using exact timing information for the content-related data segments," as PO contends. POR, 40-41; EX1017, 86:14-87:16 (Dr. Goodrich confirming that the specification does not describe "exact timing information"); EX1016, ¶37. The specification is explicit that it is merely "according to at least one embodiment" that "the assignment is carried out without the use of timestamps." EX1001, 2:36-43. The '794 patent is not limited to this example. EX1016, ¶¶36-37.

Second, the negative limitation in PO's construction fails under the claim differentiation principles. PO equates "exact timing information" with "timestamps." POR, 33 ("…using exact timing information (such as

timestamps).").[4] However, dependent claims 20 and 21 recite "the assignment rule is not based on a timestamp." EX1001, 9:1-4. Claims 1 and 9 cannot be construed to require a negative limitation that is already recited in dependent claims 20-21. *Curtiss-Wright Flow Control Corp. v. Velan, Inc.,* 438 F.3d 1374, 1380 ("an independent claim should not be construed as requiring a limitation added by a dependent claim.") (Fed. Cir. 2006); pre-AIA 35 U.S.C. §112 ¶4 (dependent claim must further define parent claim); EX1016, ¶38. The district court rejected PO's negative limitation under claim differentiation. EX1018, 109:6-14 (Judge Nall: "the patentee understood that the phrase 'assignment rule' includes assignment rules that can be based on a time stamp" because claims 20 and 21 exclude a timestamp); EX1016, ¶38. PO admits that the negative limitation it seeks to add in claims 1 and 9 "is not coextensive with the negative limitation of claims 20 and 21." POR, 39-40. The Board should reject PO's construction on this basis alone.

Nor has PO met the exacting standards required to show that disclaimer supports the negative limitation for its construction of "assignment rule": "disavowal requires that the specification or prosecution history make clear that the invention

[4] The relative term "exact timing information" appears nowhere in the specification of the '794 patent. EX1016, ¶37 (scope is unknown); EX1018, 109:4-6 (Judge Nall: "it's not entirely clear what VideoLabs means by 'exact timing information.'").

does not include a particular feature." *GE Lighting Sols. v. AgiLight, Inc.*, 750 F.3d 1304, 1309 (Fed. Cir. 2014). To constitute disclaimer, the applicant's statements must be "a clear and unambiguous disavowal of claim scope as required to depart from the meaning of the term provided by the written description." *Storage Tech. Corp. v. Cisco Sys*., *Inc.*, 329 F.3d 823, 833 (Fed. Cir. 2003).

During prosecution, the applicant argued that claim 1 was distinguishable over Shin (EX2011) and Rosenau (EX2012) because these references consider time information for synchronization, rather than using an assignment rule for synchronization. EX1002, 259-260 (Shin), 334-335 (Rosenau); POR, 33-39. However, the applicant never argued, nor did the examiner suggest, that the assignment rule in the '794 patent is "not performed by using exact timing information." There is no "clear and unambiguous disavowal of claim scope," *Storage Tech.*, 329 F.3d at 833, to support PO's improper construction. POR, 35-36, 39; EX1016, ¶¶39-40 (no disclaimer). The district court rejected PO's disclaimer argument. EX2009, 3; EX1018, 109:15-110:1. The Board should too.

C. PO's construction of the preambles of claims 1 and 9 is wrong.

PO argues that: (a) the preambles of claims 1 and 9 are limiting, and (b) the first and second data files must be different files. While these arguments are incorrect as shown below, the Board need not decide whether the preambles are limiting because Petitioner has shown that *Sonohara* and *Abbott* each teach the preambles.

Pet., 10-14, 33-35 (*Abbott* discloses [1.0] and [9.0]), 37-42, 55-56 (*Sonohara* discloses [1.0] and [9.0]); *Nidec Motor Corp. v. Zhongshan Broad Ocean Motor Co.*, 868 F.3d 1013, 1017 (Fed. Cir. 2017) (the Board "need only construe terms that are in controversy, and only to the extent necessary to resolve the controversy."). PO does not contest that *Abbott* discloses the preambles of claims 1 and 9. POR, 41-47 (only contesting limitations [1.2] and [9.2]).

1. The preambles of claims 1 and 9 are not limiting.

PO incorrectly argues that the preambles of claims 1 and 9 are limiting. POR, 21-27. While the preambles provide antecedent basis for "the content-related first data segments" and "the content-related second data segments" in the bodies of claims 1 and 9 and "the first data file" and "the second data file" in dependent claims 5, 13, 18, and 19 (POR, 23-24), antecedent basis alone is not dispositive and does not demonstrate the preamble is limiting if the preamble is not a necessary component of the claim. *Shoes by Firebug LLC v. Stride Rite Children's Grp., LLC*, 962 F.3d 1362, 1368 (Fed. Cir. 2020) ("antecedent basis alone is not determinative"). A limiting preamble must "recite[] essential structure or steps" or be "necessary to give life, meaning, and vitality to the claim." *Id*. at 1367. None of these conditions exist. The preambles do not recite any "essential structure" that is necessary to carry out the features in the bodies of claims 1 and 9 or claims 5, 13, 18, and 19, and the features in these claims are not given life, meaning or vitality

based merely on antecedent basis from the preambles. *Catalina Mktg. Int'l, Inc. v. Coolsavings.com, Inc.*, 289 F.3d 801, 809 (Fed. Cir. 2002) ("a preamble generally is not limiting when the claim body describes a structurally complete invention such that deletion of the preamble does not affect the structure or steps of the claimed invention.").

The bodies of claims 1 and 9 and dependent claims 5, 13, 18, and 19 define structurally complete concepts without reliance on the preambles except for a few non-determinative instances of antecedent basis. The content-related first and second data segments are sequentially output according to an assignment rule in the bodies of claims 1 and 9; that the segments originated from a "first data file" or "second data file" does not affect the structure or steps of the claims. EX1016, ¶42. Further, the preambles do not "provide necessary structure for the claimed inventions," or "capture the essence of the invention." POR, 25-27. PO's arguments that "'data segments' cannot exist in a vacuum" and that "every embodiment disclosed in the '794 patent describes synchronizing data segments that come from corresponding data files" is irrelevant to whether the preambles are limiting because the preambles do not affect the structure or steps. POR, 25-27; EX1016, ¶¶42-43. The most PO can point to is antecedent basis, but antecedent basis alone is insufficient to render the preambles limiting.

PO notes that district court litigants agreed that the preambles of claims 1 and

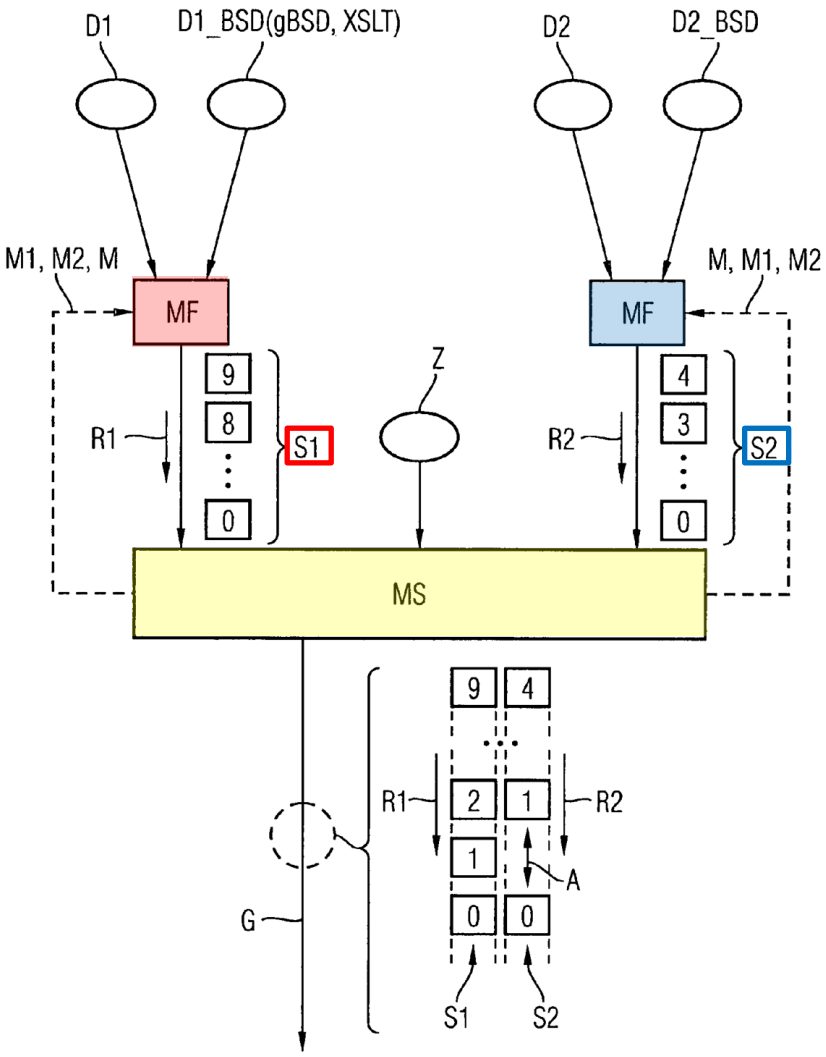
9 are limiting, but the Board is not bound to follow the parties' agreement. POR, 27; EX2003, 2 (parties agreed on preamble construction); EX2009; 2 (district court adopted "Agreed-Upon" construction); *see generally* EX1018 (preambles not addressed in *Markman* hearing).

2. Claims 1 and 9 do not require different data files.

PO argues that the "first data file" and "second data file" in the preambles of claims 1 and 9 must be "different data files" because the preambles use the numerical adjectives "first" and "second." POR, 27-29. PO's argument is wrong for two reasons. First, the bodies of claims 1 and 9 do not rely on the "first data file" or the "second data file." EX1016, ¶¶43-44. As the Board correctly observed in the Institution Decision, "the independent claims do not require synchronization of the first data file with the second data file; rather, those claims require synchronization of the 'first *data segments*' and 'second *data segments*.'" ID, 10 (citing preamble of claim 1). The content-related first and second data segments are sequentially output according to an assignment rule in claims 1 and 9 entirely independent from "a first data file" and "a second data file" recited in the preamble of claims 1 and 9. As shown in Figure 1, the synchronization module MS operates on the first data segments **S1** after they have been fragmented by the **first fragmentation module MF**, and operates on the second data segments **S2** after they have been fragmented by the **second fragmentation module MF**. EX1001, 4:42-49, 5:5-9. The segments'

origin (from data files D1 and D2) does not change the operation of the synchronization module MS. EX1016, ¶44.

FIG 1



EX1001, Fig. 1 (annotated)

Petitioner's showing that *Sonohara* and *Abbott* each disclose the preambles does not suggest that Petitioner "agrees" the first and second data files must be

different files, as PO argues. POR, 29. It shows there is no need to construe the preambles as the prior art meets them even if construed.

PO's argument that claim 5 "does not add a requirement that the first and second data files are distinct" (POR, 29-30) is wrong for the reasons noted by the Board. ID, 9-10 (claim 5 "appears to add a limitation that the first and second data files are distinct."). This requirement in claim 5 means that distinct data files are "not part of the underlying independent claim." *Id*.

II. THE CHALLENGED CLAIMS ARE UNPATENTABLE UNDER THE *SONOHARA*-BASED GROUNDS

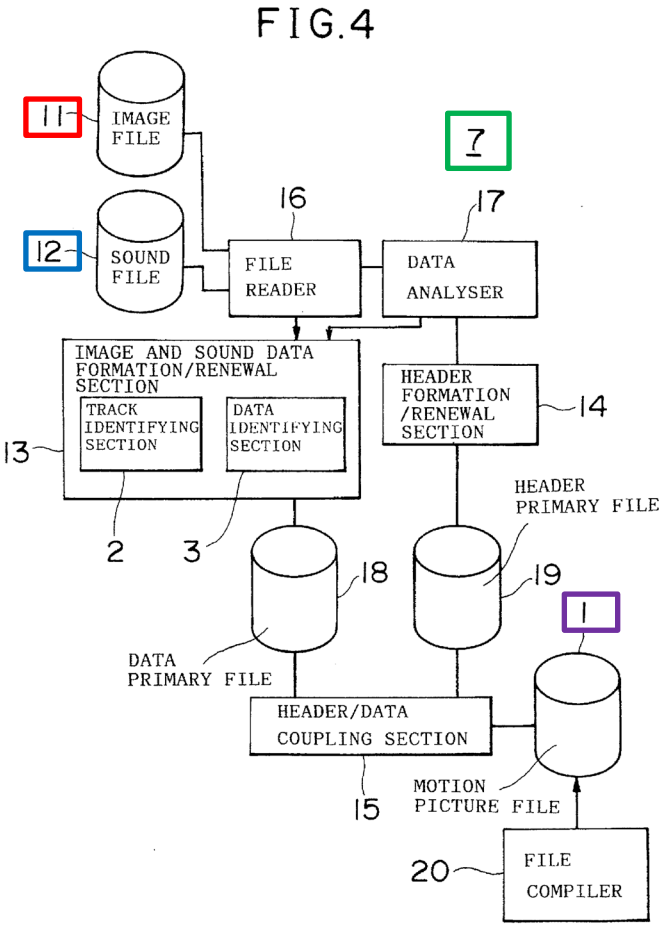
PO's arguments against the *Sonohara*-based grounds (Grounds 3-4) are based entirely on its improper claim constructions. If the Board construes claims 1 and 9 according to their plain and ordinary meaning, the *Sonohara*-based grounds of the Petition are uncontested. Even if PO's improper constructions are adopted, PO's arguments against *Sonohara* are wrong.

A. *Sonohara* expressly discloses synchronizing and sequentially outputting content-related data files from two distinct files.

The Petition showed that *Sonohara* discloses limitations [1.1] and [1.2]. Pet., 42-46 ([1.1]), 46-51 ([1.2]). PO's arguments against *Sonohara* are based on a fundamental misunderstanding that *Sonohara* synchronizes only "a single data file 1 with unit times of audio and video data." POR, 49, 50-52. PO's arguments focus on individual drawings of *Sonohara* without considering the disclosure of *Sonohara*

as a whole. EX1016, ¶46.

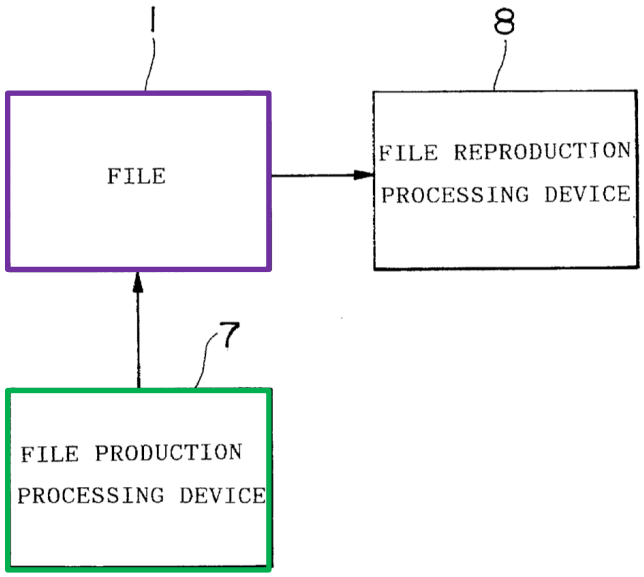
First, *Sonohara*'s image data and sound data originate from an "**image file 11**" and "**sound file 12**," as shown in Figure 4 below. EX1003, 4:12-20. As shown in the Petition, *Sonohara* discloses that *content-related first data segments* (image data segments) are *of a first data file* (**image file 11**) and *content-related second data segments* (sound data segments) are *of a second data file* (**sound file 12**). Pet., 40-42; EX1005, ¶¶130-131; EX1016, ¶47.



EX1003, Fig. 4 (annotated)

Sonohara's Figure 4 "is a block diagram showing a structure of the **file production processing device 7**" that uses the **image file 11** and **sound file 12** to generate a **file 1.** EX1003, 4:12-13. As shown in Figure 2, *Sonohara*'s "motion picture reproducing apparatus 2" includes "**file 1** into which image data of a moving object and audio data are stored, a **file production processing device 7** for producing the **file 1** from the **image file 11** and the **sound file 12**, and a file reproduction processing device 8 for reproducing the video data and audio data of the **file 1**." EX1003, 3:49-58; EX1016, ¶48.

FIG. 2

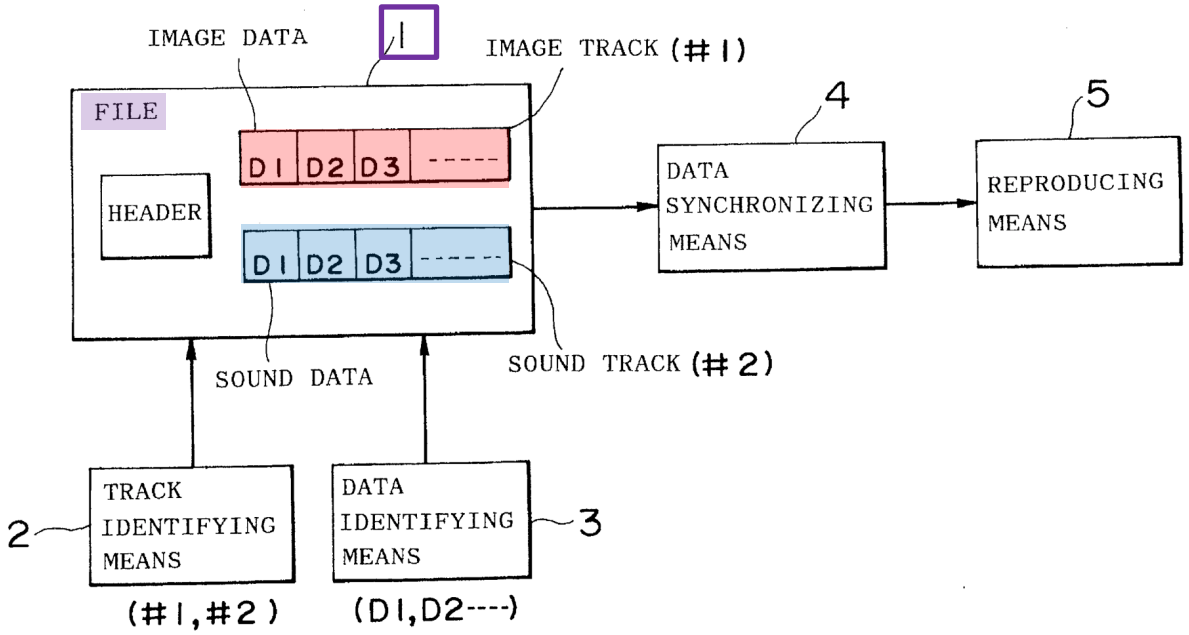


EX1003, Fig. 2 (annotated)

As shown in the Petition, *Sonohara* discloses synchronizing the **image data segments** (*content-related first data segments*) and the **sound data segments**

(*content-related second data segments*) in the **file 1**, as shown in Fig. 1. Pet., 37-40 (citing EX1003, 1:59-2:4, claim 1, 11:59-62, 5:57-65, 5:14-17, 5:44-6:67; EX1005, ¶¶125-129). The **file 1** containing the **image data segments** and **sound data segments** was created by the **file production processing device 7** from the **image file 11** and **sound file 12**, as shown in Figures 2 and 4. EX1016, ¶49.

FIG.1



EX1003, Fig. 1 (annotated)

PO's argument that "[t]he single data file disclosed in *Sonohara* cannot meet the claim requirement of two, different data files" (POR, 50) is incorrect, because the "**single data file**" **1** in Figure 1 was created by the **file production processing device 7** from the distinct **image file 11** and **sound file 12**, as shown in Figures 2

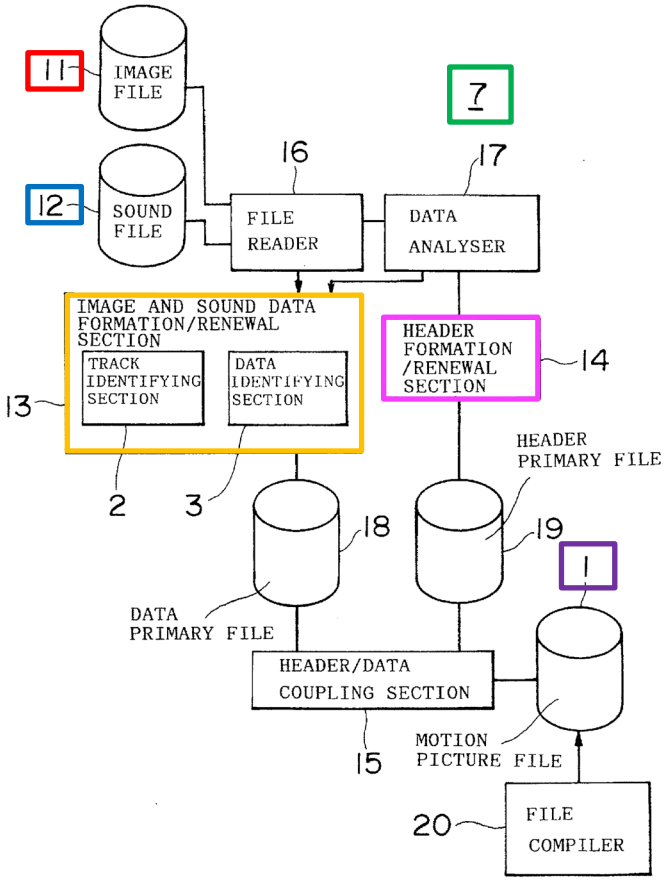
and 4. EX1016, ¶¶50-51.

Second, PO's argument that "the two source data files…do not have corresponding 'content-related…data segments'" is wrong. POR, 50-51. PO incorrectly argues that Petitioner "alternates between relying on the single data file and then relying on the two source data files." POR, 51. This argument is incorrect because Petitioner showed that the **file 1** containing **image data segments** and **audio data segments** in Figure 1 originated from the distinct **image file 11** and **sound file 12**, as shown in Figure 4. Pet., 40-41; EX1005, ¶¶130-131; EX1016, ¶52.

Further, PO incorrectly argues that each of "the two source data files (11 and 12 in Figure 4) have different syntaxes," because they "only contain[] audio or image data, and so the order and structure of each file is necessarily different than the single data file 1 that stored both kinds of data." POR, 51. PO misunderstood the disclosure of *Sonohara*. The **file 1** is created by **file production processing device 7** from two separate files, the **image file 11** and **sound file 12**, as shown in Figure 4. The **file 1** does not have separate syntaxes as PO alleges. Rather, as shown in Figure 4 below, the **file 1** has the syntaxes (e.g., header and track identification numbers) assigned by the **image and sound data formation/renewal section 13** and the **header formation/renewal section 14** of the **file production processing device 7**, which produces the **file 1** containing the image and audio data segments shown in Figure 1. EX1003, 4:25-67 (**file 1** is created with header information including track and

data identification numbers for the image and sound portions of the file 1); EX1016, ¶52.

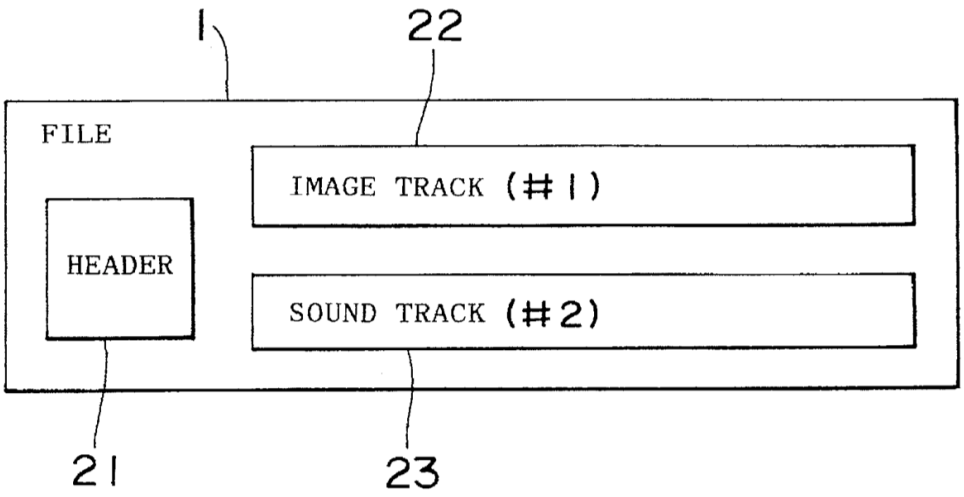
FIG.4



EX1003, Fig. 4 (annotated)

As shown in Figure 3 below, the file 1 contains header 21 with syntax information (header, track information) for the image track 22 and sound track 23 of the file 1. EX1003, 3:67-4:7; EX1016, ¶53.

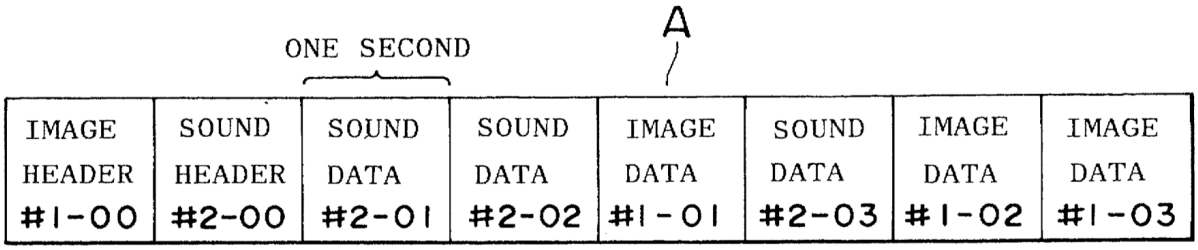
FIG.3



EX1003, Fig. 3

As shown in Figure 7 below, the track identifying means 2 in Figure 1 imparts track identifying numbers for identifying the image and sound tracks at every unit time. EX1003, 1:59-62. For example, "track identifying number #1 is given to the image data for every unit time," and "track number #2 is given to the sound data for every unit time." EX1003, 6:14-17, 6:44-46. As shown in the Petition, each portion of data for a unit of time corresponds to a *segment* as recited. Pet. 38; EX1005, ¶128. Further, as shown in the Petition, *Sonohara* discloses that the image and sound data segments in the file 1 are synchronized and output sequentially based on the track and data identifying numbers in the file 1, as shown in Figures 1 and 7. Pet., 42-44; EX1005, ¶¶135-137; EX1016, ¶54.

FIG.7



EX1003, Fig. 7

Thus, PO is wrong that "the syntactical meaning" "is different between the source data files and the single data file" (POR, 51-52), because the **file 1** is created from the image and sound portions of the distinct **image file 11** and **sound file 12**, as shown in Figures 3-4, and the **file 1** includes syntax information including header information with track and data identifiers identifying the relationship between the image and audio portions of the **file 1**, as shown in Figures 1, 3, and 7. EX1016, ¶55.

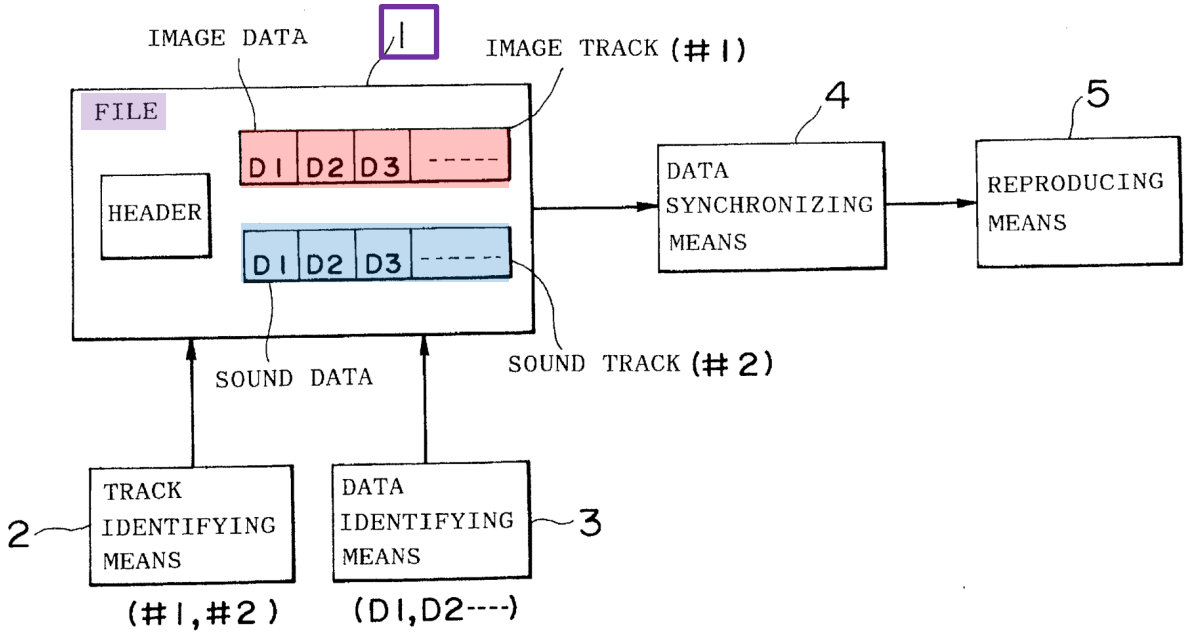
PO incorrectly argues that the "single data file" is different than the **image file 11** and **sound file 12** because the unit times of the audio and image data are "imparted" with track numbers and identifying numbers. POR, 52-55. This argument lacks merit. The **file 1** is created from **image file 11** and **sound file 12**, and header information (header 21 in Figure 3) is added to the **file 1** so that the image and audio data segments in the file are synchronized (e.g., stored together like the '794 patent, *see* EX1001, 2:43-46) based on the track and data identifiers in the header

identifying relationships between the image and audio portions of the file 1. Pet., 42-44; EX1005, ¶¶135-137; EX1016, ¶54.

Therefore, *Sonohara* discloses synchronizing and sequentially outputting content-related data files from two distinct files. Pet., 42-46; EX1005, ¶¶134-137; EX1016, ¶49.

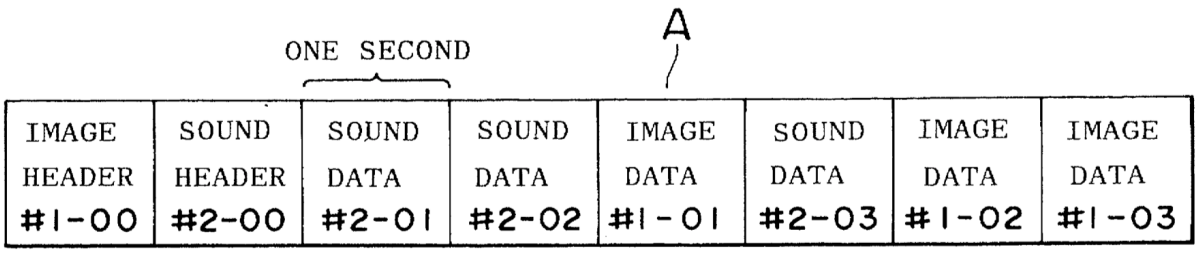
Further, as shown in Figures 1 and 7 below, even under PO's erroneous construction, *Sonohara* discloses the image **data segments** and audio **data segments** are ordered in a **file 1** (created from **image file 11** and **sound file 12**) such that the segments will present **file 1's** contents in their intended presentation order when rendered sequentially based on their track identifying numbers (e.g., #1, #2) and data identifying numbers (e.g., 01, 02, 03). EX1016, ¶56.

FIG.1



EX1003, Fig. 1 (annotated)

FIG.7



EX1003, Fig. 7

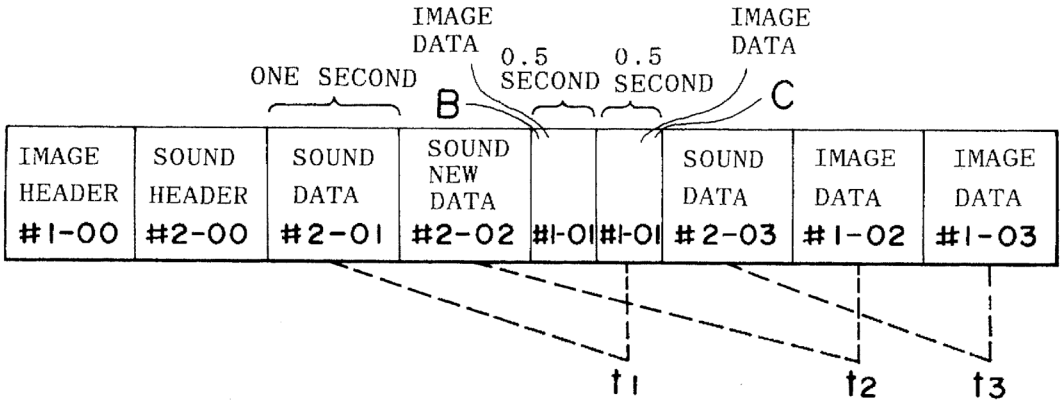
B. *Sonohara* discloses the assignment rule in claims 1 and 9.

PO's arguments against the "assignment rule" in claims 1 and 9 are incorrectly premised on its "disclaimer" argument, which is wrong for the reasons in Section

I.B above. EX1016, ¶¶57-58. Even if PO's incorrect construction is adopted, claims 1 and 9 are unpatentable.

The Petition showed that *Sonohara* outputs the first and second *content-related data segments…together…on the basis of an assignment rule* for assigning each of the first and second data segments to each other. Pet., 46-51. As shown in Figure 8, *Sonohara* discloses synchronizing and outputting the image and sound segments having the same identifying number (e.g., "sound data #2-01" and "image data #1-01") at the same time based on control information in the header (an *assignment rule*), which "includ[es] control information for controlling transfer of said image data and said sound data…said control information **indicating a relationship between said image data and said sound data**…." Pet., 47-48 (citing EX1003, 7:43-51, claim 1; EX1005, ¶¶143-148); EX1016, ¶59.

FIG.8



EX1003, Fig. 8

PO argues that *Sonohara*'s header cannot be an *assignment rule* because the header's identifying numbers are "merely used to identify (and thus distinguish) the unit times from one another," and the track numbers "simply distinguish between audio unit times and image unit times." POR, 60. PO theorizes, based only on attorney argument (POR, 60-61), that this cannot be an assignment because "exact timing information" may lead to problems "if the unit times were not all the same length or if they were not all output at exact times." POR, 60. Similarly, PO theorizes that *Sonohara*'s assignment does not use the same "align[ment]" technique in "[t]he Figure 1 embodiment [of the '794 patent]," which does not rely on exact timing information. POR, 61-63. PO's theories are incorrectly based on its disclaimer arguments and improperly import limitations not required by the claims. *Sonohara*'s track and identifying numbers in the file's header 21 are each "an identifier…uniquely given to the track which is present in the file 1," and the image and audio identifiers "allow[] recognition of which specific track the data belongs." EX1003, 4:35-44. These identifiers in *Sonohara*'s assignment rule do not themselves use "exact timing information." EX1016, ¶60.

C. *Sonohara*'s assignment rule is not based on a timestamp.

Regarding claims 20 and 21, PO incorrectly argues that *Sonohara*'s assignment rule is based on a timestamp because the image and audio data segments "all [have] the same exact time duration," and the unit times for the image and audio

data segments are reproduced together. POR, 63-65. *Sonohara*'s assignment rule is not based on a timestamp because it uses synchronization information (data and track identifiers) in the file header for the image and audio data segments (e.g., "sound data #2-01" and "image data #1-01" in Figure 8) to output and synchronize image and audio segments. Pet., 54-55 (citing EX1003, Abstract, Fig. 8); EX1005, ¶166-169.

III. THE CHALLENGED CLAIMS ARE UNPATENTABLE UNDER THE *ABBOTT*-BASED GROUNDS

The Petition showed that the challenged claims are anticipated and rendered obvious by *Abbott*. Pet., 10-36.

In its POPR, PO presented only attorney argument contending that *Abbott* does not disclose outputting *each* of the second data segments together with a first data segment based on an assignment rule. POPR, 27-33. In the Institution Decision, the Board "agree[d] with Patent Owner's characterization of Abbott's disclosure." ID, 17. In its Response, PO again relied only on attorney argument,[5] reiterating its argument that *Abbott* allegedly teaches only outputting an audio segment with the

[5] Dr. Goodrich's declaration (EX2007) does not address the *Abbott*-based grounds. EX1017, 19:23-20:4 (Dr. Goodrich was not asked to opine on the *Abbott*-based grounds).

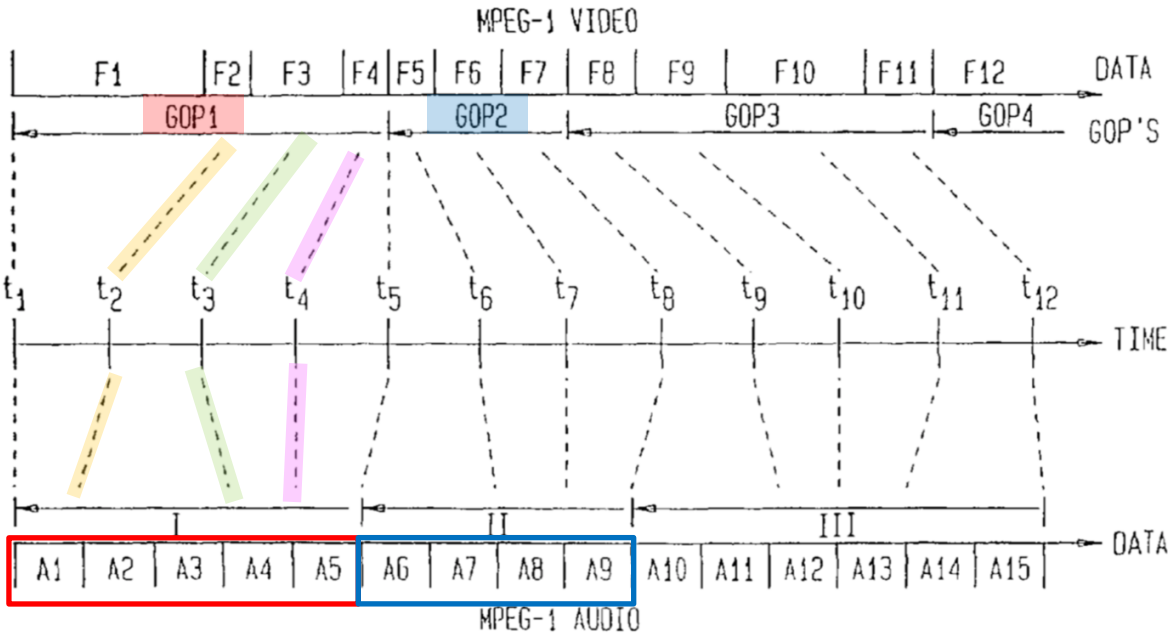
first video segment of a group of pictures (GOP). POR, 41-47.

PO's characterization of *Abbott* was, and is, incorrect. The Board's reliance on PO's attorney argument should be reconsidered in light of Dr. Freedman's testimony, which conclusively rebuts PO's incorrect arguments. EX1016, ¶¶62-68. PO has not argued against the *Abbott*-based grounds under its erroneous constructions, and thus has waived any arguments against *Abbott* under its erroneous constructions.

A. *Abbott* discloses outputting each of the second data segments together with a first data segment.

Abbott discloses video data segmented into "Groups of Pictures" (GOPs) (*first data segments*), and audio data segmented into audio frames (*second data segments*). EX1004, 17:3-41; Pet., 13; EX1005, ¶62. *Abbott*'s Figure 9 below shows an example where **GOP1** includes video segments F1-F4, **GOP2** includes video segments F5-F7, and so on. Pet., 18-20 (citing EX1004, 17:3-26); EX1005, ¶77. Each GOP corresponds to a *first data segment*. Pet., 19-20; EX1005, ¶77; EX1016, ¶63.

FIG. 9



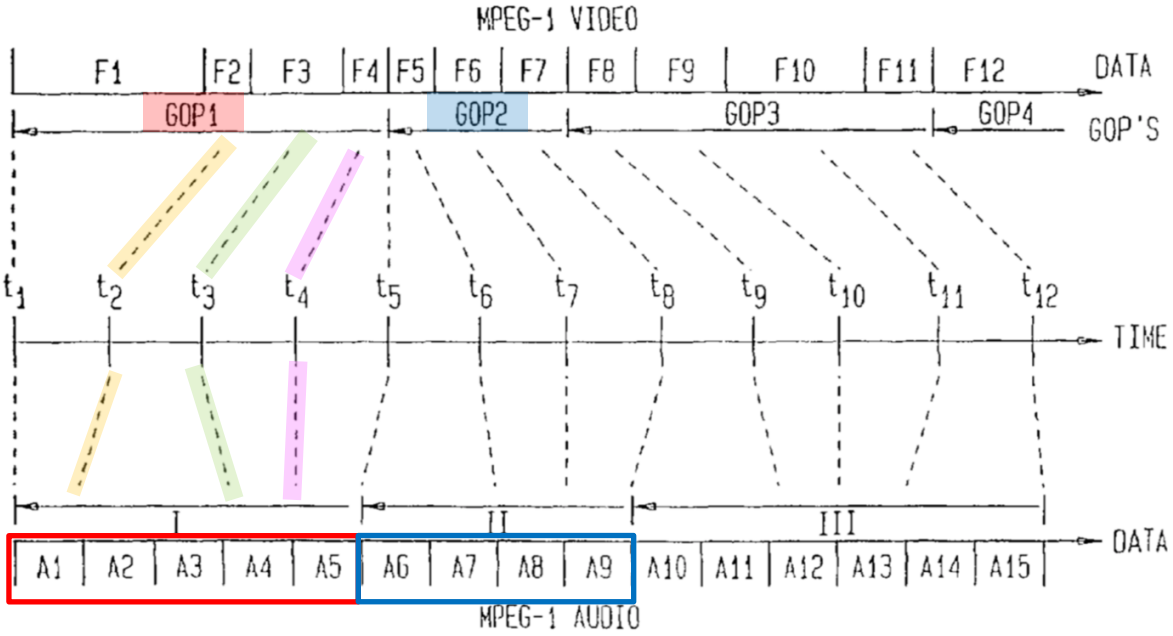
EX1004, Fig. 9 (annotated)

As shown in Figure 9, multiple audio frames (*content-related second data segments*) are assigned to one GOP. For example, audio segments **A1-A5** are assigned to **GOP1** (spanning time interval t_1 to t_5), and audio segments **A6-A9** are assigned to **GOP2** (spanning time interval t_5 to t_8). Pet., 20-21 (citing EX1004, 17:27-35); EX1005, ¶78; EX1016, ¶64.

PO argues that *each* of *Abbott*'s audio segments (*second data segments*) are not assigned to one video segment (GOP) (*first data segments*) because the audio segments are allegedly only output at the start of the GOP. POR, 44 (arguing, e.g., that audio frame A2 would be output at the start of GOP1). This is flatly wrong and

contradicted by ***Abbott's*** the teachings and a POSITA's interpretation of *Abbott*, as Dr. Freedman's uncontested testimony confirms. EX1016, ¶65 (explaining how audio segments are assigned to different video segments (frames) in one GOP). As shown in Figure 9, audio segment A1 is output at the beginning of GOP1 (i.e., frame F1) at time t_1. Then, at time t_2, audio frames A2 and A3 are output sequentially with frame F2 of GOP1, not at the start of GOP1 (i.e., frame F1). At time t_3, audio frame A4 is output with frame F3 of GOP1, not at the start of GOP1. At time t_4, audio frame A5 is output with frame F4 of GOP1, not at the start of GOP1. EX1016, ¶65.

FIG. 9



EX1004, Fig. 9 (annotated)

Contrary to PO's attorney argument (POR, 44), *Abbott* does not indicate that each

audio frame is output at the beginning of the assigned GOP, or that "the same video GOP" is "partially output multiple times in a row"; such an interpretation is contrary to *Abbott's* express disclosure and nonsensical. *Abbott* "ensure[s] that the audio and video **remain** synchronized" without "a time delay or offset between the video and the audio" (EX1004, 18:49-65), which is inconsistent with PO's characterization of *Abbott* as repeatedly outputting a segment of video with multiple audio segments. EX1016, ¶65 (explaining that PO's interpretation of outputting each audio frame A1-A5 with the **start** of GOP1 (POR, 44) is contrary to a POSITA's understanding of *Abbott*); *Icon Health & Fitness, Inc. v. Strava, Inc.*, 849 F.3d 1034, 1043 (Fed. Cir. 2017) ("Attorney argument is not evidence.").

Abbott explains that "synchronization is done by correlating audio frames of the audio data with GOPs of the video data." EX1004, 18:58–63; Pet., 21. As shown in Figure 9, each audio frame is sequentially output with one of the GOPs (e.g., audio data segments A1-A5 are sequentially output with frames F1-F4 of GOP1). Pet., 24; EX1005, ¶¶82-86; EX1016, ¶66.

B. *Abbott* discloses outputting each of the second data segments together with a first data segment based on an assignment rule.

Abbott discloses that the audio data segments are output with the video frames of a GOP by using an index file (*assignment rule*), which correlates audio segments with a GOP. Pet., 24-25 (citing EX1004, 18:66-19:17, 20:6-24, 19:58-60). PO's

attorney argument incorrectly contends that "Abbott's index files correlate *multiple* audio frames to the start of each video GOP, which is fundamentally different than the assignment rules of the '794 patent." POR, 44. PO's misunderstanding of *Abbott* is based on the error that every audio frame assigned to a GOP must be associated with "the start of each video GOP." As shown in *Abbott*'s Figure 9, multiple audio segments (e.g., A1-A5) are assigned to a GOP (e.g., GOP1) (*an assignment rule for assigning each of one of the content-related second data segments to one of the content-related first data segments*), and upon output, the audio segments are sequentially output *in such a way that each of the* audio segments A1-A5 are output *together with an associated one of the content-related first data segments* (i.e., GOP1). EX1016, ¶67.

PO incorrectly argues that *Abbott* has a "single use" assignment rule that "only uses the index files" (the *assignment rule*) "to correlate an audio frame with a video GOP when the user moves to a different point within the media," based on PO's characterization that *Abbott*'s index file is only used to "jump" to different points in the program material. POR, 42-43, 41 ("single use"). This argument is wrong because the challenged claims do not require "assignment" at a particular time during video playback. Claims 1 and 9 only require assignment of each second data segment (e.g., *Abbott*'s audio segments A1-A5) to one of the first data segments (e.g., *Abbott*'s GOP1). This is clearly taught as shown in *Abbott*'s Figure 9. EX1016,

¶68.

IV. CONCLUSION

The Board should find the challenged claims unpatentable.

Respectfully submitted,

Dated: June 26, 2023

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PETITIONER'S EXHIBIT LIST

EX1001	US Patent 8,605,794 to Hellwagner et al.
EX1002	Prosecution File History of US Application
EX1003	US Patent 5,627,656 to Sonohara *et al.*
EX1004	US Patent 6,654,933 to Abbott *et al*.
EX1005	Declaration of Dr. Immanuel Freedman
EX1006	Scheduling Order, *Starz Entertainment, LLC v. VL Collective IP, LLC et al.*, 1:21-cv-01448-JLH, Dkt. 18 (Feb. 10, 2022)
EX1007	[LEX MACHINA ALBRIGHT STATS]
EX1008	Scheduling Order, *VideoLabs, Inc. v. Amazon.com, Inc.*, 6:22-cv-00079, Dkt. 36 (May 10, 2022)
EX1009	[reserved]
EX1010	Declaration of Kevin Jakel
EX1011	Microsoft Computer Dictionary (5th ed.) (excerpts)
EX1012	"A Media Synchronization Survey: Reference Model, Specification, and Case Studies", Blakowski et al., IEEE Journal on Selected Areas in Communications, Vol. 14 No. 1, Jan. 1996.
EX1013	Merriam-Webster's Collegiate Dictionary (10th ed.) (excerpts)
EX1014	"Interval-Based Conceptual Models for Time-Dependent Multimedia Data," Little et al., IEEE Transactions on Knowledge and Data Engineering, Vol. 5 No. 4, Aug. 1993.
EX1015	"Synchronization Attributes and Rules of Active Object-Oriented Database for Multimedia Presentation," Yun et al., Proceedings of the Fourth International Conference on Database Systems for Advanced Applications (DASFAA '95), Apr. 1995.
EX1016 **(NEW)**	Supplemental Declaration of Dr. Immanuel Freedman
EX1017 **(NEW)**	Deposition Transcript of Dr. Michael T. Goodrich
EX1018 **(NEW)**	Transcript of Markman Hearing, *Starz Entertainment, LLC v. VL Collective IP, LLC et al.*, 1:21-cv-01448-JLH (Dec. 16, 2022)

EX1019 **(NEW)**[6]	Panis et al., "Bitstream syntax description: a tool for multimedia resource adaptation with MPEG-21," Signal Processing, Image Communication, Elsevier Science Publishers, Amsterdam, NL, Vol. 18, No. 8, Sep. 2003, pp. 721-747, ISSN: 0923-5965

[6] EX1019 is Exhibit A discussed during Dr. Goodrich's deposition (EX1017) and Document [1] cited in the '794 Patent. EX1001, 7:30-34.

CERTIFICATE OF WORD COUNT

Pursuant to 37 C.F.R. § 42.24, the undersigned attorney for the Petitioner, Unified Patents, LLC, declares that this Reply (Sections I-IV) has a total of 5,598 words, according to the word count tool in Microsoft® Word.

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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Unified Patents, LLC, Petitioner	§	Petition for *Inter Partes* Review
	§	
	§	IPR2022-01086
	§	U.S. Patent 8,605,974

CERTIFICATE OF SERVICE

The undersigned certifies, in accordance with 37 C.F.R. § 42.6, that service was made on the Patent Owner as detailed below.

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