

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

NETFLIX, INC.,
Petitioner,

v.

VL COLLECTIVE IP LLC,
Patent Owner.

Case IPR2023-00891
Patent No. 8,605,794 B2

**PETITION FOR *INTER PARTES* REVIEW
OF U.S. PATENT NO. 8,605,794 B2**

Petition Filing Date: May 5, 2023

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EXHIBIT LIST

Exhibit Number	Description
1001	Patent-at-Issue: U.S. Patent No. 8,605,794 to Hellwagner, “Method for Synchronizing Content-dependent Data Segments of Files,” filed on March 16, 2006 (“’794Pat”).
1002	File History of the ’794 patent (Application No. 11/918,276 (“’794FH”).
1003	Declaration of Dr. Benjamin, Ph.D. (“Bederson”)
1004	U.S. Patent No. 7,386,782 to Comps, “Method for Synchronizing a Multimedia File,” filed on September 13, 2001 (“Comps”).
1005	U.S. Patent Application Publication No. 2004/0024898 to Wan, “Delivering Multimedia Descriptions,” filed on July 5, 2001 (“Wan”).
1006	U.S. Patent Application Publication No. 2004/0098398 to Ahn, “Method and Apparatus for Delivery of Metadata Synchronized to Multimedia Contents,” filed on January 30, 2002 (“Ahn”).
1007	U.S. Patent Application Publication No. 2003/0101364 to Kim, “Method of Ensuring Synchronous Presentation of Additional Data with Audio Data Recorded on a Rewriteable Recording Medium,” filed on November 27, 2002 (“Kim”).
1008	EP 1051008A2 to Jones, “Method and Apparatus for Media Data Transmission” filed on January 13, 1999 (“Jones”).
1009	U.S. Patent No. 7,827,297 to Kristjansson, “Multimedia Linking and Synchronization Method, Presentation and Editing Apparatus,” filed on January 18, 2003 (“Kristjansson”).
1010	U.S. Patent Application Publication No. 2005/0190872 to Seong, “Transcoding System and Method for Maintaining Timing Parameters before and after Performing Transcoding Process,” filed on February 10, 2005 (“Seong”).

1011	U.S. Patent No. 7,627,811 to Thong, “Content-based Synchronization Method and System for Data Streams,” filed on March 4, 2005 (“ <i>Thong</i> ”).
1012	U.S. Patent Application Publication No. 2003/0061369 to Aksu, “Processing of Multimedia Data,” filed on September 20, 2002 (“ <i>Aksu</i> ”).
1013	U.S. Patent Application Publication No. 2005/0165941 to Eytchison, “Methods and Apparatuses for Streaming Content,” filed on January 22, 2004 (“ <i>Eytchison</i> ”).
1014	U.S. Patent No. 5,724,605 to Wissner, “Method and Apparatus for Representing and Editing Multimedia Compositions Using a Tree Structure,” filed on March 31, 1995 (“ <i>Wissner</i> ”).
1015	U.S. Patent No. 5,515,490 to Buchanan, “Method and System for Temporally Formatting Data Presentation in Time-dependent Documents,” filed on November 5, 1993 (“ <i>Buchanan</i> ”).
1016	U.S. Patent Application Publication No. 2004/0064831 to Abbott, “System and Method for Media Stream Indexing and Synchronization,” filed on October 1, 2003 (“ <i>Abbott</i> ”).
1017	<i>Starz Entm’t, LLC v. VL Collective IP, LLC</i> , Amended Joint Claim Construction Chart, pages 1-16 (Dkt. 80).
1018	<i>Starz Entm’t, LLC v. VL Collective IP, LLC</i> , Joint Claim Construction Brief filed by Plaintiffs, pages 1-73 (Dkt. 78).
1019	<i>Starz Entm’t, LLC v. VL Collective IP, LLC</i> , Claim Construction Order (Dkt. 88)

LISTING OF CHALLENGED CLAIMS

1[pre] A method for synchronizing content-related first data segments of a first data file and content-related second data segments of a second data file, the method comprising:
1[a][1] sequentially outputting, by a device for synchronizing content-related data, the content-related first data segments and the content-related second data segments according to their chronological sequence in such a way that
1[a][2] 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.
2 The method as claimed in claim 1, wherein the assignment rule is formed in such a way that each of the content-related second data segments are assigned to precisely one of the content-related first data segments and a further assignment is carried out after a number of sequentially succeeding content-related first data segments.
3 The method as claimed in claim 1, wherein the assignment rule is formed in such a way that, for each of the content-related second data segments, the content-related first data segments are assigned by specification of a number, the number representing a position of the content-related first data segments within the order of content-related first data segments.
4 The method as claimed in claim 1, wherein the second content-related data segments belong to a plurality of second data files, and the content-related first data segments and the content-related second data segments are synchronized on the basis of a combined assignment rule.
5 The method as claimed in claim 1, wherein media data are represented by at least one of the first data file and the second data file.
6 The method as claimed in claim 1, wherein at least one of the content-related first data segments and content-related second data segments are generated on the basis of at least one of the generic bit stream syntax description and the extensible stylesheet language transformation.
7 The method as claimed in claim 1, further comprising: determining, based

upon a content-related marker, which content-related first data segments and content-related second data segments are to be output first in time.
8 The method as claimed in claim 7, wherein at least one of a scene change in an image sequence and a change of speaker in a speech sequence is identified by way of at least one of the first content-related markers and the second content-related markers.
9[pre] A device for synchronizing content-related first data segments of a first data file and content-related second data segments of a second data file, comprising:
9[a][1] a synchronization device configured to output each of the content-related first data segments and the content-related second data segments, sequentially, according to their chronological sequence,
9[a][2] each of the content-related second data segments being output together with an associated one of the content-related first data segments based upon of an assignment rule for assigning each one of the content-related second data segments to each one of the content-related first data segment.
10 The method as claimed in claim 2, wherein the second content-related data segments belong to a plurality of second data files, and the content-related first data segments of the first data file and the content-related second data segments are synchronized on the basis of a combined assignment rule.
11 The method as claimed in claim 3, wherein the second content-related data segments belong to a plurality of second data files, and the content-related first data segments of the first data file and content-related second data segments are synchronized on the basis of a combined assignment rule.
12 The method as claimed in claim 5, wherein the media data include at least one of video and audio data.
13 The method as claimed in claim 1, wherein at least one of media data and metadata are represented by at least one of the first data file and the second data file.
14 The method as claimed in claim 13, wherein the metadata include

metadata encoded according to the XML standard.
15 The method as claimed in claim 13, wherein the media data include at least one of video and audio data.
16 The method as claimed in claim 1, wherein the assignment rule is predefinable.
17 The device as claimed in claim 9, wherein the assignment rule is predefinable.
18 The method of claim 1, wherein the assignment rule is maintained in a file separate from the first data file and the second data file.
19 The device of claim 9, wherein the assignment rule is maintained in a file separate from the first data file and the second data file.
20 The method of claim 1, wherein the assignment rule is not based on a timestamp.
21 The device of claim 9, wherein the assignment rule is not based on a timestamp.
22[pre] A method for synchronizing content-related first data segments of a first data file and content-related second data segments of a second data file, the method comprising:
22[a][1] determining an order for the content-related first data segments to be read out from the first data file and an order for the content-related second data segments to be read out from the second data file,
22[a][2] the content-related first data segments being ordered according to corresponding first content-related markers and the content-related second data segments being ordered according to corresponding second content-related markers;
22[b] assigning, according to an assignment rule, each of the ordered content-related second data segments that are read out from the second data file with a corresponding one of the ordered content-related first data segments that are read out from the first data file; and
22[c] sequentially outputting, by a device for synchronizing content-related

data, in a chronological sequence, each of the assigned content-related first data segments and the assigned content-related second data segments.

I. INTRODUCTION

Petitioner respectfully requests *Inter Partes* Review of claims 1-22 of U.S. Patent No. 8,605,794, filed on March 16, 2006 and assigned to VL Collective IP LLC (“Patent Owner”).

At its core, the ’794 patent purports to cover the basic idea of synchronizing content-related data segments of files. *See* ’794*Pat*, Claims 1, 9, and 22; *see also id.*, Title and Abstract. The synchronization is done by using an assignment rule (*e.g.*, by specification of a number) or a marker. *See id.*, Claims 1, 3, 9, and 22. Unsurprisingly, this simple concept was well-known before the ’794 patent. For example, all of three independent claims are anticipated by *Comps*, which predates the ’794 patent but was never considered by the Patent Office. The remaining claims contain minor variations on the theme, all of which were well-known in the art at the time of the purported invention. Thus, as described further in this Petition, the prior art renders every claim of the ’794 patent anticipated or obvious and therefore unpatentable.

As demonstrated below, there is a high likelihood that Petitioner will prevail with respect to each of the challenged claims and, therefore, Petitioner respectfully requests that the Board institute trial.

II. GROUNDS FOR STANDING (37 C.F.R. §42.104(A))

Petitioner certifies that the '794 patent is available for *inter partes* review (“IPR”) and Petitioner is not barred or estopped from requesting IPR to challenge the claims on the grounds herein. Petitioner files this Petition within one year of service of Patent Owner’s amended complaint against Petitioner, in which the Patent Owner first asserted the '794 patent against Petitioner. *See GoTV Streaming, LLC v. Netflix, Inc.*, No. 2:22-cv-07556-RGK-SHK (C.D. Cal. May 6, 2022).

III. STATEMENT OF PRECISE RELIEF REQUESTED FOR EACH CLAIM CHALLENGED, INCLUDING CLAIMS AND STUTORY GROUNDS (37 C.F.R. §42.204(B))

Petitioner respectfully requests review and cancellation under 35 U.S.C. §311 of the challenged claims in view of:¹

Prior Art
U.S. Patent No. 7,386,782 to Comps, “Method for Synchronizing a Multimedia File,” filed on September 13, 2001, PCT published on March 21, 2002, and published on March 20, 2004 (“ <i>Comps</i> ”); prior art under pre-AIA 35 U.S.C. §102(a) and (e) (Exhibit)
U.S. Patent Application Publication No. 2004/0024898 to Wan, “Delivering Multimedia Descriptions,” filed on July 5, 2001 and published on February 5, 2004 (“ <i>Wan</i> ”); prior art under pre-AIA 35 U.S.C. §102(a), (b), and (e) (Exhibit)
U.S. Patent Application Publication No. 2004/0098398 to Ahn, “Method and Apparatus for Delivery of Metadata Synchronized to Multimedia Contents,” filed on January 30, 2002 and published on May 20, 2004 (“ <i>Ahn</i> ”); prior art under pre-

¹ Petitioners do not concede that any challenged claims satisfy other requirements for patentability that cannot be raised in IPR, including 35 U.S.C. §§101 and 112.

AIA 35 U.S.C. §102(a) and (e) (Exhibit)
U.S. Patent Application Publication No. 2003/0101364 to Kim, “Method of Ensuring Synchronous Presentation of Additional Data with Audio Data Recorded on a Rewriteable Recording Medium,” filed on November 27, 2002 and published on May 29, 2003 (“ <i>Kim</i> ”); prior art under pre-AIA 35 U.S.C. §102(a), (b) and (e) (Exhibit)

Ground	Claims	Basis
1	1-5, 9-13, 15-17, 20-21	35 U.S.C. §102 based on <i>Comps</i>
2	6-8, 22	35 U.S.C. §103 based on <i>Comps</i> in view of <i>Wan</i>
3	14	35 U.S.C. §103 based on <i>Comps</i> in view of <i>Ahn</i>
4	18, 19	35 U.S.C. §103 based on <i>Comps</i> in view of <i>Kim</i>

IV. PATENT OVERVIEW AND PRIORITY DATE

A. Background of Multimedia Systems for Synchronizing Contents²

Multimedia systems including synchronizing multimedia contents (*e.g.*, video and audio contents) were hardly new by the mid-2000s. *Bederson*, ¶¶38-49. Various techniques for synchronizing multimedia contents existed prior to 2005.

² This background, and the Grounds of Unpatentability herein, are further supported by the Declaration of Petitioner’s expert, Benjamin Bederson, Ph. D., who has over 25 years of experience related to multimedia systems. *Bederson*, ¶¶6-22.

For example, the art had already described techniques for synchronizing different types of multimedia data including two or more separate data files. *Comps*, 1:4-5, 2:6-9; *Wan*, [0065]; *Ahn*, [0003]; *Kim*, [0002]; *Kristjansson*, 9:64-67; *Seong*, [0003]; *Wissner*, 4:10-19; *Abbott*, [0056]. Some developed a technique by which metadata are synchronized with associated multimedia contents. *Ahn*, [0003]; *Seong*, [0003]. Others developed a technique by which descriptions are synchronized with associated audio files and video files using an internal time graph constructed by an encoder. *Wan*, [0043-0045].

These techniques included temporal and non-temporal synchronization methods. Synchronization commands were used by microprocessors to control the skipping of content or delaying of reading content until multiple tracks were in sync. *Comps*, 1:41-41, 3:44-47, 4:19-36; *Wan*, [0049]; *Kim*, [0018]; *Thong*, Title, 1:62-2:13. Predefinable rules for assigning one type of data segments to another type of data segments was known. *Comps*, 4:3-17, Fig. 3; *Kristjansson*, 7:12-24; *Buchanan*, 11:59-67. Prior to the purported invention of the '794 patent, those in the art recognized the need for temporal and non-temporal synchronization methods, and already developed such methods. *Comps*, 1:26-41, 2:20-23, 2:48-51, 3:44-47, 4:19-36, Abstract.

SMIL (Synchronized Multimedia Integration Language) has been a W3C standard since 1998 when version 1.0 was defined. *See*

<https://www.w3.org/TR/SMIL1/>. Version 2.1 was defined by December 2005. *See* <https://www.w3.org/TR/2005/REC-SMIL2-20051213/>. The standard defines “an XML-based language that allows authors to write interactive multimedia presentations” including “temporal behaviour of a multimedia presentation” that can “represent timing and synchronization.” *See* Abstract. As shown in an example in section 8.5, the standard includes the ability to describe markers that indicate scene boundaries. The Timing and Synchronization Module located at <https://www.w3.org/TR/2005/REC-SMIL2-20051213/smil-timing.html> describes how SMIL solves “fundamental media synchronization problems and defined a powerful way of choreographing multimedia content.” *See* 10.2 Introduction. SMIL's timing description was known to describe how media elements are synchronized by playing them in sequence, in parallel, or without specified order – such that it does not require the use of timestamps. For example, SMIL could synchronize a video and audio element to play in parallel without using a timestamp. *See* Section 10.4.1 Attributes.

```
<par endsync="last">
  <video src="intro.mpg" begin= "5s" dur="30s" fill="freeze" />
  <audio src="intro.au" begin= "2s" dur="40s"/>
</par>
```

B. Summary of the Alleged Invention of the '794 Patent

The '794 patent discloses “a method or [] a device which enables content-related first and second data segments to be synchronized in a simple and standard-

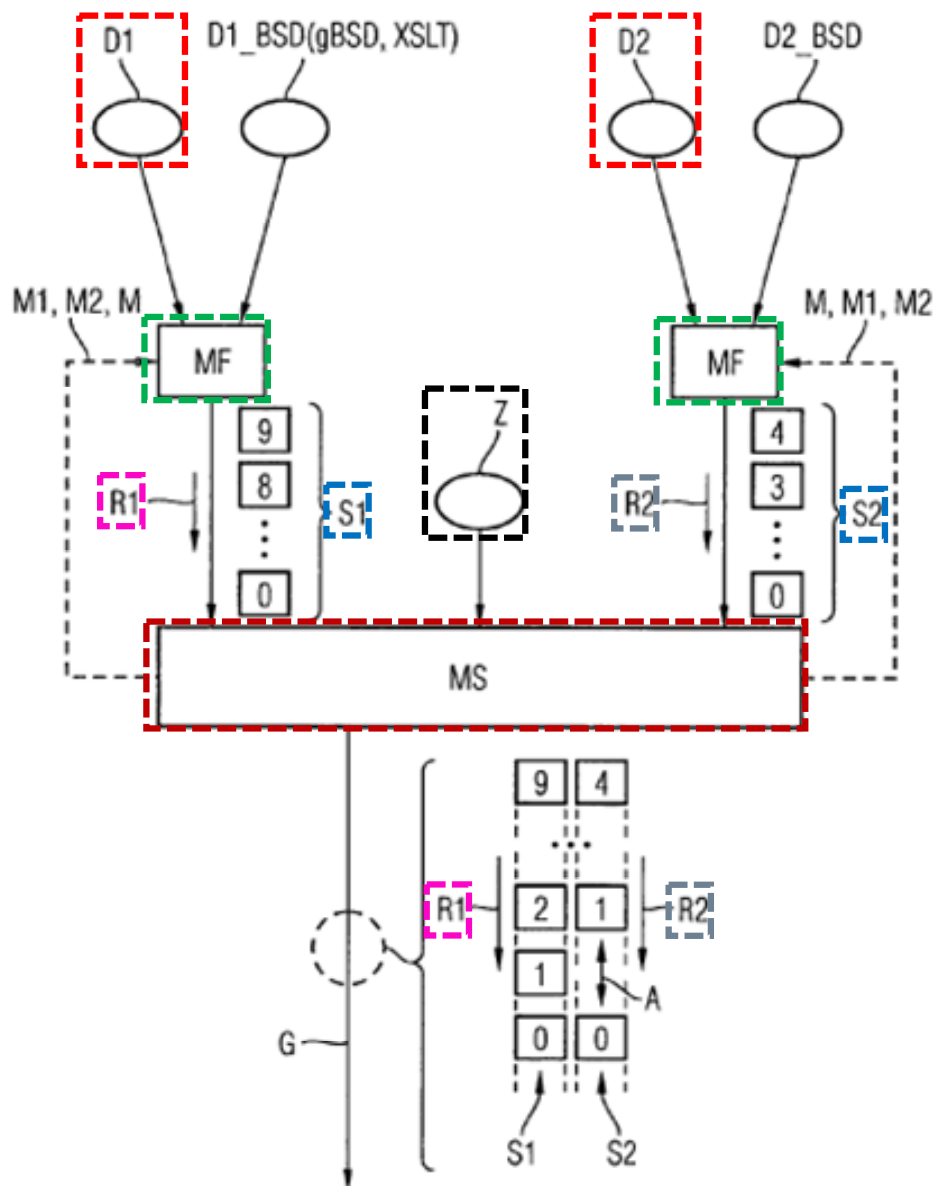
compliant manner.” ’794*Pat*, 2:24-27. According to the patent, the content-related first and second data segments are respectively output in sequence according to their chronological order based on a predeterminable assignment rule. *Id.*, 2:28-37; *see also id.*, Abstract. Every independent claim of the ’794 patent requires that each of content-related second data segments be output together with an associated one of the content-related first data segments based on an assignment rule for assigning each one of the content-related second data segments to one of the content-related first data segments. *Id.*, Claims. 1, 9, 22; *see also id.*, 2:28-37.

More specifically, the patent describes, referring to Fig. 1, that a video data stream and an audio data stream are synchronized using the method of the purported invention. *Id.*, 3:65-4:8. Content-related first and second data segments S1, S2 are obtained from a first data file D1 (*e.g.*, video data stream) and a second data file D2 (*e.g.*, audio data stream), respectively. *Id.*, 4:1-14. As shown in Fig. 1, the first data segments S1 are passed by a fragmentation module MF to a synchronization module MS in the same chronological sequence R1 in which they are to be output. *Id.*, 4:42-49. Similarly, the second data segments S2 are passed by the fragmentation module MF to the synchronization module MS in the same chronological sequence R2 in which they are to be output. *Id.*, 5:5-9. Subsequently, the first and second data segments S1, S2 are synchronized on the basis of a predefinable assignment rule Z. *Id.*, 5:10-13. The specification of the

'794 patent describes that this method is advantageous since the assignment is carried out without the use of timestamps. *Id.*, 2:36-43; *see also id.*, Claims 20, 21.

Figure 1 (reproduced below) from the patent illustrates above-discussed elements.

FIG 1



Id., Fig. 1 (annotated).

The patent describes that the assignment rule can be described “merely by specification of the number” such that a second data segment S2 is assigned precisely to a first data segment S1 and a further assignment is carried out following a number of sequentially succeeding first data segments S1. *Id.*, 2:47-54. The specification of the ’794 patent describes that this method is advantageous since the very low signaling overhead is required for signaling the number. *Id.*

C. The Prosecution History

The ’794 patent issued from U.S Patent Application No. 11/918,276 (“’276 Application”), filed October 11, 2007, which was a national stage application of PCT/EP2006/060808, filed March 16, 2006, which claims priority to a German Patent Application, DE 10 2005 016 866, filed April 12, 2005. *See* ’794 patent, field (21, 22, 30, 86); ’794*PatFH*, 445.

In a non-final Office Action dated March 7, 2012, claims 1-17 were rejected under 35 U.S.C. §103(a) as being unpatentable over EP 1494430 (“Shin”) in view of U.S. Patent No. 5,661,523 (“Yamane”). ’794*PatFH*, 280. Claims 1-4 and 7 were rejected under 35 U.S.C. §101. *Id.*, 278. In response to the rejections, the applicant amended independent claims 1 and 9 to recite that the assignment rule was for “assigning each second data segment to a first data segment” (*id.*, 262,

263), and argued that the cited art did not disclose this limitation (*id.*, 268–271).

The applicant added new claims 18-21. *Id.*, 264.

In a final Office Action dated June 29, 2012, claims 1-21 were rejected under 35 U.S.C. §103(a) as being unpatentable over U.S. Patent No. 5,598,352 (“Rosenau”) in view of Yamane. *Id.*, 226. Claims 1-4, 7, 16, 18, and 20 were rejected under 35 U.S.C. §101. *Id.*, 224.

On October 10, 2012, the applicant conducted an interview with the Examiner to discuss the rejections, in which a proposed amendment to claim 1 was presented. *Id.*, 209-215. The Examiner stated that both Rosenau and a newly identified prior art reference, U.S. Patent No. 7,099,848 (“Bratton”) each disclosed the proposed amendment to claim 1 that recited “wherein the assignment rule is formed in such a way that, for each second data segment, a first data segment is assigned by specification of a number, the number representing a position of the first data segment within a chronological sequence of the first data segments.” *Id.*, 212.

On November 29, 2012, the applicant filed a Request for Continued Examination (“RCE”) along with an amendment, different from the previously proposed amendment, in which independent claims 1 and 9 were amended to positively recite that the first and second data segments were “content-related.” *Id.*, 193-196. With respect to the prior art, the applicant argued that the cited art

did not disclose an “sequentially outputting the content-related first data segments and the content-related second 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,” as recited in amended claim 1. *Id.*, 203. The applicant added new independent claim 22. *Id.*, 196.

Subsequently, the Examiner issued another Office Action dated May 8, 2013, maintaining the §101 rejection and withdrawing the prior art rejection. *Id.*, 154–162. In allowing claims 1-22 over the prior art, the Examiner stated “[n]o reason for allowance is needed as the record is clear in light of applicant’s arguments and amendment filed on 11/29/2012[.]” *Id.*, 160.

On June 28, 2013, the applicant filed an amendment to independent claims 1, 9, and 22, *e.g.*, amending claim 1 to recite that the outputting step was performed “by a device for synchronizing content-related data” to overcome the §101 rejection. *Id.*, 142–149.

On August 1, 2013, the Examiner issued a Notice of Allowance. *Id.*, 30-41. In the Examiner’s statement of reason of allowance, the Examiner stated that “the closest prior art, [] Rosenau” disclosed “video data synchronized with the audio data” and another “closest prior art, [] Yamane” disclosed “frames are displaying in the chronological order” (*id.*, 37-40), but these disclosures are not equivalent to “sequentially outputting data segments on the basis of an assignment rule for

assigning [] each one of the content-related second data segment to one of the content-related first data segments” as recited in the allowed claims. *Id.*

However, the Examiner’s search did not reveal prior art including *Comps* and *Wan*, which teaches the claimed “sequentially outputting data segments on the basis of an assignment rule for assigning [] each one of the content-related second data segment to one of the content-related first data segments.”

D. Priority Date of the Challenged Claims

The ’794 patent whose PCT application (PCT/EP2006/060808) was filed on March 16, 2006 claims priority to a German Patent Application, DE 10 2005 016 866, filed April 12, 2005. *See* ’794 patent (Ex. 1001), field (22, 30, 86). Thus, the earliest possible priority date of any claim of the ’794 patent is April 12, 2005.

For purposes of this Petition only, Petitioner applies April 12, 2005 as the priority date for the challenged claims because it is unnecessary to determine specific priority dates of the challenged claims since the references relied upon for Grounds 1-4 in this Petition predate the earliest possible priority date (April 12, 2005). The grounds articulated herein (*i.e.*, Grounds 1-4) are presented without waiver or prejudice, and Petitioner hereby reserves the right to assert the actual priority dates associated with each of the challenged claims at any later time.

E. Level of Ordinary Skill in the Art

A person of ordinary skill in the art on the priority date (April 12, 2005) for the '794 patent ("POSITA") would have had a bachelor's degree in electrical or computer engineering, or a closely related scientific field such as computer science, and two years of work experience with multimedia systems.

Alternatively, any lack of experience could be remedied with additional education (e.g., a master's degree), and likewise, a lack of education can be remedied with additional work experience (e.g., 4-5 years). *Bederson*, ¶30.

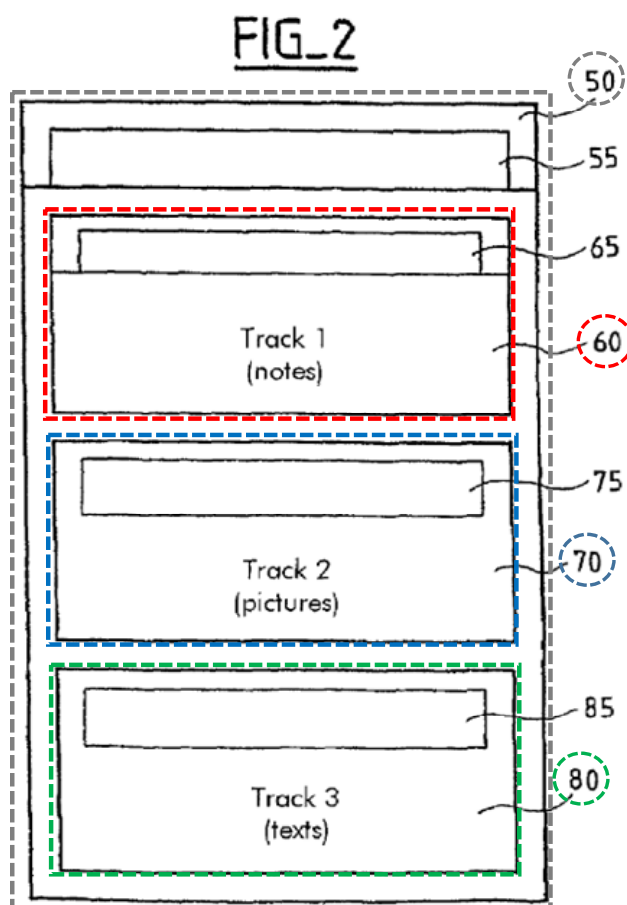
V. IDENTIFICATION OF PRIOR ART

Neither *Comps*, *Wan*, *Ahn*, nor *Kim* were disclosed or considered by the Patent Office during prosecution of the '794 patent.

A. Overview of *Comps*

Comps is directed to "a method of synchronizing different types of data in a multimedia file." *Comps*, 1:4-5; *see also id.*, Abstract. *Comps* provides a method of synchronizing multimedia data including "at least two separate data files (track1, track2) referred to as the first file, the second file, etc." *Id.*, 2:6-9. In an embodiment shown in Figure 2, *Comps* discloses that a multimedia file 50 includes three tracks 60, 70, 80. *Id.*, 2:54-55. Each track contains a different type of content such as e.g., the track 60 for a sequence of musical notes, the track 70 for a sequence of pictures (or video data), and the track 80 for a sequence of texts. *Id.*, 2:60-64, 3:8-19, 3:48-49, Fig. 2. The tracks 60, 70, 80 include synchronization

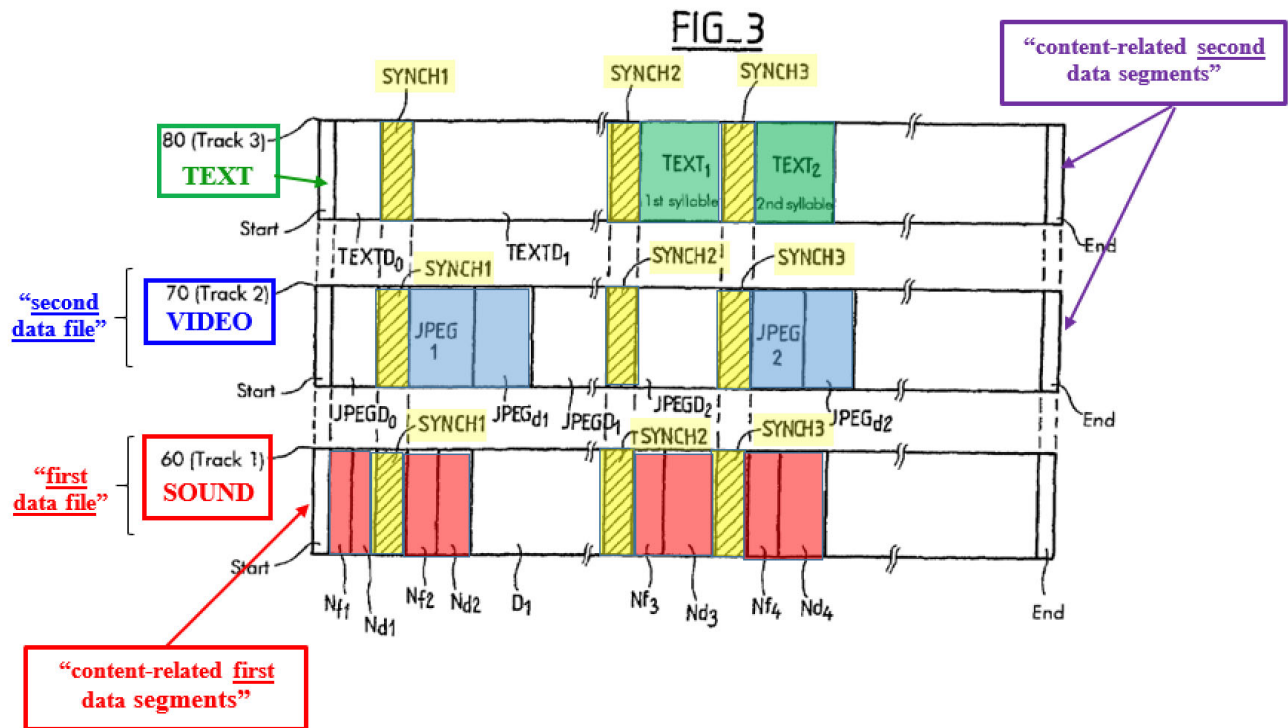
commands related to events included in the track (note, picture, text, etc.) that are executed sequentially by a microprocessor to, for example, play music and display a picture or a text. *Id.*, 2:47-50, 3:5-7; 3:48-49. Each track 60, 70, 80 has a respective header 65, 75, 85 that includes an indicator of the type of data contained in the track. *Id.*, 3:1-3. Figure 2 (reproduced below) from *Comps* illustrates the above-discussed structure of the multimedia file 50.



Comps, Fig. 2 (annotated).

As shown in Fig. 3 (reproduced below), each track 60, 70, 80 may include corresponding data segments, *e.g.*, sound segments as represented by fields

$Nf_1:Nd_1$, $Nf_2:Nd_2$, $Nf_3:Nd_3$, $Nf_4:Nd_4$ for the sound track 60, picture segments as represented by fields $JPEG_1:JPEG_{d1}$, $JPEG_2:JPEG_{d2}$ for the picture track 70, and text segments as represented by fields $TEXT_1$, $TEXT_2$ for the text track 80. *Id.*, 3:22-41. Nf_i and Nd_i represent the frequency of i -th note and its duration, respectively; $JPEG_i$ and $JPEG_{di}$ represents i -th JPEG image for a given time represented by $JPEG_{di}$; and $TEXT_i$ represents i -th text message. *Id.* The synchronization commands are represented by fields $SYNCH_i$ for i for 1 to n . *Id.*, 3:42-43.



Comps, Fig. 3 (annotated).

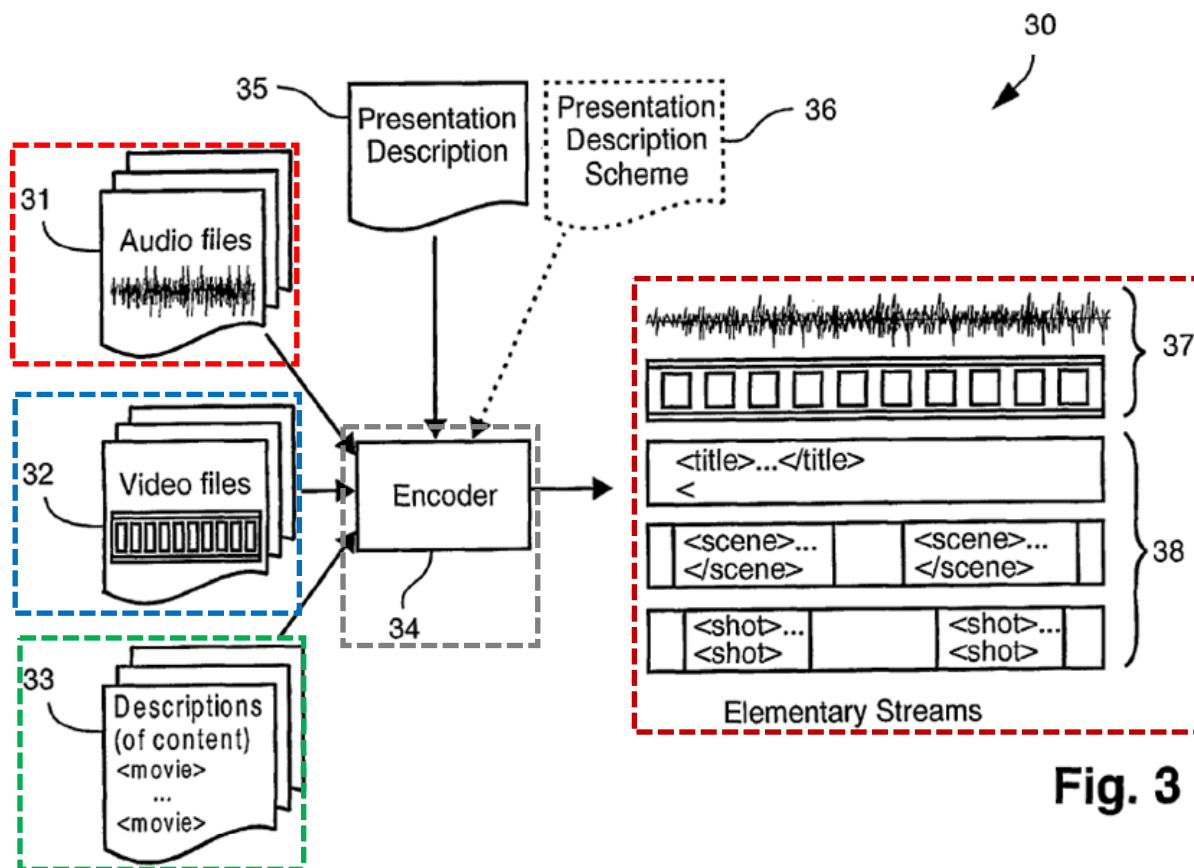
As shown in Figure 3, based on the "SYNCH₁" command, the second note ($Nf_2:Nd_2$) must be heard at the moment the first picture ($JPEG_1$) is displayed; based

on the “SYNCH₂” command, the third note (Nf₃:Nd₃) must be heard at the moment the first syllable (TEXT₁) is displayed; and based on the “SYNCH₃” command, the fourth note (Nf₄:Nd₄) must be heard at the moment the second picture (JPEG₂) and the second syllable (TEXT₂) are simultaneously displayed. *Id.*, 3:57-4:2.

B. Overview of *Wan*

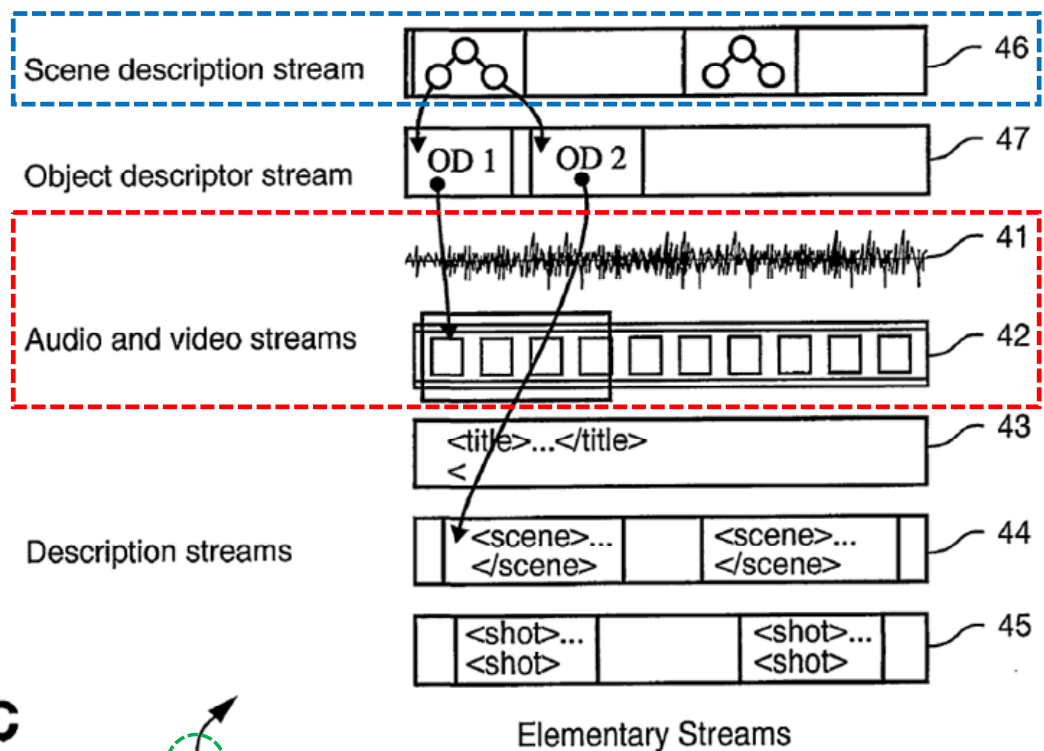
Wan was not disclosed to or considered by the Patent Office during prosecution of the '794 patent.

Wan is directed to “provid[ing] . . . streaming descriptions with AV (audio-visual) content.” *Wan*, [0010]. Wan discloses, that descriptions 33 are synchronized with associated audio files 31 and video files 32 using an internal time graph constructed by an encoder 34, as shown in Figure 3 below. *Id.*, [0043-0045]. Based on this time graph, encoder 34 schedules the delivery of the required components and then generates elementary data streams 37, 38 (*e.g.*, for the audio and video data) to be transmitted. *Id.*, [0045]. Encoder 34 also splits the descriptions 33 of the content into multiple data streams 38. *Id.*

**Fig. 3**

Wan, Fig. 3 (annotated).

A multimedia stream 40 includes an audio stream 41, a video stream 42, and a scene description stream 46, as shown in Figure 4C below. *Id.*, [0053]. Wan discloses that the scene description stream 46 can be used for transmitting scene graphs and updates to scene graphs. *Id.*, [0047]. When the description has some temporal relationship with the content (*e.g.*, a description of a particular scene in a movie that provides for multiple camera angles to be viewed), the temporally irregular relationship between description and content may be accommodated through a temporal object description structured into the streams. *Id.*, [0053-0054].

**Fig. 4C**

Wan, Fig. 4C (annotated).

C. Overview of *Ahn*

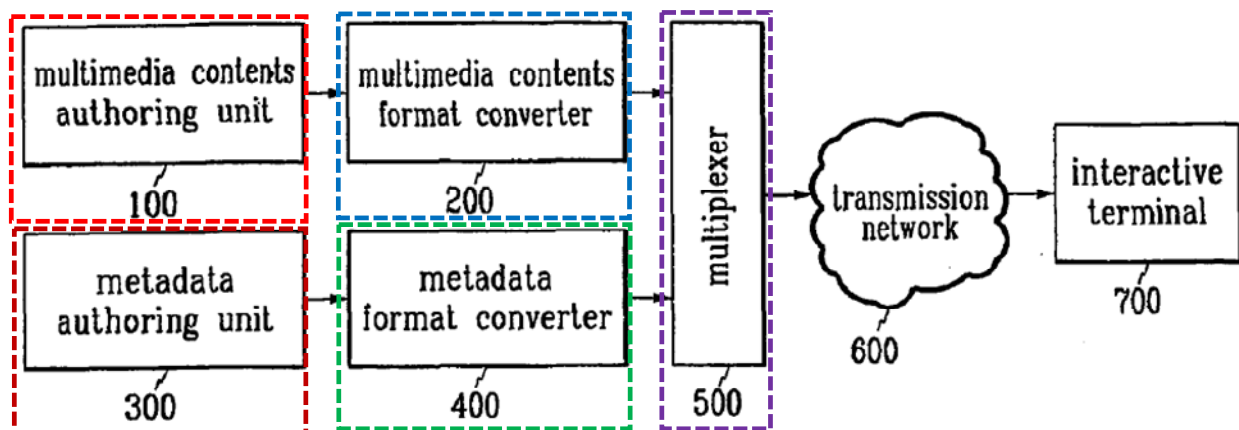
Ahn was not disclosed to or considered by the Patent Office during prosecution of the '794 patent.

Ahn is directed to a “[m]ethod and apparatus for delivery of metadata synchronized to multimedia contents.”³ *Wan*, Title. *Ahn* discloses, a metadata transmission system that includes a multimedia contents format converter 200 and

³ The specification of the '794 patent describes that “video or audio data, and/or metadata” are examples of media data. '794Pat, 3:4-8.

a metadata format converter 400, as shown in Figure 1 below. *Id.*, [0019]. The multimedia contents format converter 200 compresses the multimedia contents input from a multimedia contents authoring unit 100, converts them into transmission format data for synchronization and transmission, and outputs them to a multiplexer 500. *Id.*, [0021]. The metadata format converter 400 converts the metadata input from the multimedia contents authoring unit 100 into binary codes, converts them into a transmission format for synchronization and transmission, and outputs them to the multiplexer 500. *Id.*, [0025]. A metadata synchronization format converter 420 converts the XML-language metadata transmitted from a metadata authoring unit 300 into binary codes, and converts them into a synchronization format. *Id.*, [0030].

FIG. 1

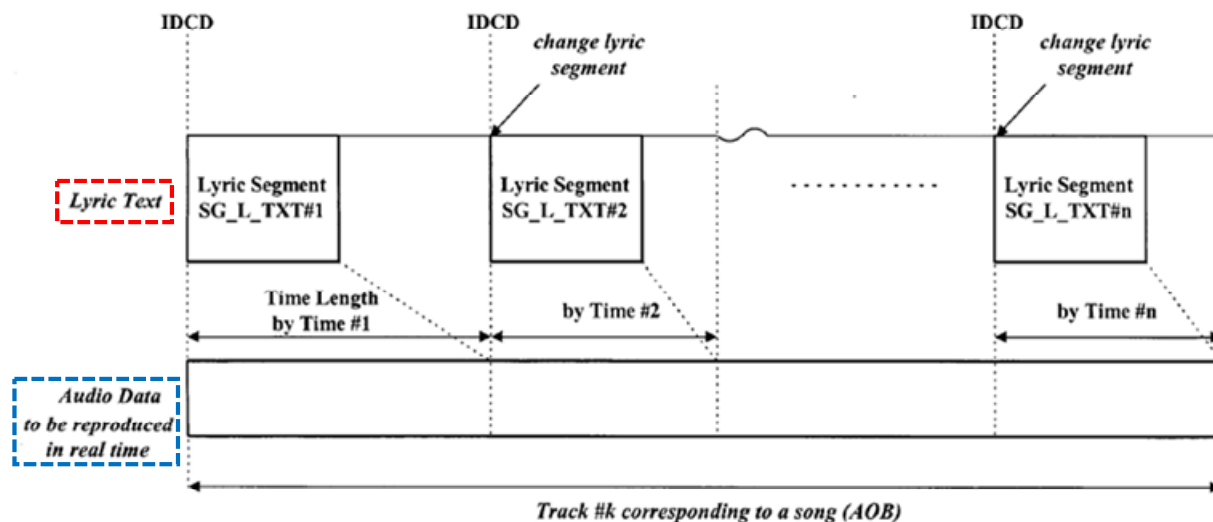


Ahn, Fig. 1 (annotated).

D. Overview of *Kim*

Kim was not disclosed to or considered by the Patent Office during prosecution of the '794 patent.

Kim is directed to a “a method of recording additional data such as lyric and user input data to be in synchronization with audio data on a rewritable recording medium, and of reproducing them synchronously therefrom.” *Kim*, [0002]. *Kim* discloses that lyric or user data related with a song recorded on a rewritable disk such as DVD-RW is segmentized into several units. *Id.*, [0030]. The segmentized lyric or user data may be recorded in a file separated from the management information file storing management information for controlling reproduction of all of recorded audio data. *Id.*, Claim 7. Figure 5 below illustrates continuous and synchronous display of a series of lyric segments together with reproduced audio data.

FIG. 5

Kim, Fig. 5 (annotated).

E. Other Evidence Regarding the State of the Art

The prior art in Exhibits 1008-1016 further reflects the state of the art, level of ordinary skill in the art, common knowledge in the art, and/or common sense in the art, and is therefore also relevant to the background of the invention and the invalidity analysis herein. *Bederson*, ¶49.

VI. CLAIM CONSTRUCTION

The Board construes claims “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).” 37 C.F.R. § 42.100(b). Under this standard, the words of a claim generally are given their “ordinary and customary meaning,” which is the meaning the term would have to a person of ordinary skill at the time of the invention, in the context of the

entire patent including the specification. *Phillips v. AWH Corp.*, 415 F.3d 1303, 1312–13 (Fed. Cir. 2005) (en banc).

For this IPR, Petitioner applies the plain and ordinary meaning of all claim terms and contends that no claim terms require specific construction to resolve the unpatentability issues presented herein.⁴ See, e.g., *Aurobindo Pharma USA, Inc. v. Andrx Corp.*, IPR2017-01648, Paper 34 at 11 (PTAB Dec. 28, 2018) (citing *Nidec Motor Corp. v. Zhongshan Borad Ocean Motor Co.*, 868 F.3d 1013, 1017 (Fed. Cir. 2017)).

In a related district court proceeding, Patent Owner and the opposing party proposed constructions as summarized in the table below. *Starz Entm't, LLC v. VL Collective IP, LLC*, Amended Joint Claim Construction Chart, pages 4, 8-10 (Dkt. 80), Case No. 1:21-cv-01448 (D. Del.) (“*Starz*”) (Ex. 1017). There, the parties

⁴ Petitioner does not, however, waive any argument in any litigation. The parallel Delaware district court case is in its infancy, and there have been no claim construction exchanges, infringement contentions, or claim construction briefing. Petitioner does not set forth here arguments regarding claim construction disputes not properly addressed in this forum, such as those related solely to non-infringement, indefiniteness, lack of written description, and inoperability. 35 U.S.C. §§101 and 112.

fully briefed the constructions of all disputed terms. *Starz Entm't, LLC v. VL*

Collective IP, LLC, Joint Claim Construction Brief filed by Plaintiffs, pages 1, 48-69 (Dkt. 78), Case No. 1:21-cv-01448 (D. Del.) (Ex. 1018).

Claim Term	Patent Owner's Proposed Construction	Opposing Party's Proposed Construction
“output” /“outputting” (Claims 1, 9)	“transmitted, stored together, or passed on to a processing unit” / “transmitting, storing together, or passing on to a processing unit”	Same as Patent Owner's Construction
Preambles (Claims 1, 9)	The preambles are construed to be limiting. In addition to the other limitations set forth in the preamble, the referenced first data file and second data file cannot be the same data file.	Same as Patent Owner's Construction
“assignment rule for assigning each one of the content-related second data segments to one of the content-related first data segments” / “assignment rule for assigning each one of the content-related second data segments to each one of the content-related first data segment” /	“assignment rule for assigning each one of the content-related second data segments to one of the content-related first data segments, wherein the assignment is not performed by using exact timing information for the data segments (e.g., by using data segment timestamp information)”	Indefinite

“assignment rule” / “the assignment rule is not based on a timestamp” (Collectively, the “assignment rule limitations”) (Claims 1, 3, 9, 16, 17, 20, 21)		
“content-related ... data segments” (Claims 1, 3, 7, 8, 9)	“data segments ordered in a file such that they will present the file’s contents in their intended presentation order when rendered sequentially”	“segments of content data that have a syntactical meaning within the respective data file”

A claim construction order issued in the *Starz* Litigation on January 10, 2023. The Court issued the following constructions for the ’794 patent. *Starz Entm’t, LLC v. VL Collective IP, LLC*, Joint Claim Construction Brief filed by Plaintiffs, (Dkt. 88), Case No. 1:21-cv-01448 (D. Del.) (Ex. 1019)

Claim Term	Court’s Construction
“output” / “outputting” (Claims 1, 9)	“transmitted, stored together, or passed on to a processing unit” / “transmitting, storing together, or passing on to a processing unit”
Preambles (Claims 1, 9)	The preambles are construed to be limiting. In addition to the other limitations set forth in the preamble, the referenced first data file and second

	data file cannot be the same data file.
“assignment rule for assigning each one of the content-related second data segments to one of the content-related first data segments” / “assignment rule for assigning each one of the content-related second data segments to each one of the content-related first data segment” / “assignment rule” / “the assignment rule is not based on a timestamp” (Collectively, the “assignment rule limitations”) (Claims 1, 3, 9, 16, 17, 20, 21)	No construction necessary.
“content-related ... data segments” (Claims 1, 3, 7, 8, 9)	“segments of content data that have a syntactical meaning within the respective data file”

In the prior IPR filed by Unified Patents, LLC (“Unified Patents”), Unified Patents did not offer specific construction for any claim term from the patent.

Unified Patents, LLC v. VL Collective IP, LLC, IPR2022-01086, Paper 2 at 8-9

(PTAB Jun. 7, 2022). Patent Owner however proposed constructions similar to the ones proposed in the district court proceeding, as summarized in the table below.

Unified Patents, LLC v. VL Collective IP, LLC, IPR2022-01086, Paper 7 at 16

(PTAB Jun. 7, 2022).

Claim Term	Patent Owner's Proposed Construction	Unified Patents' Proposed Construction
Preambles (Claims 1, 9 ⁵)	The preambles are construed to be limiting. The first data file and the second data file are distinct from each other.	Plain and ordinary meaning
"content-related ... data segments" (Claims 1, 9)	"data segments ordered in a file such that they will present the file's contents in their intended presentation order when rendered sequentially"	Plain and ordinary meaning
"output" /"outputting" (Claims 1, 9) / (Claim 1)	"transmitted, stored together, or passed on to a processing unit" / "transmitting, storing together, or passing on to a processing unit"	Plain and ordinary meaning

⁵ The proposed constructions apply for the identified claims and their dependent claims.

The asserted prior art references teach all of the elements of the challenged claims under any of the above-discussed constructions, as set forth *infra* in Section VII.

VII. GROUNDS OF UNPATENTABILITY

A. Ground 1: *Comps* Anticipates Claims 1-5, 9-13, 15-17, and 20-21

Comps discloses each limitation of claim 1, as explained below.

1. Claim 1

- a. 1[pre]: “A method for synchronizing content-related first data segments of a first data file and content-related second data segments of a second data file, the method comprising:”

To the extent the preamble is limiting, *Comps* discloses claim 1’s preamble. *Bederson* ¶¶72-78. For example, *Comps* discloses “a method of synchronizing data in a multimedia document (50) comprising at least two separate data files (track1, track2) referred to as the first file, the second file, etc.” as illustrated in Figure 2 (below). *Comps*, 2:6-9. *Comps* discloses “data of a first type, of a second type, etc. is stored in the *first file*, in the *second file*, etc., respectively[.]” *Id.*, 2:10-14 (emphasis added). Thus, track 1 60 in red is a “first data file” and track 2 70 in blue is a “second data file.”

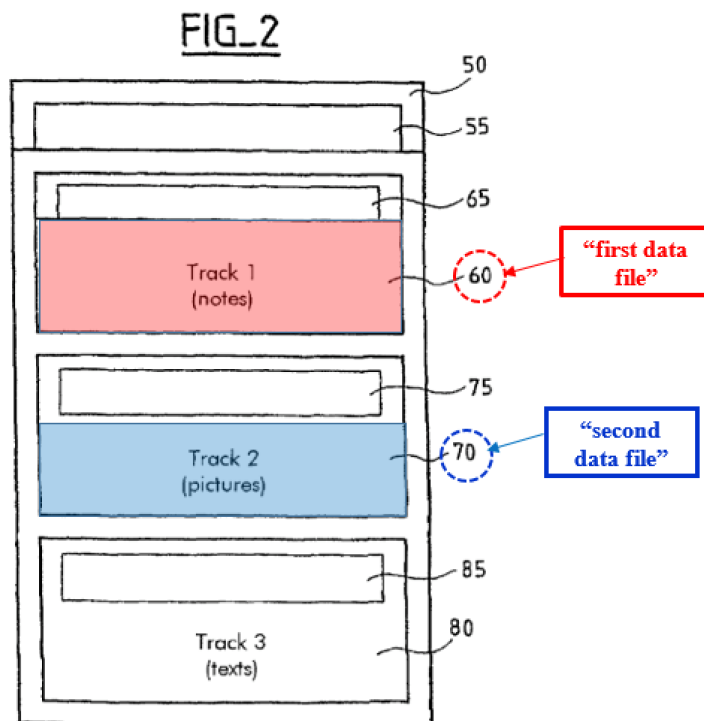
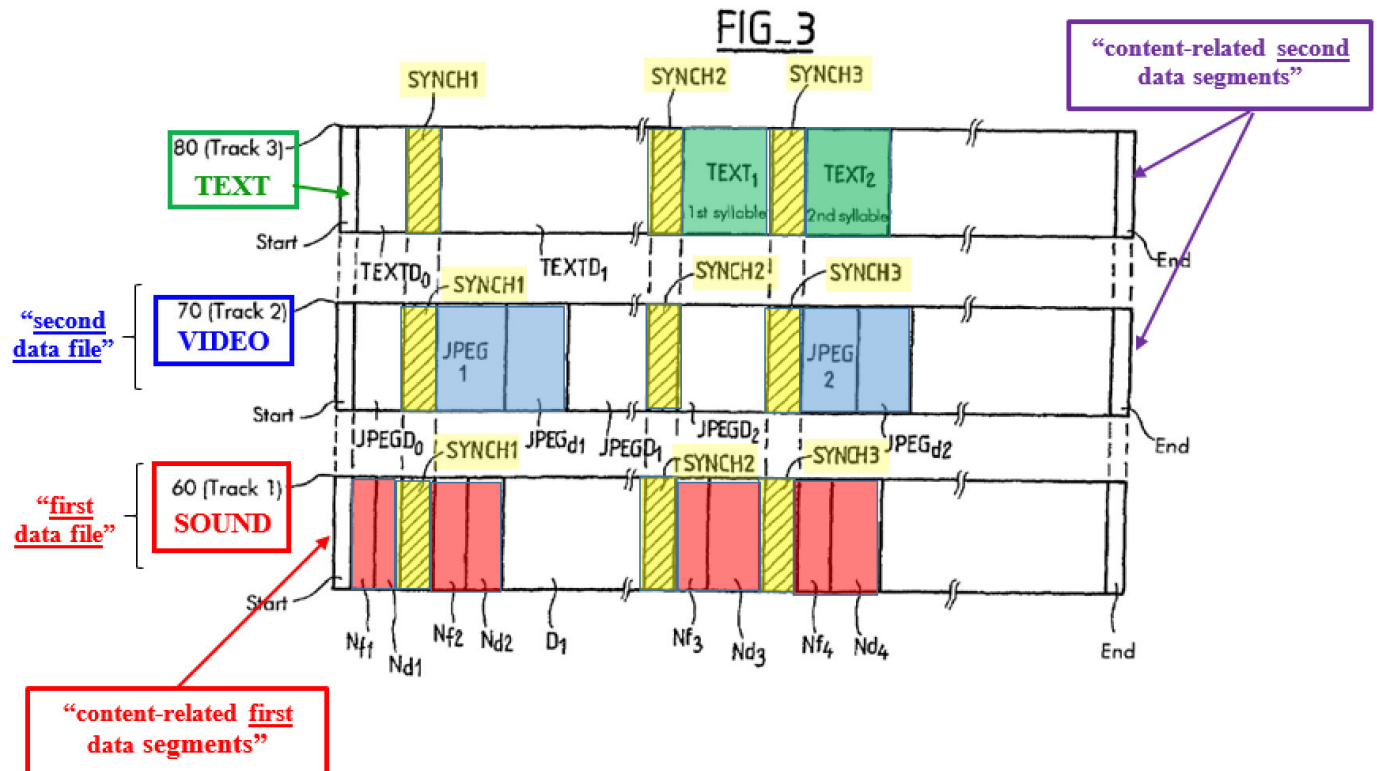


Figure 3 (reproduced below), illustrates each track may contain a different type of content such as *e.g.*, track 60 can be data relating to sound such as sequence of musical notes or a Musical Instrument Digital Interface (“MIDI”) format track for sound, track 70 can contain a sequence of pictures (or video data), and track 80 can contain sequences of texts. *Id.*, 2:54-64, 3:8-19, 3:48-49, Fig. 2. Each track includes corresponding data segments, *e.g.*, sound segments as represented by fields $Nf_1:Nd_1$, $Nf_2:Nd_2$, $Nf_3:Nd_3$, $Nf_4:Nd_4$ for sound track 60 annotated in red below, picture segments as represented by fields $JPEG_1:JPEG_{d1}$, $JPEG_2:JPEG_{d2}$ for picture track 70 annotated in blue below, and text segments as represented by fields $TEXT_1$, $TEXT_2$ for text track 80 annotated in green below. *Id.*, 3:22-41.

The sound segments in track 60 and picture segments in track 70 shown in Figure 3 of *Comps* correspond to “content-related first data segments” and “content-related second data segments” of claim 1, respectively. The sound segments in track 60 and the text segments in track 80 shown in *Comps*, Figure 3 could also correspond to “content-related first data segments” and “content-related second data segments” of claim 1, respectively. The sound segments in track 60 shown in *Comps*, Figure 3 could also correspond to “content-related first data segments” of claim 1; and the pictures and text segments in tracks 70, 80 shown *Comps*, Figure 3 could collectively correspond to “content-related second data segments” of claim 1.



Comps, Fig. 3 (annotated).

As illustrated in Figure 3, the respective data segments are synchronized based on the SYNCH commands present in each track such that the file's contents will be presented or outputted in their intended presentation order from start to end. Further, the content segments of the “first data file” (*e.g.*, the sound segments) and the contents segments of the “second data file” (*e.g.*, the picture segments) are different from each other. Thus, *Comps* satisfies element 1[pre] under any of the constructions discussed *supra* in Section VI.

b. 1[a][1]: “sequentially outputting, by a device for synchronizing content-related data, the content-related first data segments and the content-related second data segments according to their chronological sequence in such a way that”

Comps discloses this limitation. *Bederson* ¶¶79-83. With respect to “outputting,” the '794 patent discloses “the term ‘output’ is understood to mean that first and second data segments are, for example, *transmitted, stored together or passed on to a processing unit,*” which is consistent with the claim constructions discussed *supra* in Section VI. '794*Pat*, 2:43-46 (emphasis added).

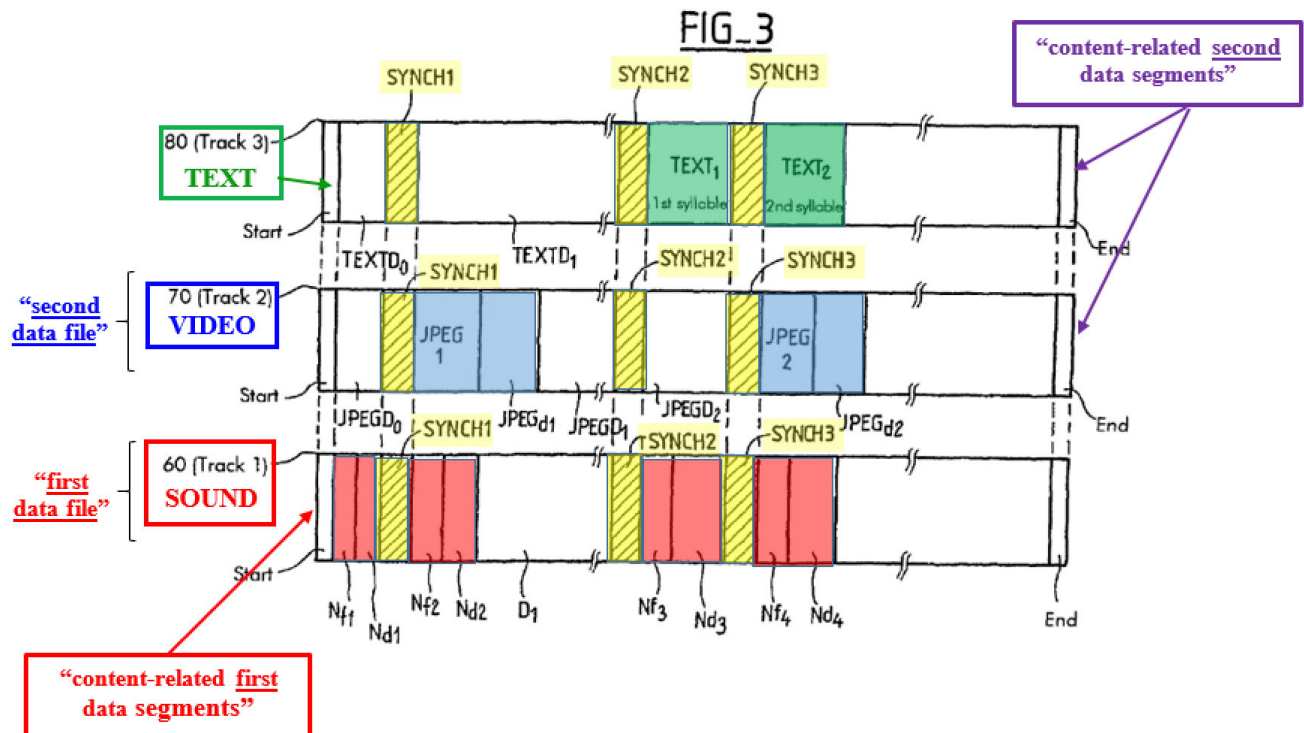
As discussed above in Section VII.A.1.a, the sound segments in track 60 shown in *Comps*, Figure 3 correspond to “content-related first data segments” of claim 1; and the pictures and text segments in tracks 70, 80 shown *Comps*, Figure 3 collectively correspond to “content-related second data segments” of claim 1.

Comps discloses “*a device for synchronizing data in a multimedia file containing at least one track in which [the] data is stored and at least one synchronization command in each track[.]*” *Comps*, 2:24-37 (emphasis added). Specifically, microprocessors (*i.e.*, a “device”) “sequentially” execute synchronization commands SYNCH1, SYNCH2, SYNCH3 to play (*i.e.*, “output”) sound segments in track 60 and to display (*i.e.*, “output”) picture segments and/or text segments stored (*i.e.*, “outputted”) in tracks 70 and 80 altogether from start to end as illustrated in Figure 3 (reproduced below), which is “according to their chronological sequence.” *Id.*, 3:5-7 (“Each track also contains data organized in the form of commands which are executed sequentially by the microprocessor (for example to display a picture or a text)”; *see also id.*, 3:20-21 (“Each track has a Start field for starting presentation to the user and an End field for ending presentation to the user[.]” 3:48-51, 4:3-17.

Comps “sequentially output[s] ... the content-related first data segments and the content-related second data segments according to their chronological sequence.” Figure 1 in the ’794 patent illustrates R1 and R2, which represent the “chronological sequence” of how the data segments are to be output, are synchronized so that content from R1 and R2 are sequentially output at the same time, so they are output together. ’794*Pat*, 4:46-5:4, Fig. 1. *Comps*, Figure 3 similarly discloses track 60 containing sound, track 70 containing a sequence of

pictures, and track 80 containing a sequence of texts are “sequentially outputted” together as they are “scanned by microprocessors and presented simultaneously to a user.” *Comps*, 2:60-67, Fig. 3. *Comps* further explains that in the example in Figure 3, the “second note (NF₂ and Nd₂) must be heard at the moment the first picture is displayed, corresponding to the field JPEG1 of track 2. Then, after a waiting time corresponding to the field D₁, the third note...Nf₃ and Nd₃, must be heard at the moment that the first syllable is displayed, corresponding to the field TEXT1 of track 1.” *Id.* 3:57-4:2; *see also* 3:48-51 (“musical notes included in the track 1 data must not be interrupted. Synchronizing the three tracks must not entail interrupting the music heard by the user.”).

Thus, *Comps* discloses this limitation.



Comps, Fig. 3 (annotated).

- c. 1[a][2]: “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.”

Comps discloses this limitation. *Bederson* ¶85-90. As discussed above in section VII.A.1.b, “each of the content-related second data segments is output together with an associated one of the content-related first data segments.” Specifically, microprocessors sequentially execute synchronization commands (*i.e.*, SYNCH1, SYNCH2, SYNCH3) to “output together” the picture segments and/or text segments stored in tracks 70 and 80 (the “content-related second data segments”) with the “associated” sound segments in track 60 (the “content-related first data segments”).

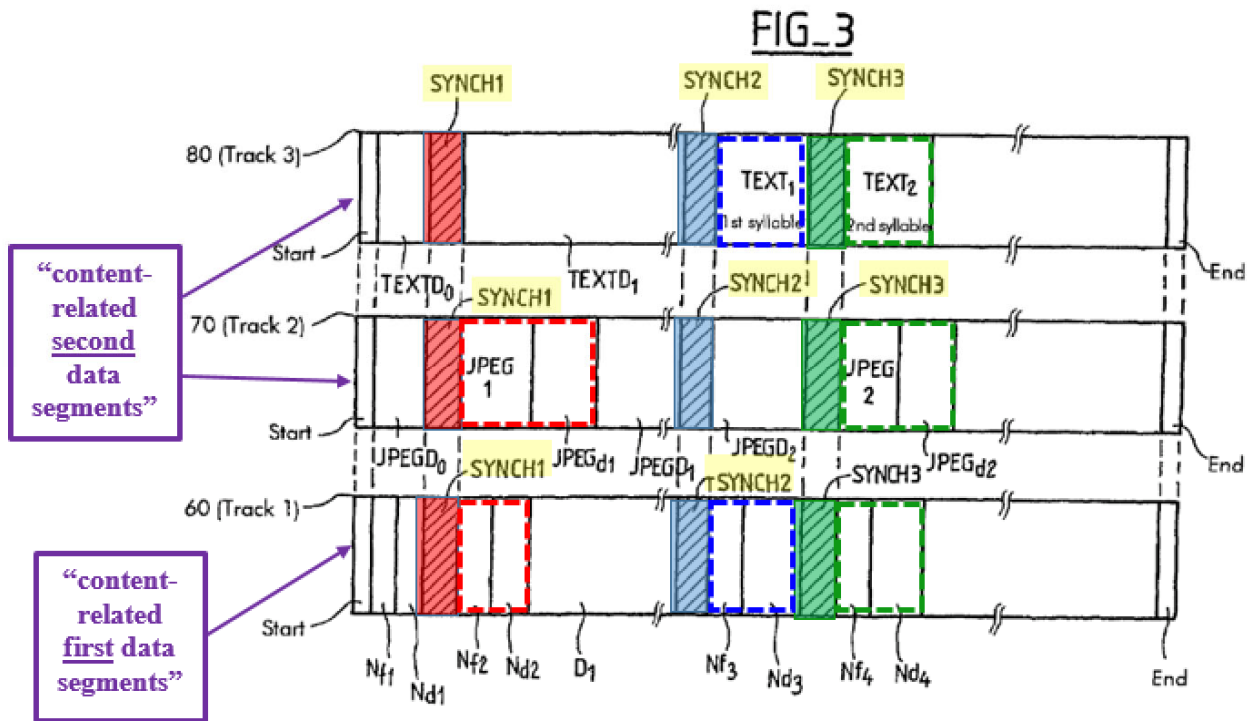
Comps discloses the “different tracks may be intended to be scanned by microprocessors and presented simultaneously to a user. The different microprocessors therefore scan the tracks at the same time.” *Id.*, 2:64-67. *Comps* further discloses “[e]ach track also contains data organized *in the form of [synchronization] commands which are executed sequentially* by the microprocessor” to synchronously perform sound segments, display picture segments, and/or text segments stored in the tracks 60, 70, 80. *Id.*, 3:5-7 (emphasis

added); *see also id.*, 3:20-21, 3:48-51, 4:3-17. The synchronization commands are shown as fields SYNCH1, SYNCH1, SYNCH3 in Figure 3 below. *Id.*, 4:3-17.

Thus, the “assignment rule” which “assign[s] each one of the content-related second data segments to one of the content-related first data segments” is the synchronization commands being executed by the microprocessors. Like the “assignment rule” described in the ’794 patent where it specifies which content from data segment s2 is synchronized with content from data segment s1 (*see, e.g.*, ’794*Pat.*, 6:4-27), tracks 60, 70, and 80 in *Comps* have inserted SYNCH commands that control which content from each track is synchronized with content from the other tracks, so that they can be “output together” or transmitted together simultaneously, as explained in section VII.A.1.b, which is incorporated herein by reference, and can be seen by the tracks vertical alignment illustrated in Figure 3 below.

Based on the execution of the synchronization commands by the microprocessors, each of the picture segments (*i.e.*, JPEG₁, JPEG₂) is “output together with an associated one of” the sound segments (*i.e.*, Nf₂:Nd₂, Nf₄:Nd₄). For example, JPEG₁ is “output together with” the associated sound segment Nf₂:Nd₂, and JPEG₂ is “output together with” the associated sound segment Nf₄:Nd₄. *Id.*, Fig. 3, 4:5-17. As another example, based on the execution of the synchronization commands by the microprocessors, each of the text segments (*i.e.*,

TEXT₁, TEXT₂) is “output together with an associated one of” the sound segments (*i.e.*, Nf₃:Nd₃, Nf₄:Nd₄). For example, TEXT₁ is “output together with” the associated sound segment Nf₃:Nd₃, and TEXT₂ is “output together with” the associated sound segment Nf₄:Nd₄. *Id.* As a result, with respect to TEXT₂ and JPEG₂, both are “output together with” the associated sound segment Nf₄:Nd₄. Thus, *Comps* discloses this limitation.



Comps, Fig. 3 (annotated).

Comps discloses “[t]he synchronization commands are not temporal commands, as in the prior art, but are instead dependent on a specific event.” *Id.*, 3:44-47 (emphasis added); *see also id.*, 2:20-23 (“The method is advantageously characterized in that the important event corresponds to a command to display a

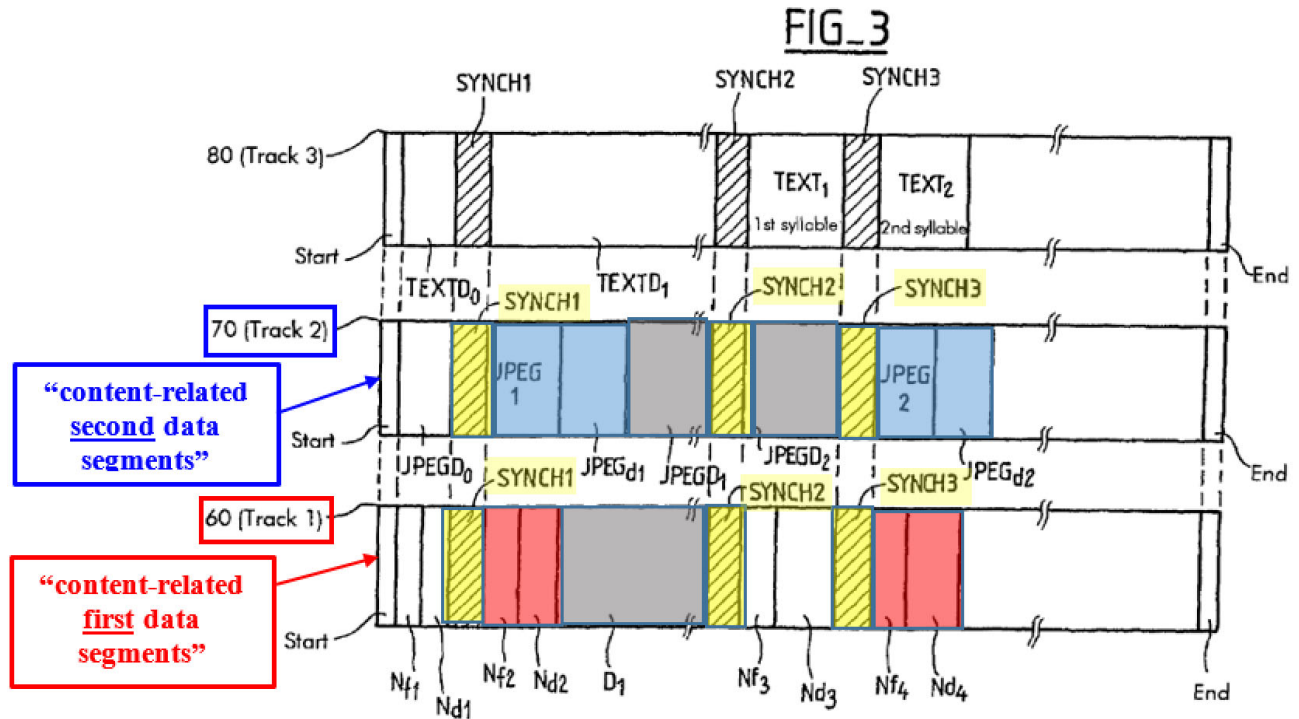
text, a command to display a picture, or a command to reproduce a sound.”) (emphasis added). Thus, the synchronization commands being executed by the microprocessors (*i.e.*, the assignment rule) of *Comps* would not be performed by using exact timing information for the data segments (*e.g.*, by using data segment timestamp information). Accordingly, *Comps* satisfies element 1[a][2] under any of the constructions discussed *supra* in Section VI. *Bederson* ¶89.

Moreover, the claimed “assignment rule” in claim 1 has a broad scope such that the “assignment rule” does not need to be maintained in a file separate from the first data file and the second data file. *See Comps*, Claims 18, 19 (dependent claims narrowing the scope of “assignment rule” recited in independent claims 1 and 9 to require the “assignment rule” be “maintained in a file separate from the first data file and the second data file”). Thus, the synchronization commands, which are located in Tracks 60, 70, and 80, and are executed by the microprocessors satisfy “the assignment rule” as recited in claim 1. *Bederson* ¶90.

2. Claim 2

- a. **“The method as claimed in claim 1, wherein the assignment rule is formed in such a way that each of the content-related second data segments are assigned to precisely one of the content-related first data segments and a further assignment is carried out after a number of sequentially succeeding content-related first data segments.”**

Comps discloses this limitation. *Bederson* ¶¶91-92. For example, as shown in Figure 3 below, the synchronization commands executed by the microprocessors (*i.e.*, “the assignment rule”) are “formed in such a way that each” of the picture segments (*i.e.* “content-related second data segments”) “are assigned to precisely one” of the sound segments (*i.e.* “content-related first data segments”). For example, JPEG₁:JPEG_{d1}, the blue picture segment shown below on the left, is assigned precisely to Nf₂:Nd₂, the red sound segments, on the left. *See Comps*, 3:58-64. D₁, JPEGD₁, and JPEG₂, in grey, represent waiting times before presenting subsequent notes and images. *Id.*, 3:25-26, 36-37. Similarly, JPEG₂:JPEG_{d2} is “assigned [] precisely to Nf₄:Nd₄,” both colored in blue. *Id.*, Fig. 3, 3:65-4:2. *Comps* also has “a further assignment [] carried out after a number of sequentially succeeding content-related first data segments.” For example, the assignment between JPEG₂:JPEG_{d2} and Nf₄:Nd₄ is performed after one “sequentially succeeding content-related first data segments” *i.e.*, Nf₃:Nd₃. Thus, *Comps* discloses claim 2.



Comps, Fig. 3 (annotated).

3. Claim 3

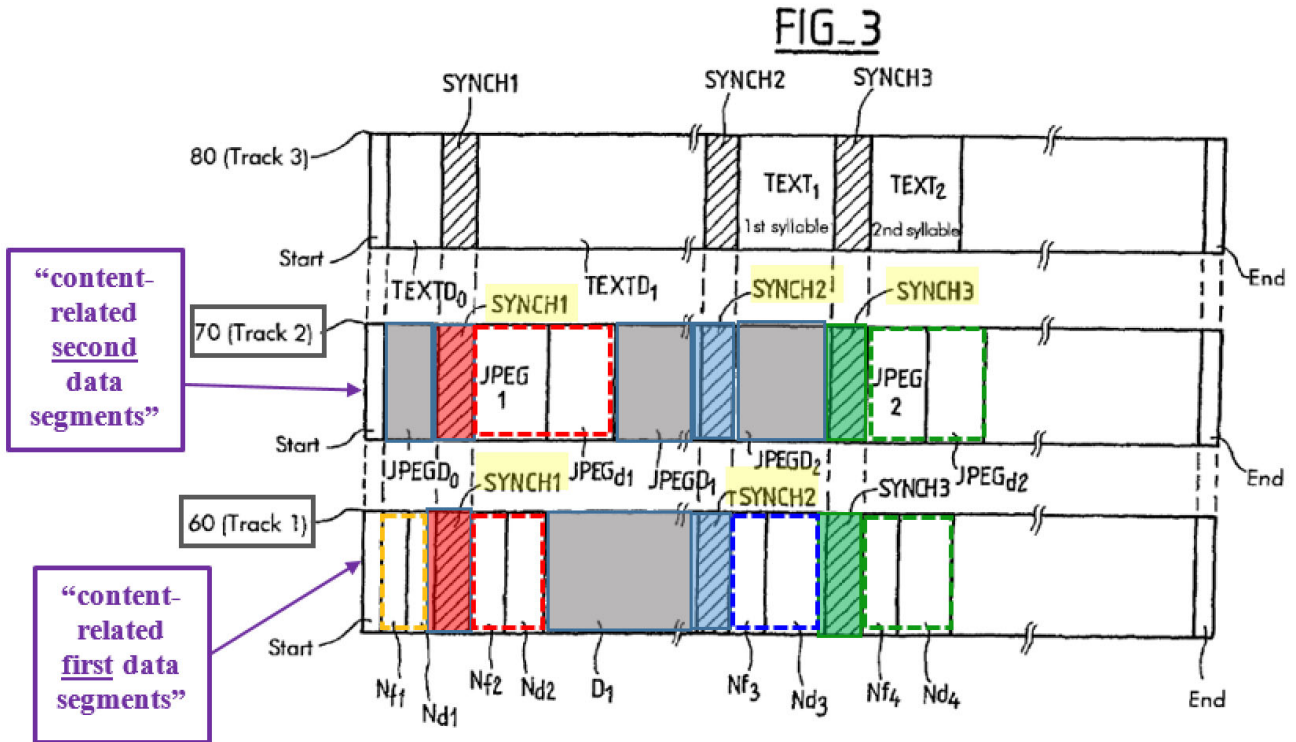
- a. **“The method as claimed in claim 1, wherein the assignment rule is formed in such a way that, for each of the content-related second data segments, the content-related first data segments are assigned by specification of a number, the number representing a position of the content-related first data segments within the order of content-related first data segments.”**

Comps discloses this limitation. *Bederson*, ¶¶93-95. For example, *Comps* discloses that “each synchronization command of each event to be executed simultaneously is *numbered identically from one file to another.*” *Comps*, Claim 6 (emphasis added). In track 2 (70), in Figure 3 below, two JPEG images are represented by the fields JPEG1 and JPEG2, while JPEG_{d1} and JPEG_{d2} represents

the duration in which must be presented to the user, respectively. *Id.*, 3:31-35.

JPEGD₀, JPEGD₁, and JPEGD₂ “represent waiting times before or between images.” *Id.*, 36-37. With respect to Track 1 (60), Nf₁ “represents the frequency of a first note, and Nd₁ represents its duration.” *Id.*, 3:22-24. The fields Nf₂ and Nd₂ define a second note, and D₁ “represents a waiting time before presenting the subsequent notes of the track.” *Id.*, 3:24-26; 4:3:18.

Using the numbered synchronization commands, *i.e.*, SYNCH1, SYNCH3, each of the picture segments JPEG₁:JPEG_{d1}, JPEG₂:JPEG_{d2} is assigned to an associated one of the sound segments, *i.e.*, Nf₂:Nd₂, Nf₄:Nd₄, respectively. *Id.*, Fig. 3. 3:57-4:18. The number (*i.e.*, 1, 2, 3) of the synchronization commands, *i.e.*, SYNCH1, SYNCH2, SYNCH3 that are executed by the microprocessors (*i.e.*, “the assignment rule”, “represent[s] the position of” the sound segments (*i.e.*, “content-related first data segments”) “within the order of” the sound segments, Nf₁:Nd₁, Nf₂:Nd₂, Nf₃:Nd₃, Nf₄:Nd₄. *Id.*, 3:57-4:2; Fig. 3. For example, SYNCH1 is positioned between the first and second sound segments Nf₁:Nd₁ and Nf₂:Nd₂; SYNCH2 is positioned between the second and third sound segments Nf₂:Nd₂ and Nf₃:Nd₃; and SYNCH3 is positioned between the third and fourth sound segments Nf₃:Nd₃ and Nf₄:Nd₄. *Id.*, 4:3-18; Fig. 3. This relationship is illustrated in *Comps*, Figure 3 below. Thus, *Comps* discloses claim 3.



Comps, Fig. 3 (annotated).

4. Claim 4

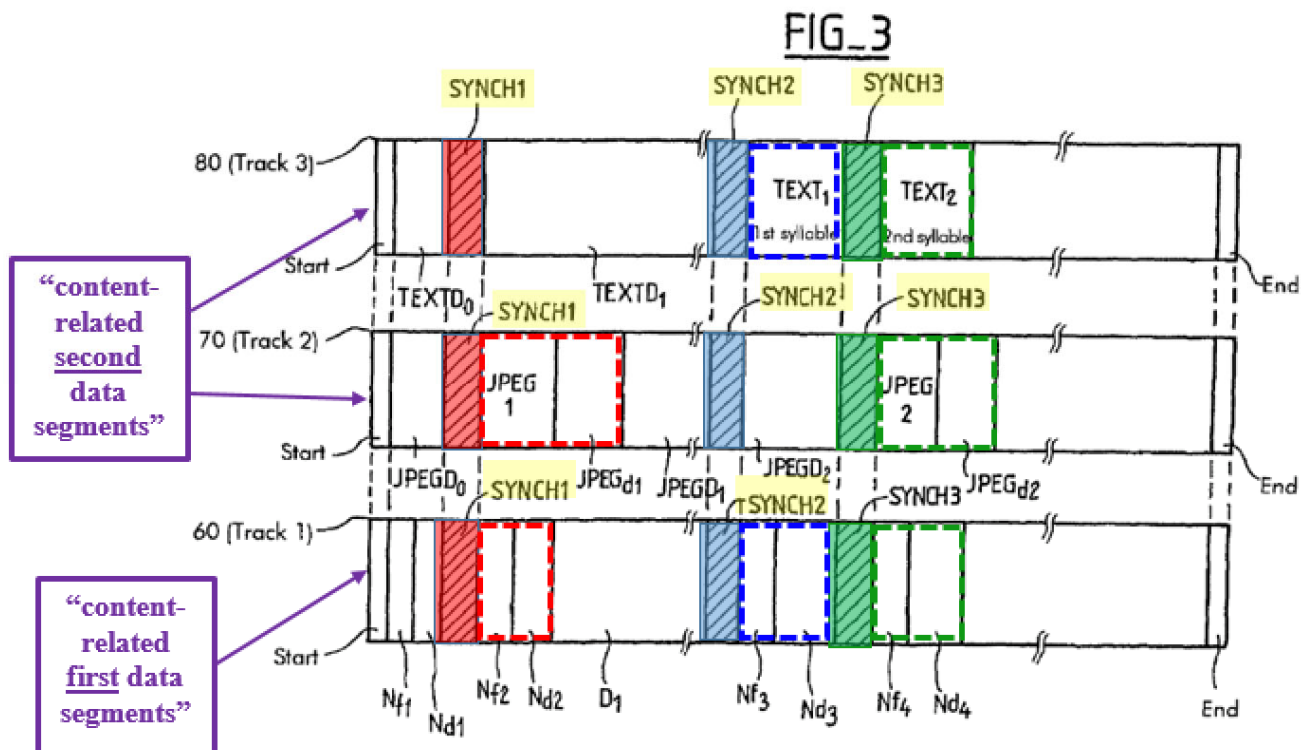
- a. 4[a]: “The method as claimed in claim 1, wherein the second content-related data segments belong to a plurality of second data files, and the content-related first data segments and the content-related second data segments are synchronized on the basis of a combined assignment rule.”

Comps discloses this limitation. *Bederson*, ¶¶96-99. The ’794 patent discloses “more than one single second data file D2 can be synchronized with the first data file D1. For example, there are two second data files D21, D22. For this purpose a combined predefinable assignment rule ZK is formed.” ’794*Pat*, 7:5-9.

As discussed in section VII.A.1.a, which is incorporated by reference herein, the sound segments in the track 60 shown in Figure 3 of *Comps* would correspond to “content-related first data segments” of claim 1, and the pictures and text segments in tracks 70, 80 would collectively correspond to “content-related second data segments” of claim 1. Further, *Comps* discloses “at least two separate data files (track1, track2) [are] referred to as the first file, the second file, etc.” *Id.*, 2:6-9. *Comps* discloses “data of a first type, of a second type, etc. is stored in the first file, in the second file, etc., respectively[,]” so each track, including track 70 and 80 are stored in at least two separate data files, which is a “plurality of second data files.” *Id.*, 2:10-14.

As illustrated in Figure 3 below, *Comps* discloses that the sound segments in track 60, “the content-related first data segments” and the pictures and text segments in the tracks 70, 80, “the content-related second data segments” are synchronized on the basis of “a combined assignment rule.” The combined synchronization commands shown as SYNCH1, SYNCH2, SYNCH3 in Figure 3 that are executed sequentially by microprocessors are a “combined assignment rule,” so that the “musical notes included in the track 1 data must not be interrupted. Synchronizing the three tracks must not entail interrupting the music heard by the user.” *Id.*, 3:49-52. Accordingly, the master microprocessor for the track 1 sound data “forces the other microprocessors in charge of the other tracks,

referred to as slaves, to synchronize with it.” *Id.*, 3:53-54. For example, “the fourth note, corresponding to the fourth fields NF_4 and ND_4 , must be heard at the moment at which are simultaneously displayed the second picture, corresponding to the field JPEG2 in track 2, and the second syllable, corresponding to the field TEXT2”) as shown in green below. For these reasons, *Comps* discloses claim 4.



Comps, Fig. 3 (annotated).

5. Claim 5

- a. **“The method as claimed in claim 1, wherein media data are represented by at least one of the first data file and the second data file.”**

Comps discloses this limitation. *Bederson*, ¶100. The ’794 patent discloses “media data [are] video or audio data, and/or metadata[.]” ’794Pat, 3:4-8. *Comps*

discloses “Track 60 or track 1 contains only *MIDI sound data* . . . Track 70 or track 2 contains only data corresponding to sequences of *JPEG images*. This data could equally be *video data* . . . Track 80 or track 3 contains only data corresponding to *text messages*.” *Comps*, 3:10-19 (emphasis added). *Comp* discloses “at least two separate data files (track1, track2) [are] referred to as the first file, the second file, etc.” *Id.*, 2:6-9; *see also* Fig. 2. *Comps* also discloses “data of a first type, of a second type, etc. is stored in the first file, in the second file, etc., respectively[.]” *Id.*, 2:10-14. Thus, *Comps* discloses sound data and the picture (or video) data, which are “media data,” are stored in “first data file” and the “second data file,” respectively. Accordingly, *Comps* discloses claim 5.

6. Claim 9

a. 9[pre]: “A device for synchronizing content-related first data segments of a first data file and content-related second data segments of a second data file, comprising:”

This limitation is substantively identical to that in claim 9[pre].

Accordingly, *Comps* discloses this limitation for the same reasons discussed in section VII.A.1.a. *Bederson*, ¶¶101-102. *Bederson*, ¶¶. Regarding “[a] device,” *Comps* discloses “*a device for synchronizing data* in a multimedia file containing at least one track in which [the] data is stored and at least one synchronization command in each track[.]” *Comps*, 2:24-31 (emphasis added). Specifically, the disclosed microprocessor in *Comps* is a “device for synchronizing” because it

“sequentially” executes synchronization commands SYNCH1, SYNCH2, SYNCH3 to play the sound segments and to display the picture segments and/or text segments stored in tracks 60, 70, 80, respectively, as illustrated in Figure 3.

Id., 3:5-7; *see also id.*, 3:48-51, 4:3-17.

- a. **9[a][1]: “a synchronization device configured to output each of the content-related first data segments and the content-related second data segments, sequentially, according to their chronological sequence,”**

This limitation is substantively identical to that in claim 9[a][1].

Accordingly, *Comps* discloses this limitation for the same reasons discussed in section VII.A.1.b. *Bederson*, ¶¶103-104.

- b. **9[a][2]: “each of the content-related second data segments being output together with an associated one of the content-related first data segments based upon of an assignment rule for assigning each one of the content-related second data segments to each one of the content-related first data segment.”**

This limitation is substantively identical to that in claim 9[a][2].

Accordingly, *Comps* discloses this limitation for the same reasons discussed in section VII.A.1.c. *Bederson*, ¶¶105-106.

7. Claim 10

- a. **“The method as claimed in claim 2, wherein the second content-related data segments belong to a plurality of second data files, and the content-related first data segments of the first data file and the content-related second data segments are synchronized on the basis of a combined assignment rule.”**

This limitation is substantively identical to that in claims 2 and 4.

Accordingly, *Comps* discloses this limitation for the same reasons discussed in sections VII.A.2 and VII.A.4. *Bederson*, ¶¶107-108.

8. Claim 11

- a. **“The method as claimed in claim 3, wherein the second content-related data segments belong to a plurality of second data files, and the content-related first data segments of the first data file and content-related second data segments are synchronized on the basis of a combined assignment rule.”**

This limitation is substantively identical to that in claims 3 and 4.

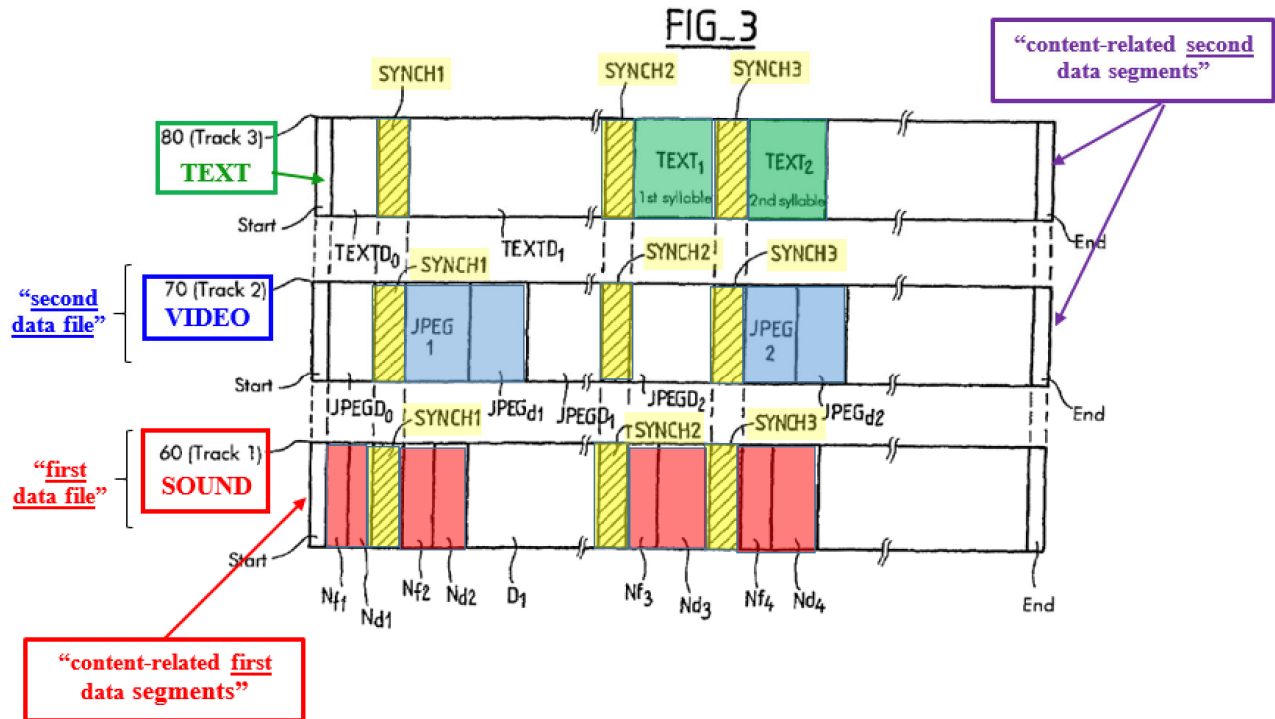
Accordingly, *Comps* discloses this limitation for the same reasons discussed in sections VII.A.3 and VII.A.4. *Bederson*, ¶¶109-110.

9. Claim 12

- a. **“The method as claimed in claim 5, wherein the media data include at least one of video and audio data.”**

Comps discloses this limitation. *Bederson*, ¶111. For example, as illustrated in Figure 3 below, *Comps* discloses, “Track 60 or track 1 contains only *MIDI sound data* . . . Track 70 or track 2 contains only data corresponding to sequences of *JPEG images*. This data could equally be *video data*.” *Comps*, 3:10-17 (emphasis added); *see also id.*, 3:48-49 (“In the FIG. 3 example, *musical notes* included in the track 1 data must not be interrupted.”) (emphasis added); Fig. 3.

Thus, the sound data in track 60 is “audio data,” and the sequences of JPEG images in track 70 is “video” data.



Comps, Fig. 3 (annotated).

10. Claim 13

- a. **“The method as claimed in claim 1, wherein at least one of media data and metadata are represented by at least one of the first data file and the second data file.”**

This limitation is substantively identical to that in claim 5.

Accordingly, *Comps* discloses this limitation for the same reasons discussed in section VII.A.5. *Bederson*, ¶¶112-113.

11. Claim 15

- a. **15[a]: “The method as claimed in claim 13, wherein the media data include at least one of video and audio data.”**

This limitation is substantively identical to that in claims 12 and 13.

Accordingly, *Comps* discloses this limitation for the same reasons discussed in sections VII.A.9 and VII.A.10. *Bederson*, ¶¶114-115.

12. Claim 16

a. “The method as claimed in claim 1, wherein the assignment rule is predefinable.”

Comps discloses this limitation. *Bederson*, ¶¶116-121.

The '794 patent discloses:

In an alternative embodiment, the *predefinable assignment rule* is formed in such a way that for each second data segment a first data segment is assigned by specification of a number, the number representing a position of the first data segment within the chronological sequence of the first data segments. By this, the assignment of first and second data segments is achieved in a particularly flexible manner. In this embodiment a plurality of second data segments can be assigned to a first data segment.

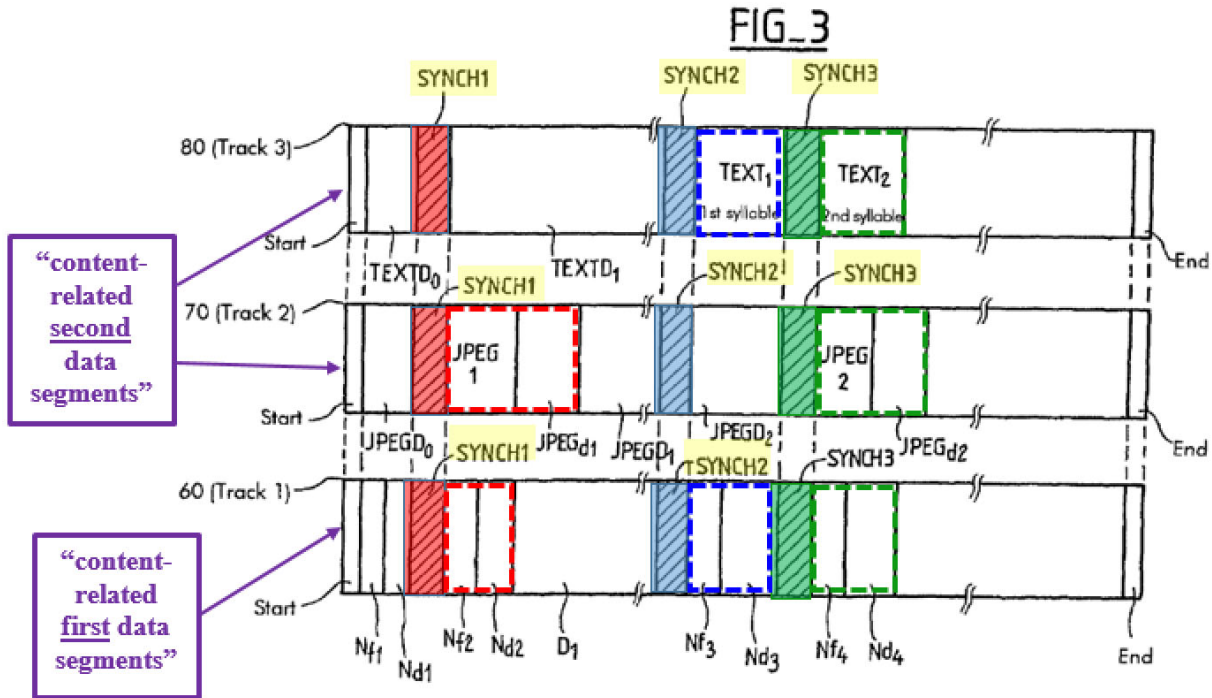
'794Pat, 2:55-63 (emphasis added); see also *id.*, 2:47-54; 5:35-6:42.

As discussed in section VII.A.1.c, which is incorporated by reference herein, synchronization commands SYNCH1, SYNCH1, SYNCH3 are executed sequentially by the microprocessors of *Comps* correspond to the “assignment rule” recited in claim 1. *Comps*, 4:3-17; Fig. 3. *Comps* discloses “*at least one synchronization command is inserted in each file, characterized in that said synchronization command is inserted before each event-related command*”

characterizing an important event.” Id., Abstract (emphasis added); *see also id.*, 3:5-7 (“*Each track* also contains data organized in the form of [*synchronization*] *commands* which are executed sequentially by the microprocessor (for example to display a picture or a text.”). Thus, the synchronization commands SYNCH1, SYNCH2, SYNCH3 executed by the microprocessors are an “assignment rule,” which is “predefinable” because the synchronization commands are stored in each track 60, 70, 80 until the microprocessor sequentially executes the commands to play the sound segments and to display the picture segments and/or text segments stored in the tracks 60, 70, 80, as illustrated in Figure 3 below. *Id.*, 3:5-7; 3:48-51, 4:3-17.

In other words, as a result of the synchronization commands, for each second data segment, a first data segment is assigned by specification of a number, the number representing a position of the first data segment within the chronological sequence of the first data segments. For example, in Figure 3, second data segment JPEG1 in track 70 is assigned to the second note in audio track 60 Nf₂:Nd₂ (which is the first data segment), and JPEG2 in track 70 is assigned to the fourth note in audio track 60, Nf₄:Nd₄. Accordingly, the synchronization commands that are in each of tracks 60, 70, and 80 are an “assignment rule” that is “predefinable” because the synchronization commands assign the second data segments to the first data segments by specification of a

number that represents the position of the first data segment within the chronological sequence of the first data segments.



Comps, Fig. 3 (annotated).

13. Claim 17

- a. "The device as claimed in claim 9, wherein the assignment rule is predefinable."

This limitation is substantively identical to that in claim 16. Accordingly, *Comps* discloses this limitation for the same reasons discussed in section VII.A.12. *Bederson*, ¶¶122-123.

14. Claim 20

- a. "The method of claim 1, wherein the assignment rule is not based on a timestamp."

Comps discloses this limitation. *Bederson*, ¶¶124-126. As discussed in section VII.A.1.c, which is incorporated by reference herein, the synchronization commands SYNCH1, SYNCH1, SYNCH3, executed by the microprocessors shown in *Comps*, Figure 3 correspond to the claimed “assignment rule” of claim 1. *Comps*, 4:3-17. *Comps* discloses “[t]he synchronization commands are *not temporal commands*, as in the prior art, but are instead *dependent on a specific event*. Thus, the fields SYNCH_i are not present in the tracks at regular time intervals.” *Id.* 3:10-17 (emphasis added); *see also id.*, 2:20-23 (“The method is advantageously characterized in that *the important event corresponds to a command* to display a text, a command to display a picture, or a command to reproduce a sound.”) (emphasis added). Accordingly, the synchronization commands SYNCH1, SYNCH2, SYNCH3 that are executed by the microprocessors disclosed in *Comps* are “not based on a timestamp.”

15. Claim 21

a. “The device of claim 9, wherein the assignment rule is not based on a timestamp.”

This limitation is substantively identical to that in claim 20.

Accordingly, *Comps* discloses this limitation for the same reasons discussed in section VII.A.14. *Bederson*, ¶¶127-128.

B. Ground 2: *Comps* and *Wan* Render Obvious Claims 6-8, 22

Comps in combination with *Wan* renders obvious claims 6-8, 22. Ground 2 is not duplicative of Ground 1, 3, and 4 because it is the only Ground based on *Comps* and *Wan*.

1. Claim 6⁶

- a. **“The method as claimed in claim 1, wherein at least one of the content-related first data segments and content-related second data segments are generated on the basis of at least one of the generic bit stream syntax description and the extensible stylesheet language transformation.”**

Comps in view of *Wan* disclose this limitation. *Bederson*, ¶¶130-132. As discussed in section VII.A.1, which is incorporated by reference herein, *Comps* discloses all of the limitations in claim 6, but does not disclose that the “the content-related first data segments” or “the content-related second data segments” are “generated on the basis of at least one of the generic bit stream syntax description and the extensible stylesheet language transformation.”

⁶ To the extent that this claim is not indefinite due to lack of antecedent basis of “the generic bit stream syntax description and the extensible stylesheet language transformation,” *Comps* in combination with *Wan* disclose this limitation.

Petitioner reserves all rights to raise §112 arguments in any litigation involving any claim terms of the '794 patent.

It was well-known to a POSITA at the time of the '794 patent that content-related data segments are generated using an extensible stylesheet language transformation. *Bederson*, ¶131. *Wan* describes that “the composer application 54 uses an *XSLT-based presentation template 60* to extract the required description fragments from a movie description 62 to generate a SMIL-like presentation description 64 (or presentation script). The <par> tag of SMIL specifies the start time and duration of a set of media objects that are to be presented in parallel.” *Wan*, [0059] (emphasis added); *see also id.*, [0057] (“An existing language such as *XSL Transformations (XSLT)* may be used for specifying the templates.”) (emphasis added).

Wan describes the advantages of an XML-based metadata stream with a separate content stream, and its efficiencies including how it can work well with a “low bandwidth communication link.” In this context, XSLT can be used to support the creation of metadata templates that are separate from content. *Wan*, [0003]-[0004], [0038]-[0039]. A POSITA would have thus been motivated to use XSLT in the generation of separate content streams such as “the content-related first data segments and content-related second data segments.” *Bederson*, ¶132.

Comps in view of *Wan* renders claim 6 obvious.

2. Claim 7

- a. **“The method as claimed in claim 1, further comprising: determining, based upon a content-related marker,**

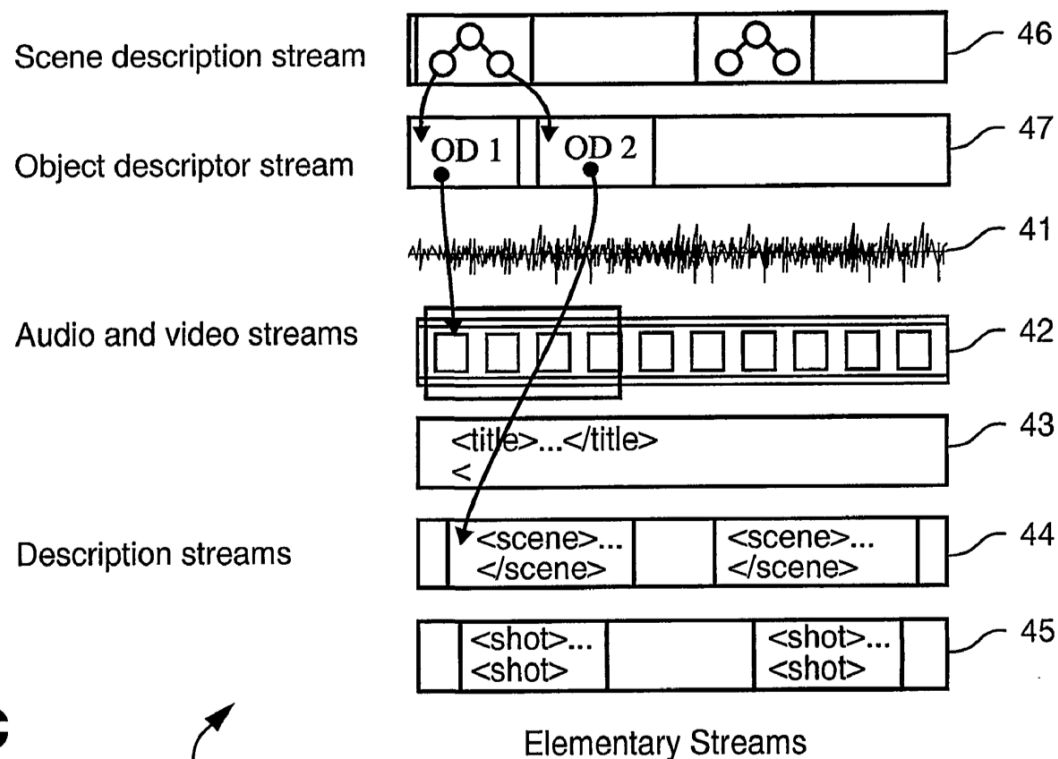
which content-related first data segments and content-related second data segments are to be output first in time.”

Comps discloses this limitation. *Bederson*, ¶¶133-134. *Comps* discloses all of the elements in claim 7 except “determining, based upon a content-related marker, which content-related first data segments and content-related second data segments are to be output first in time.” With respect to the limitation of claim 7, the specification of the ’794 patent discloses:

[I]t can be beneficial to determine the first and second data segments S1, S2 to be output first in time in each case within the first and second files D1, D2 on the basis of a marker M....In the example according to FIG.4, a first and a second marker M1, M2 are inserted, *the first marker M1 being identified by means of a text ‘Start 1’ and the second marker by way of a text ‘Start 2’.*

’794Pat, 6:50-63 (emphasis added).

Similarly, *Wan* describes markers within the Scene description stream 46. *See Wan*, Figure 4C (below). “Also included is a high-level scene description stream 46 comprising (compound or primitive) nodes of media objects and having leaf nodes (which are primitive media objects) that point to object descriptors OD_n that make up an object descriptor stream 47.” *Wan*, [0053].

**Fig. 4C**

40

Wan, Fig. 4c.

The scene markers in *Wan* are used to determine temporal relationships between stream elements. “An example of this is a description of a particular scene in a movie, that provides for multiple camera angles to be viewed, thus permitting viewer access to multiple video streams for which only one video stream may, practically speaking, be viewed in real-time running of the movie. *This is to be contrasted with arbitrary descriptions which have no definable temporal relationship with the streamed content.*” *Wan*, [0054] (emphasis added). Based on this disclosure from *Wan*, a POSITA would have known that the markers

determine which content from different segments are “output first in time.”

Bederson, ¶134 Thus, *Comps* in view of *Wan* disclose this limitation.

3. Claim 8

- a. **“The method as claimed in claim 7, wherein at least one of a scene change in an image sequence and a change of speaker in a speech sequence is identified by way of at least one of the first content-related markers and the second content-related markers.”**

Comps in view of *Wan* disclose this limitation. *Bederson*, ¶¶135-137.

Comps discloses the limitations in claim 8 except “wherein at least one of a scene change in an image sequence and a change of speaker in a speech sequence is identified by way of at least one of the first content-related markers and the second content-related markers.”

As discussed in section VII.B.2, which is incorporated by reference herein, a POSITA would have understood, that *Wan* discloses “content-related markers” with this scene description stream 46.⁷ See *Wan*, Figure 4C, [0053].

⁷ To the extent that this claim is not indefinite due to lack of antecedent basis of “the first content-related markers” or “the second content-related markers,” *Comps* in combination with *Wan* disclose this element. While claim 8 is dependent from claim 7 that is dependent from claim 1, neither claim 1 nor claim 7 recites “first content-related markers” or “second content-related markers.”

Wan discloses a multimedia stream 40 that includes an audio stream 41, a video stream 42, and a scene description stream 46, as shown in Figure 4C below.

Id., [0053]. *Wan* establishes the advantages of an XML-based metadata stream with a separate content stream, and how that is more “efficient” and can work well with a “low bandwidth communication link.” *Wan*, [0003]-[0004], [0038]-[0039]. With this context, *Wan* uses a scene description stream 46 that is separate from content that can be used for transmitting *updates to scene graphs*, which are “content-related markers.” *Id.*, [0047] (emphasis added).

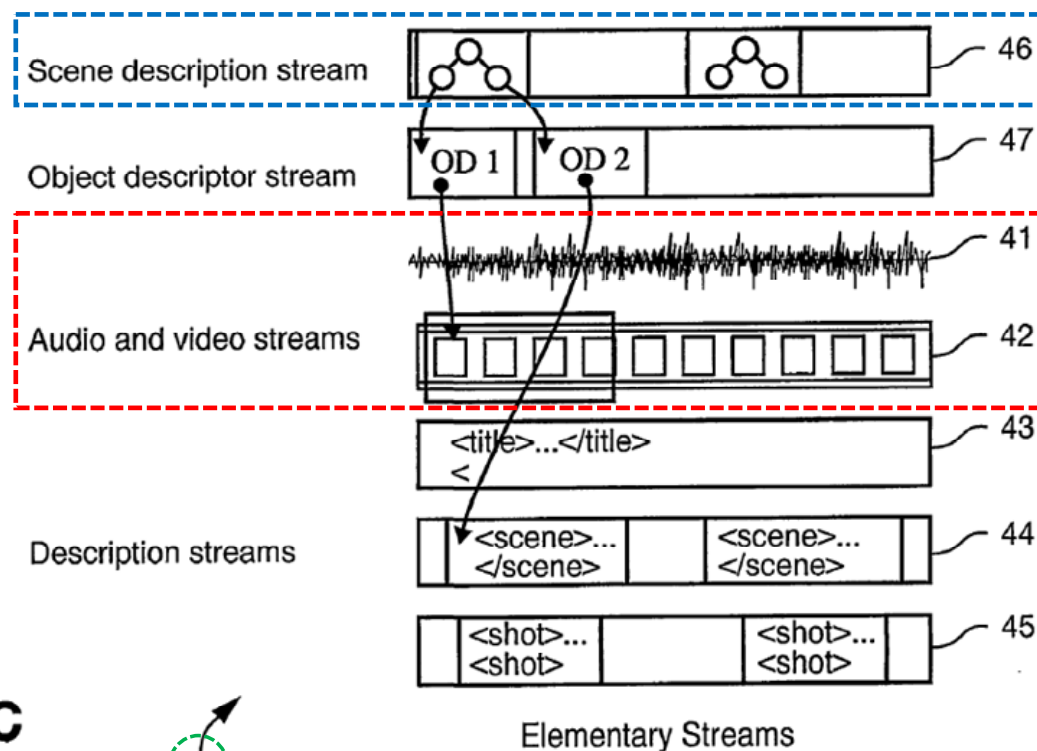


Fig. 4C



Wan, Fig. 4C (annotated).

Comps’ teaches that a display of the pictures represented by fields JPEG1 and JPEG2 would be identified by fields JPEG1:JPEG_{d1} and JPEG2:JPEG_{d2}, respectively. *See Comps*, 3:31-37. The use of media segments in a stream corresponds to *Wan*’s teaching of media streams 41 and 42. *Wan*, Figure 4C, [0053]. Thus, a POSITA would have known that *Wan*’s teaching the use of the scene description stream 46 for transmitting updates to scene graphs can similarly be used with the media data segments in *Comps* to cause a “scene change in an image sequence” “identified by way of ...content-related markers” as recited in claim 8. *Bederson*, ¶137.

4. Claim 22

- a. **22[pre]: “A method for synchronizing content-related first data segments of a first data file and content-related second data segments of a second data file, the method comprising:”**

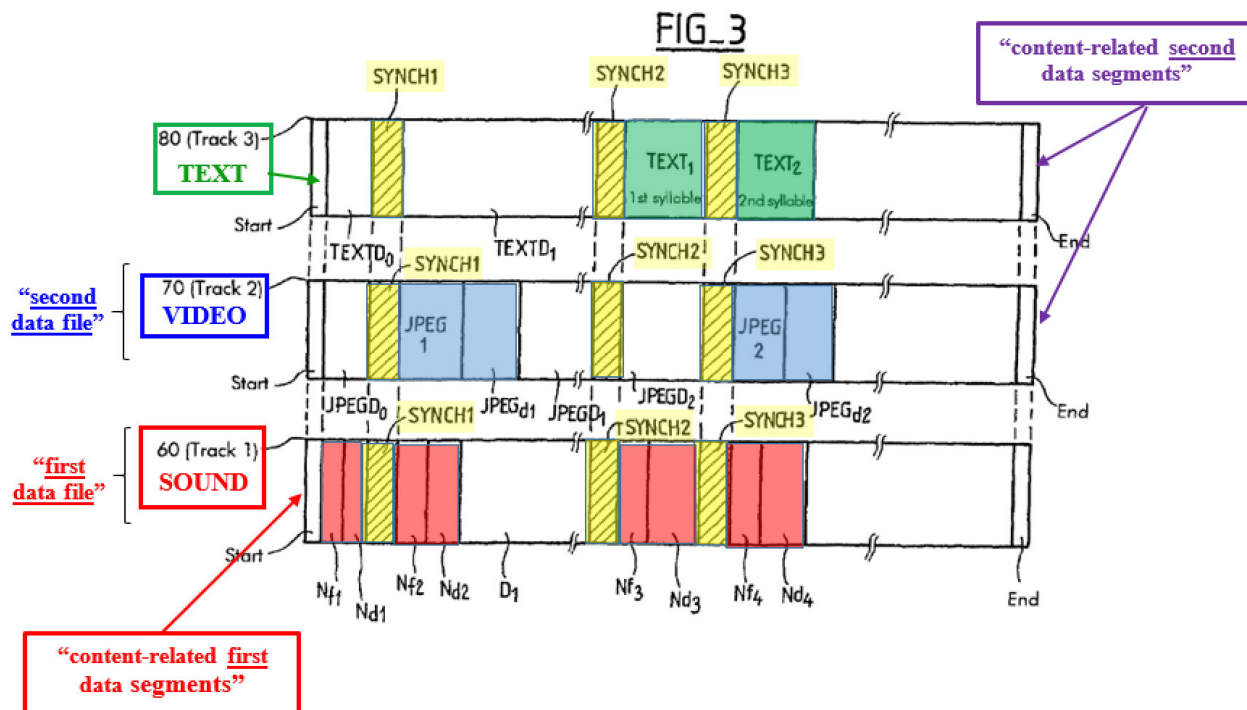
This limitation is substantively identical to that in claim 1[pre].

Accordingly, *Comps* discloses this limitation for the same reasons discussed in section VII.A.1.a. *Bederson*, ¶139.

- b. **22[a][1]: “determining an order for the content-related first data segments to be read out from the first data file and an order for the content-related second data segments to be read out from the second data file.”**

Comps discloses this limitation. *Bederson*, ¶140. *Comps* discloses “*the first data file and the second data file are read simultaneously and successive event-*

related [synchronization] commands in the first data file and the second data file are executed.” Comps, Claim 4 (emphasis added). Specifically, a microprocessors “sequentially” execute the synchronization commands SYNCH1, SYNCH2, SYNCH3 to play the sound segments and to display the picture segments and/or text segments in the pre-determined order their respective segments are stored in the tracks 60, 70, 80, as shown in Figure 3, respectively. *Id.*, 3:5-7; *see also id.*, 3:8-43, 4:3-17. For example, the sound segments in track 60, which are the “content-related first data segments” are played in the order of fields $Nf_1:Nd_1$, $Nf_2:Nd_2$, $Nf_3:Nd_3$, $Nf_4:Nd_4$, as illustrated in red in Figure 3 below. Picture segments JPEG 1 and JPEG 2, for example, which are “content-related second data segments” are displayed in the order of fields JPEG 1 and JPEG 2, in blue. SYNCH1 causes $Nf_2:Nd_2$ to be played at the same time as JPEG 1 is displayed. *Comps* expressly discloses this limitation.



Comps, Fig. 3 (annotated).

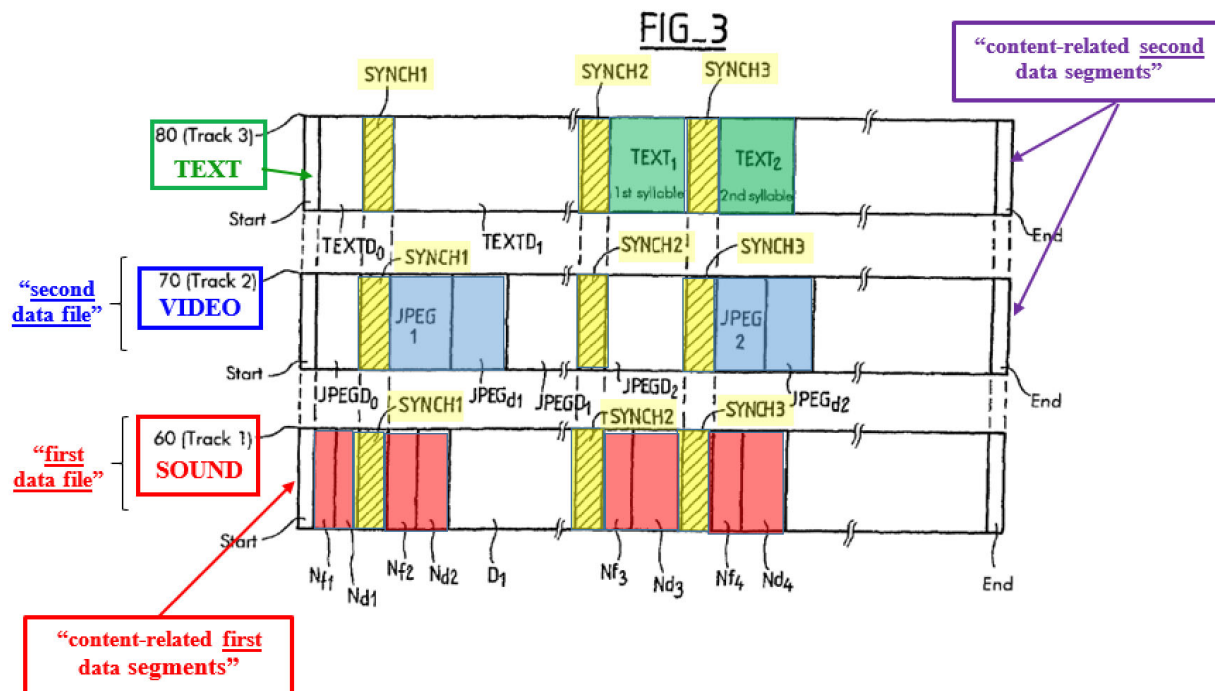
- c. 22[a][2]: “the content-related first data segments being ordered according to corresponding first content-related markers and the content-related second data segments being ordered according to corresponding second content-related markers;”

Comps discloses this limitation. *Bederson*, ¶¶141-142. As discussed in sections VII.A.1. VII.B.2, and incorporated by reference herein, *Comps* discloses “content-related first data segments” and “content-related second data segments” and *Wan* discloses “content-related markers,” which is the Scene description stream 46. *See Wan*, Figure 4C, [0053] (“Also included is a high-level scene description stream 46 comprising (compound or primitive) nodes of media objects

and having leaf nodes (which are primitive media objects) that point to object descriptors ODN that make up an object descriptor stream 47.”).

Wan further explains that those markers, as part of the scene description stream, define a temporal relationship among the streamed content. *Id.*, [0054] (“This is to be contrasted with arbitrary descriptions which have no definable temporal relationship with the stream content.”).

In *Comps*, each track 60, 70, 80 has corresponding data segments, *e.g.*, sound segments played after the Start field in the order $Nf_1:Nd_1$, $Nf_2:Nd_2$, $Nf_3:Nd_3$, $Nf_4:Nd_4$ for the sound track 60, picture segments are displayed after the Start field in the order $JPEG_1:JPEG_{d1}$, $JPEG_2:JPEG_{d2}$ for the picture track 70, and text segments are displayed after the Start field in the order of $TEXT_1$, $TEXT_2$ for the text track 80. *Id.*, 3:22-41; Fig. 3 (below). The sound fields $Nf_1:Nd_1$, $Nf_2:Nd_2$, $Nf_3:Nd_3$, $Nf_4:Nd_4$ are “first content-related markers” and the picture fields $JPEG_1:JPEG_{d1}$, $JPEG_2:JPEG_{d2}$, and text fields $TEXT_1$, $TEXT_2$ are “second content-related markers.” *Id.*, 3:22-37.



Comps, Fig. 3 (annotated).

Thus, a POSITA would have known that *Wan*'s teaching the use of the scene description stream 46 for transmitting updates to scene graphs can similarly be used with the content-related data segments in *Comps*. *Bederson*, ¶141-142.

Comps in view of *Wan*, therefore, discloses this limitation.

- d. **22[b]: “assigning, according to an assignment rule, each of the ordered content-related second data segments that are read out from the second data file with a corresponding one of the ordered content-related first data segments that are read out from the first data file; and”**

This limitation is substantively identical to that in claim 1[a][2].

Accordingly, *Comps* discloses this limitation for the same reasons discussed in section VII.A.1.c. *Bederson*, ¶¶143-144.

- e. 22[c]: “sequentially outputting, by a device for synchronizing content-related data, in a chronological sequence, each of the assigned content-related first data segments and the assigned content-related second data segments.”

This limitation is substantively identical to that in claim 1[a][1].

Accordingly, *Comps* discloses this limitation for the same reasons discussed in section VII.A.1.b. *Bederson*, ¶¶145-146.

5. Obviousness Based on *Comps* and *Wan*

There are compelling motivations to combine the relevant multimedia content synchronizing features from *Comps* and *Wan*. For example, a POSITA would have found it obvious to combine *Comps*’s teachings of a method of synchronizing different types of data with *Wan*’s teachings of use of XSLT-based presentation template and use of the scene description stream for transmitting updates to scene graphs. *Bederson*, ¶147.

First, a POSITA would have looked to *Wan* because it is analogous art to *Comps*. *Comps*, 2:6-9 (the invention provides a method of synchronizing multimedia data including “at least two separate data files (track1, track2) referred to as the first file, the second file, etc.”); *Wan*, [0043-0045] (disclosing that descriptions 33 are synchronized with associated audio files 31 and video files 32 using an internal time graph constructed by an encoder 34). *Comps* and *Wan* are

directed to a method of synchronizing multimedia data. *See, e.g., Comps*, Title, Abstract, 1:4-5, 2:6-19; *Wan*, [0045, 0052, 0063, 0068], cl. 13; *Bederson*, ¶148.

Second, *Comps* itself provides motivation to look to *Wan*. *Comps* recognizes the issue of resource constraints for processing multimedia files, specifically disclosing “the size of multimedia files and the computation power needed to process them constitute a problem.” *Comps*, 1:5-10, 1:56-58 (“The available memory is limited for reasons of overall size and battery life [of mobile terminals].”). As a solution to this issue, *Wan* discloses, for example, that “[t]he description does not have to be repeated as frequently as the AV content because the description changes much less frequently and, at the same time, *consumes significantly fewer computing resources* at the decoder end.”) *Wan*, [0073]. *Wan* also explains that separating the metadata from the content so that the XML metadata document can be parsed as soon as a sufficient portion of it is received will be “most useful in the case of a low bandwidth communication link and/or a device with very limited resources.” *Wan*, [0038]-[0039]. Thus, a POSITA would have been motivated to look to *Wan* to solve the above-discussed issue recognized by *Comps*. *Bederson*, ¶149.

Third, synchronizing multimedia data was a well-known concept. *'794Pat*, 2:4-6 (admitting that a Bitstream Binding Language (BBL) method, by which a synchronization can be performed, is known from prior art); *Comps*, 1:4-5

(disclosing a method of synchronizing different types of data in a multimedia file); *Wan*, [0063] (disclosing a method of synchronizing AV object and fragment of descriptions); *Ahn*, [0003] (disclosing a method of synchronizing metadata with multimedia contents); *Kim*, [0016] (disclosing a method of synchronizing lyric and user input data with audio data); *Kristjansson*, 2:19-25 (disclosing a method of synchronizing video and audio data in a unified manner); *Thong*, Title (disclosing a content-based synchronization method for data streams); *Abbott*, Abstract (disclosing a synchronization method to minimize a time offset between audio and video data); SMIL (Synchronized Multimedia Integration Language) has been a W3C standard since 1998 when version 1.0 was defined (<https://www.w3.org/TR/SMIL1/>). The Timing and Synchronization Module (<https://www.w3.org/TR/2005/REC-SMIL2-20051213/smil-timing.html>) describes how SMIL solves “fundamental media synchronization problems and defined a powerful way of choreographing multimedia content,” 10.2 Introduction. *Bederson*, ¶150. See *KSR Int’l Co. v. Teleflex, Inc.*, 550 U.S. 198, 415-16 (2007) (“Common sense teaches . . . that familiar items may have obvious uses beyond their primary purpose.”); *Randall Mfg. v. Rea*, 733 F.3d 1355, 1362 (Fed. Cir. 2013) (“[T]he knowledge of [a skilled] artisan is part of the store of public knowledge that must be consulted when considering whether a claimed invention would have been obvious.”).

Given the strong background knowledge about synchronization of multimedia content that a POSITA would have, and the use of well-known technologies such as XML and streaming content, the specific combination of *Comps* with *Wan* would have been technically straightforward and there would be a reasonable expectation of success. In particular, *Comp* discloses multiple streaming tracks of content in different files, and *Wan* also discloses multiple streaming tracks of content as well as an additional scene description stream. A combination of *Comp* and *Wan* would have simply added the scene description stream of *Wan* to the multiple tracks of *Comp* in a way that was already disclosed by *Wan*. The result would have been predictable since it would just use the technology described in each disclosure. *Bederson*, ¶151.

C. Ground 3: *Comps* and *Ahn* Render Obvious Claim 14

Comps in combination with *Ahn* renders obvious claim 14. Ground 3 is not duplicative of Grounds 1, 2, and 4 because it is the only Ground based on *Comps* and *Ahn*.

1. Claim 14

- a. **“The method as claimed in claim 13, wherein the metadata include metadata encoded according to the XML standard.”**

As discussed in section VII.A.1 of Ground 1, which is incorporated by reference herein, *Comps* discloses “content-related first data segments of a first data file” and “content-related second data segments of a second data file” as

recited in claim 1. *Bederson*, ¶¶153-155. *Comps* does not disclose that the content-related data segments are “metadata encoded according to the XML standard.”

However, the SYNCH commands in *Comps* would be understood by a POSITA to be metadata since it described aspects of the data—namely, how the different tracks related to each other. It was also well-known to a POSITA at the time of the '794 patent that content-related data may be metadata. *Wan*, [0002] (“multimedia may be conveniently referred to as being formed of content and descriptions. The description is typically formed by metadata”); *Ahn*, [0003] (“The present invention relates to an apparatus and method for synchronizing metadata with multimedia contents, and transmitting them.”); *Seong*, [0003] (“The present invention relates to [] a transcoding system and method that can effectively synchronize segmentation metadata with AV contents”); *Bederson*, ¶154.

Specifically, *Ahn* discloses “prior art only disclose metadata description methods and do not include synchronization and transmission methods of *the multimedia contents and related metadata*” *Ahn*, [0005]), thus “the present invention [] provide[s] a method for *synchronizing metadata with multimedia contents*, and transmitting them.” *Id.*; [0006] (emphasis added). *Ahn* discloses that “[t]he metadata synchronization format converter 420 *converts the XML-language metadata* transmitted from the metadata authoring unit 300 *into binary codes*, and *converts them into a synchronization format*.” *Id.*, [0030] (emphasis).

Thus, *Comps* and *Ahn* render obvious claim 14.

2. Obviousness Based on *Comps* and *Ahn*

There are compelling motivations to combine the relevant multimedia content synchronizing features from *Comps* and *Ahn*. For example, a POSITA would have found it obvious to combine *Comps*' teachings of a method of synchronizing different types of data with *Ahn*'s teachings of use of XML-language metadata. *Bederson*, ¶156.

First, a POSITA would have looked to *Ahn* because it is analogous art to *Comps*. *Comps*, 2:6-9 (the invention provides a method of synchronizing multimedia data including “at least two separate data files (track1, track2) referred to as the first file, the second file, etc.”); *Ahn*, [0033] (disclosing a method of converting the metadata into a synchronization format and synchronize it with multimedia data). *Comps* and *Ahn* are directed to a method of synchronizing multimedia data. *See Comps*, Title, Abstract, 1:4-5, 2:6-19; *Ahn*, [0003, 0006, 0033], Title, Abstract; *Bederson*, ¶157.

Second, *Comps* itself provides motivation to look to *Ahn*. *Comps* recognizes the issue of synchronizing the different types of data. For example, *Comps* discloses “[t]he problem is therefore to match the text to the music and the pictures, i.e. to *synchronize the different types of data contained in the same multimedia file.*” *Comps*, 1:26-28 (emphasis added). As a solution to this issue,

Ahn discloses, for example, a “method for synchronizing metadata with multimedia contents [*i.e.*, different types of data].” *Ahn*, [0003]. Thus, a POSITA would have been motivated to look to solve the above-discussed issue recognized by *Comps. Bederson*, ¶158.

Third, synchronizing multimedia data was a well-known concept. *'794Pat*, 2:4-6 (admitting that a Bitstream Binding Language (BBL) method, by which a synchronization can be performed, is known from prior art); *Comps*, 1:4-5 (disclosing a method of synchronizing different types of data in a multimedia file); *Wan*, [0063] (disclosing a method of synchronizing AV object and fragment of descriptions); *Ahn*, [0003] (disclosing a method of synchronizing metadata with multimedia contents); *Kim*, [0016] (disclosing a method of synchronizing lyric and user input data with audio data); *Kristjansson*, 2:19-25 (disclosing a method of synchronizing video and audio data in a unified manner); *Thong*, Title (disclosing a content-based synchronization method for data streams); *Abbott*, Abstract (disclosing a synchronization method to minimize a time offset between audio and video data); *Bederson*, ¶159. *See KSR Int'l Co. v. Teleflex, Inc.*, 550 U.S. 198, 415-16 (2007) (“Common sense teaches . . . that familiar items may have obvious uses beyond their primary purpose.”); *Randall Mfg. v. Rea*, 733 F.3d 1355, 1362 (Fed. Cir. 2013) (“[T]he knowledge of [a skilled] artisan is part of the store of

public knowledge that must be consulted when considering whether a claimed invention would have been obvious.”).

Finally, a POSITA would have had a reasonable expectation of success in combining *Comps* with *Ahn* since use of XML was such a standard and well-known technology. A POSITA would know that content metadata would need to be in some structured format, and so would look to standard formats that existing tools and parsers supported. XML is one of those well-known formats and would be one of a small number of formats to use to store metadata for content such as that disclosed in *Comps. Bederson*, ¶160.

D. Ground 4: *Comps* and *Kim* Render Obvious Claims 18 and 19

Comps in combination with *Kim* renders obvious claims 18 and 19. Ground 4 is not duplicative of Grounds 1, 2, and 3 because it is the only Ground based on *Comps* and *Kim*.

1. Claim 18

- a. **“The method of claim 1, wherein the assignment rule is maintained in a file separate from the first data file and the second data file.”**

Comps in view of *Kim*, disclose this limitation. *Bederson*, ¶¶162-166.

As discussed in section VII.A.1 of Ground 1, which is incorporated by reference herein, *Comps* discloses “an assignment rule,” “a first data file,” and “a second data file” of claim 1. *Comps* does not disclose that the “assignment rule is maintained in a file separate from the first data file and the second data file.”

Kim describes that lyric or user data related with a song recorded on a rewritable disk such as DVD-RW is “segmentized into several units. Each segmentized unit is *linked* with each corresponding part of the recorded song through segment synchronizing information for the purpose of minute synchronization of song and additional data.” *Kim*, [0030] (emphasis added). The segmentized lyric or user data may be recorded “*in a file separated from the management information file storing management information for controlling reproduction of all of recorded audio data.*” *Id.*, Claim 7 (emphasis added); *see also* Claim 6; [0032, 0034, 0040-0045].

A POSITA would learn from *Kim* that any kind of information regarding management of information files could be stored in a file that was separate from the information files. This would include the SYNCH IDs of *Comps*, where is information regarding management of content information. Thus, the combination of *Comps* and *Kim* would store the SYNC ids of *Comps* in a file separate from its content files, thus rendering claim 18 obvious. *Bederson*, ¶165.

This combination would have a reasonable expectation of success since deciding how to structure data in a computer system, such as storing data in the same file or separate files was a well-known technique and one of just two possibilities. *Bederson*, ¶166.

2. Claim 19

- a. **“The device of claim 9, wherein the assignment rule is maintained in a file separate from the first data file and the second data file.”**

This limitation is substantively identical to that in claim 18. Accordingly, *Comps* in view of *Kim* disclose this limitation for the same reasons discussed in section VII.D.1 *Bederson*, ¶167.

3. Obviousness Based on *Comps* and *Kim*

There are compelling motivations to combine the relevant multimedia content synchronizing features from *Comps* and *Kim*. For example, a POSITA would have found it obvious to combine *Comps*’ teachings of a method of synchronizing different types of data with *Kim*’s teachings of use of a different file for the assignment rule. *Bederson*, ¶168.

First, a POSITA would have looked to *Kim* because it is analogous art to *Comps*. *Comps*, 2:6-9 (the invention provides a method of synchronizing multimedia data including “at least two separate data files (track1, track2) referred to as the first file, the second file, etc.”); *Kim*, [0016] (disclosing a method of synchronizing additional data such as lyric data and user input data with audio data). Both *Comps* and *Kim* are directed to a method of synchronizing multimedia data. *See Comps*, Title, Abstract, 1:4-5, 2:6-19; *Kim*, [0002, 0016, 0030], Title, Abstract; *Bederson*, ¶169.

Second, *Comps* itself provides motivation to look to *Kim*. *Comps* recognizes the issue of synchronizing the different types of data. For example, *Comps* describes that “[t]he problem is therefore to match the text to the music and the pictures, i.e. to *synchronize the different types of data contained in the same multimedia file.*” *Comps*, 1:26-28 (emphasis added). As a solution to this issue, *Kim* discloses, for example, “a synchronizing method that records additional data such as lyric data and user input data to be synchronized minutely with audio data [*i.e.*, different types of data] on a rewritable recording medium.” *Kim*, [0016]. Thus, a POSITA would have been motivated to look to *Kim* to solve the above-discussed issue recognized by *Comps*. *Bederson*, ¶170.

Third, synchronizing multimedia data was a well-known concept. *'794Pat*, 2:4-6 (admitting that a Bitstream Binding Language (BBL) method, by which a synchronization can be performed, is known from prior art); *Comps*, 1:4-5 (disclosing a method of synchronizing different types of data in a multimedia file); *Wan*, [0063] (disclosing a method of synchronizing AV object and fragment of descriptions); *Ahn*, [0003] (disclosing a method of synchronizing metadata with multimedia contents); *Kim*, [0016] (disclosing a method of synchronizing lyric and user input data with audio data); *Kristjansson*, 2:19-25 (disclosing a method of synchronizing video and audio data in a unified manner); *Thong*, Title (disclosing a content-based synchronization method for data streams); *Abbott*, Abstract

(disclosing a synchronization method to minimize a time offset between audio and video data); *Bederson*, ¶171. See *KSR Int’l Co. v. Teleflex, Inc.*, 550 U.S. 198, 415-16 (2007) (“Common sense teaches . . . that familiar items may have obvious uses beyond their primary purpose.”); *Randall Mfg. v. Rea*, 733 F.3d 1355, 1362 (Fed. Cir. 2013) (“[T]he knowledge of [a skilled] artisan is part of the store of public knowledge that must be consulted when considering whether a claimed invention would have been obvious.”).

VIII. SECONDARY CONSIDERATIONS

Petitioner is unaware of any evidence of secondary considerations that would support a finding of non-obviousness. *Bederson*, ¶172. The asserted prior art demonstrates there is no evidence of failure by others and that the features recited in the challenged claims were readily available in the prior art.

IX. DISCRETIONARY DENIAL IS NOT WARRANTED UNDER EITHER §314 OR §325

The *Fintiv* framework should not be followed here because the framework exceeds the Director’s authority, is arbitrary and capricious, and was adopted without notice-and-comment rulemaking. Even if considered, the Board should not exercise its discretion to deny institution under 35 U.S.C. § 314(a) based on *Apple Inc. v. Fintiv, Inc.*, IPR2020-00019, Paper 11 at 2–3, 6 (Mar. 20, 2020)), and the

USPTO’s recent Interim Procedure for Discretionary Denials⁸ (“Interim *Fintiv* Guidance”) because, on balance, the *Fintiv* factors do not weigh in favor of denying institution of trial. Moreover, the Petition presents a compelling, meritorious challenge, and there is no evidence of abuse by Petitioners. The Board should not exercise its discretion to deny institution on this basis alone. *See* Interim *Fintiv* Guidance, 3-5.

A. *Fintiv* Factors

The *Fintiv* factors do not weigh in favor of denying institution of trial in this matter.

Upon institution of this petition, Petitioner may file a motion to stay the parallel litigation. Furthermore, while no motion to stay pending IPR has yet been filed in the Delaware district court case, *Fintiv* factor one is neutral given that courts commonly stay cases upon IPR institution. *VMWare, Inc. v. Intell. Ventures II LLC*, IPR2020-00859, Paper 13 at 12 (PTAB Nov. 5, 2020) (finding factor one neutral, even though Petitioner had not previously sought a stay, and despite Patent

⁸ Available at https://www.uspto.gov/sites/default/files/documents/interim_proc_discretionary_denials_aia_parallel_district_court_litigation_memo_20220621_.pdf

Owner’s argument that the district court judge was “unlikely” to issue a stay pending IPR institution).

Fintiv factors two (trial date), three (investment in proceedings), and four (overlap of issues) all weigh against the Board’s exercising its discretion to deny institution. The Interim *Fintiv* Guidance “allows parties to present evidence regarding the most recent statistics on median time-to-trial for civil actions in the applicable district court and identifies the report providing those statistics.”⁹ Interim *Fintiv* Guidance, 8-9 & n.12. That report shows the “most recent statistics on median time-to-trial for civil actions” in the District of Delaware is 33.7 months.¹⁰ Here, the Delaware district court case is in its infancy: the initial case management conference has yet to be held, there have been no infringement or invalidity contentions, or claim construction exchanges or briefing; a claim construction hearing has not been calendared; and the trial date has yet to be set. Petitioner filed a partial motion to dismiss, including for lack of patentable subject matter under 35

⁹ Available at <https://www.uscourts.gov/statistics/table/na/federal-court-managementstatistics/> 2022/03/31-1.

¹⁰ *See* https://www.uscourts.gov/sites/default/files/data_tables/fcms_na_distprofile1231.2022.pdf.

U.S.C. § 101, on June 10, 2022. A hearing on that motion took place on February 9, 2023, but the motion is still pending. Further, if this Petition is instituted, Petitioner stipulates that it will not pursue the grounds identified in this Petition before the district court. *Sand Revolution II, LLC v. Cont'l Intermodal Grp.-Trucking LLC*, IPR2019-01393, Paper 24 at 11-12 (June 16, 2020) (informative).

Fintiv factor five has no weight because Petitioner and Patent Owner are the same parties as in the district court. *Weatherford U.S. v. Enventure Global Tech., Inc.*, IPR2020-01684, Paper 16 at 11–13 (PTAB Apr. 14, 2021). *Fintiv* explained that “it is often reasonable for a petitioner to wait to file its petition until it learns which claims are being asserted against it in the parallel proceeding.” *Apple Inc. v. Fintiv, Inc.*, IPR2020-00019, Paper 11 at 11 (PTAB Mar. 20, 2020) (precedential). Here, Petitioner filed this Petition even before that, as Patent Owner has yet to serve contentions identifying the purportedly infringed claims.

Finally, regarding *Fintiv* factor six (other circumstances), the strong merits of this Petition weigh heavily against discretionary denial. Petitioner raises a compelling, meritorious challenge that the patent owner cannot meaningful rebut, which underscores the conclusion that one or more claims of the '245 patent are unpatentable.

Considering the *Fintiv* factors overall, institution would best serve the efficiency and integrity of the system.

B. Becton Dickinson/Advanced Bionics/General Plastics Factors

Denying institution under 35 U.S.C. § 325(d) would not be appropriate here, because the grounds and arguments relied on by this Petition were not previously presented to the Patent Office. None of the relied-upon art was considered during prosecution. The prior art asserted in this Petition is different than the prior art asserted in the prior IPR filed by Unified Patents, LLC. *See Unified Patents, LLC v. VL Collective IP, LLC*, IPR2022-01086, Paper 2 at 3 (PTAB Jun. 7, 2022). Further, because this is Petitioner's first petition against the '794 patent, the *General Plastic* factors do not weigh against institution.

X. MANDATORY NOTICES**A. Real Parties-in-Interest**

The real parties-in-interest here are Netflix, Inc. and Netflix Streaming Services, Inc. No other party is directing, controlling, or funding this *Inter Partes* Review proceeding (IPR).

B. Related Matters

As of the filing date of this Petition, and to the best knowledge of Petitioner, the '794 patent is or has been the subject of the following proceedings:

- *VideoLabs, Inc. v. Netflix Inc.*, Case 1:22-cv-00229 (D. Del.)
- *VideoLabs, Inc. v. Amazon.com, Inc.*, Case 6:22-cv-01167 (W.D. Tex.)

- *VideoLabs, Inc. v. Amazon.com, Inc.*, Case 2:22-cv-01451 (W.D. Wash.)
- *VideoLabs, Inc. v. Amazon.com, Inc.*, Case 6:22-cv-00079 (W.D. Tex.)
- *Starz Entertainment, LLC v. VL Collective IP, LLC*, Case 1:21-cv-01448 (D. Del.)
- *VideoLabs, Inc. et al. v. Apple Inc.*, Case NDCA-3-23-cv-01307 (N.D. Cal.)
- *Unified Patents, LLC v. VL Collective IP, LLC*, IPR2022-01086 (PTAB)

C. Lead/Back-up Counsel, and Service Information Under 37 C.F.R. § 42.8(b)(3)

Lead Counsel	Back-up Counsel
Aliza George Carrano, Reg. No. 70,637 (acarrano@willkie.com)	Indranil Mukerji, Reg. No. 46,944(imukerji@willkie.com)
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Petitioner has paid the required fee under 37 C.F.R. §§ 42.15(a) and 42.103 through P.R.P.S. Please assess any fee deficiency or credit to Deposit Account No. 232405.

D. Service Information

Petitioner consents to e-mail service at the addresses of lead and back-up counsel and Netflix-VL_WFG@willkie.com. Hand delivery is also available to the addresses of lead and back-up counsel.

XI. CONCLUSION

For the foregoing reasons, Petitioner respectfully requests that the Board institute *inter partes* review trial and cancel claims 1-22 of the '794 patent as unpatentable.

Respectfully submitted,

Dated: May 5, 2023

By: // Aliza George Carrano //
Lead Counsel for Petitioner

CERTIFICATE OF COMPLIANCE

The undersigned certifies that this Petition complies with the applicable type-volume limitations of 37 CFR § 42.24. Exclusive of the portions exempted by 37 CFR § 42.24(a), this Petition contains 13,434 words as counted by the word processing program used for its preparation (Microsoft Word 2016) and is in compliance with the 14,000 word limit set forth in 37 C.F.R. § 42.24(a)(1)(i).

// Aliza George Carrano //
Lead Counsel for Petitioner

CERTIFICATE OF SERVICE

I hereby certify that on May 5, 2023, I caused a true and correct copy of the foregoing materials:

- Petition for *Inter Partes* Review of U.S. Patent No. 8,605,794
- Exhibits 1001-1019
- Petitioner's Powers of Attorney

to be served via: FedEx Express and e-mail to the Patent Owner's Attorney of

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