

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

VUDU, INC.,
Petitioner,

v.

IDEAHUB, INC.,
Patent Owner.

IPR2020-01689
Patent 10,313,414 B2

Before BRYAN F. MOORE, MIRIAM L. QUINN, and
MONICA S. ULLAGADDI, *Administrative Patent Judges*.

ULLAGADDI, *Administrative Patent Judge*.

JUDGMENT
Final Written Decision
Determining All Challenged Claims Unpatentable
Denying Patent Owner's Motion to Amend
35 U.S.C. § 318(a)

I. INTRODUCTION

Vudu, LLC (“Petitioner”) filed a Petition (Paper 1, “Petition” or “Pet.”) requesting an *inter partes* review of claims 1, 11, 25, 27, and 29 of U.S. Patent No. 10,313,414 B2 (Ex. 1001, “the ’414 patent”) pursuant to 35 U.S.C. §§ 311–319, accompanied by the supporting Declarations of Dr. Azer Bestavros (Ex. 1003), Mr. John Meredith (Ex. 1010), and Dr. Anthony Vetro (Ex. 1022). Ideahub, Inc. (“Patent Owner”) filed a Preliminary Response. Paper 11 (“Preliminary Response” or “Prelim. Resp.”). With our authorization, Petitioner filed a Reply (Paper 12, “Preliminary Reply” or “Prelim. Reply”) addressing discretion under 35 U.S.C. § 314(a). Although we authorized a Sur-Reply, Patent Owner did not file one.

We instituted trial on the challenged claims on all grounds set forth in the Petition. Paper 16. Patent Owner did not file a response, but instead filed a Contingent Motion to Amend, proposing substitute claims 31–35 in the event the challenged claims are determined to be unpatentable. Paper 21. Petitioner filed an Opposition to Patent Owner’s Contingent Motion to Amend. Paper 23. On October 27, 2021, the panel entered its Preliminary Guidance (Paper 25) indicating that there was a reasonable likelihood that the substitute claims proposed in the Contingent Motion to Amend were unpatentable. Paper 25, 6–19.

Patent Owner filed a Revised Contingent Motion to Amend. Paper 26 (“Rev. MTA”). Petitioner filed an Opposition to Patent Owner’s Revised Motion to Amend. Paper 28 (“Opp. Rev. MTA” or “Opposition”). Patent Owner filed a Reply to Petitioner’s Opposition. Paper 32 (“Reply Opp. Rev.” or “Reply”). Petitioner filed a Sur-reply to Patent Owner’s Reply. Paper 42 (“Pet. Sur-reply”). We conducted an oral hearing on February 15,

2022. A transcript of the oral hearing has been entered in the record. Paper 47 (“Tr.”).

We have jurisdiction under 35 U.S.C. § 6. This Final Written Decision is issued pursuant to 35 U.S.C. § 318(a). We base our decision on the preponderance of the evidence. 35 U.S.C. § 316(e); 37 C.F.R. § 42.1(d). Having reviewed the arguments of the parties and the supporting evidence, we determine that Petitioner has proven by a preponderance of the evidence that claims 1, 11, 25, 27, and 29 of the ’414 patent are unpatentable. In addition, we deny Patent Owner’s Revised Contingent Motion to Amend.

II. BACKGROUND

A. *Real Parties In Interest*

In addition to itself, Petitioner (Vudu, LLC) identifies the following entities as real parties in interest: Fandango Media, LLC; Fandango Holdings LLC; MTC Acquisition LLC; NBCUniversal Fandango Holdings, LLC; NBCUniversalMedia, LLC; and Walmart Inc. Pet. 3. In addition to itself, Patent Owner (Ideahub, Inc.) identifies Helios Streaming, LLC as a real party in interest. Paper 3, 1.

B. *The ’414 Patent*

The ’414 patent concerns a “method and apparatus for an adaptive Hypertext Transfer Protocol (HTTP) streaming service using metadata of media content. . . .” Ex. 1001, code (57). Figure 1, reproduced below, illustrates “a Dynamic Adaptive Streaming over HTTP (DASH) high-level data model.” *Id.* at 3:54–55.

FIG. 1

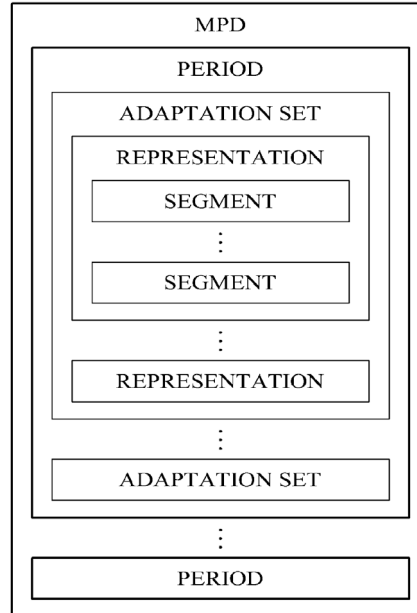


Figure 1 depicts a hierarchy of elements in the DASH data model. The data model of Figure 1 depicts a top-level media presentation description (MPD) which

may include a sequence of one or more periods. Each of the periods may include one or more adaptation sets. When an adaptation set includes one or more media content components, each of the media content components may be individually defined. Each of the adaptation sets may include one or more representations. Each of the representations may include one or more sub-representations. Each of the representations may include one or more segments. Segments may include media data, and/or metadata to access, decode, and present media content including the segments.

Id. at 7:26–40. The '414 patent explains that the “metadata may include information used to describe a relationship between the representations, and include information for terminals having different display bit depth.” *Id.* at code (57). The '414 patent discloses that these elements may be

implemented by the XML syntax as shown in Table 5, which is reproduced below.

TABLE 5

```
<!-- Adaptation Set -->
<xs:complexType name="AdaptationSetType">
  <xs:complexContent>
    <xs:extension base="RepresentationBaseType">
      <xs:sequence>
        <xs:element name="Accessibility" type="DescriptorType"
minOccurs="0" maxOccurs="unbounded"/>
        <xs:element name="Role" type="DescriptorType"
minOccurs="0" maxOccurs="unbounded"/>
        <xs:element name="Rating" type="DescriptorType"
minOccurs="0" maxOccurs="unbounded"/>
        <xs:element name="Viewpoint" type="DescriptorType"
minOccurs="0" maxOccurs="unbounded"/>
        <xs:element name="ContentComponent"
type="ContentComponentType" minOccurs="0"
maxOccurs="unbounded"/>
        <xs:element name="BaseURL" type="BaseURLType"
minOccurs="0" maxOccurs="unbounded"/>
        <xs:element name="SegmentBase" type="SegmentBaseType"
minOccurs="0"/>
        <xs:element name="SegmentList" type="SegmentListType"
```

The first portion of Table 5 depicts the XML syntax for an adaptation set.

The second portion of Table 5, reproduced below, depicts XML attributes and the SegmentTemplate element.

TABLE 5-continued

```
minOccurs="0"/>
  <xs:element name="SegmentTemplate"
type="SegmentTemplateType" minOccurs="0"/>
  <xs:element name="Representation" type="RepresentationType"
minOccurs="0" maxOccurs="unbounded"/>
</xs:sequence>
<xs:attribute ref="xlink:href"/>
<xs:attribute ref="xlink:actuate" default="onRequest"/>
<xs:attribute name="id" type="xs:unsignedInt"/>
<xs:attribute name="group" type="xs:unsignedInt"/>
<xs:attribute name="lang" type="xs:language"/>
<xs:attribute name="contentType" type="xs:string"/>
<xs:attribute name="par" type="xs:string"/>
<xs:attribute name="minBandwidth" type="xs:unsignedInt"/>
<xs:attribute name="maxBandwidth" type="xs:unsignedInt"/>
<xs:attribute name="minWidth" type="xs:unsignedInt"/>
<xs:attribute name="maxWidth" type="xs:unsignedInt"/>
<xs:attribute name="minHeight" type="xs:unsignedInt"/>
<xs:attribute name="maxHeight" type="xs:unsignedInt"/>
<xs:attribute name="minFrameRate" type="xs:string"/>
<xs:attribute name="maxFrameRate" type="xs:string"/>
<xs:attribute name="segmentAlignment"
type="ConditionalUintType" default="false"/>
  <xs:attribute name="subsegmentAlignment"
type="ConditionalUintType" default="false"/>
  <xs:attribute name="subsegmentStartsWithSAP" type="SAPType"
default="0"/>
  <xs:attribute name="bitstreamSwitching" type="xs:boolean"/>
</xs:extension>
</xs:complexContent>
</xs:complexType>
<!-- Conditional Unsigned Integer (unsignedInt or boolean) -->
<xs:simpleType name="ConditionalUintType">
  <xs:union memberTypes="xs:unsignedInt xs:boolean"/>
</xs:simpleType>
```

The second portion of Table 5 depicts XML attributes.

The '414 patent discloses that "[s]egment information may be assigned to representations, through presence of elements 'BaseURL,' 'SegmentBase,' 'SegmentTemplate' and/or 'SegmentList.'" *Id.* at 17:57–59. "The segment information may provide information on location, availability and properties of all of one or more segments included in a representation." *Id.* at 17:59–62. The '414 patent further discloses that, "to express default values, the elements "'SegmentBase,' 'SegmentTemplate' and

‘SegmentList’ may be included in the element ‘Period’ or ‘AdaptationSet.’”
Id. at 17:67–18:3.

The ’414 patent explains that “[w]hen either ‘SegmentTemplate’ or ‘SegmentList’ exists in a level of a hierarchy, the other element may not be present on a lower hierarchy level.” *Id.* at 18:3–5. The ’414 patent further discloses that the “elements ‘SegmentBase,’ ‘SegmentTemplate’ and ‘SegmentList’ may inherit attributes and elements from the same element on a higher level.” *Id.* at 18:5–8.

C. *Related Matters*

As required by 37 C.F.R. § 42.8(b)(2), the parties identify judicial matters that would affect, or be affected by, a decision in this proceeding. In particular, the parties inform us that the ’414 patent is asserted in the following district court cases:

Helios Streaming, LLC v. Starz Entertainment, LLC, No. 8:19-cv-2140 (C.D. Cal.);

Helios Streaming, LLC v. Vudu, Inc., No. 1:19-cv-1792 (D. Del.);

Helios Streaming, LLC v. Crackle, Inc., No. 1:19-cv-1818 (D. Del.);

and

Helios Streaming, LLC v. Showtime Digital, Inc., No. 1:19-cv-1978 (D. Del.). Paper 3, 1; Pet. 3–4.

Patent Owner also identifies IPR2020-01688, which challenges U.S. Patent No. 10,270,830 (“the ’830 patent”), which is a part of the continuity chain of the ’414 patent.¹

¹ Priority information was obtained from the USPTO’s Public Patent Application Information Retrieval (PAIR) System.

D. Illustrative Claim

Petitioner challenges claims 1, 11, 25, 27, and 29 of the '414 patent. Pet. 1. Claims 1, 11, and 25 are independent. Claim 25 is illustrative and reproduced below.

- [25.0] A method of providing media content performed by a server or multiple servers, comprising:
- [25.1] transmitting a Media Presentation Description (MPD) of a media content to a client;
- [25.2] receiving a request, from the client, for a segment of the media content;
- [25.3] transmitting the media content to the client,
- [25.4] wherein the MPD includes one or more periods,
- [25.5] wherein each of the periods includes one or more adaptation sets,
- [25.6] wherein each of the adaptation sets includes one or more representations,
- [25.7] wherein each of the representations includes one or more segments, and
- [25.8] wherein information on a location, availability or property for the one or more segments in a representation is comprised in a SegmentTemplate element.

Ex. 1001, 30:66–31:15.

E. Asserted Grounds

Petitioner presents the following challenges as summarized in the chart below. Petitioner supports its challenges to the proposed substitute claims and the revised, proposed substitute claims with the First Declaration of Dr. Azer Bestavros (Ex. 1003).

Claim(s) Challenged	35 U.S.C. §	Reference(s)/Basis
1, 11, 25, 27, 29	103(a) ²	DIS 23001-6 ³
1, 11, 25, 27, 29	102(a)	DIS 23009-1 ⁴
1, 11, 25, 27, 29	103(a)	DIS 23009-1
1, 11, 25, 27	102(a)	3GPP TS 26.247 ⁵
1, 11, 25, 27	103(a)	3GPP TS 26.247

III. ANALYSIS

A. *Legal Standards*

A patent claim is unpatentable under 35 U.S.C. § 103(a) if the differences between the claimed subject matter and the prior art are such that the subject matter, as a whole, would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. *KSR Int’l Co. v. Teleflex Inc.*, 550 U.S. 398, 406 (2007). The question of obviousness is resolved on the basis of underlying factual determinations including: (1) the scope and content of the prior art;

² The Leahy-Smith America Invents Act, Pub. L. No. 112-29, 125 Stat. 284 (2011) (“AIA”), included revisions to 35 U.S.C. § 103 that became effective after the effective filing date of the challenged claims. Therefore, we apply the pre-AIA version of 35 U.S.C. § 103.

³ International Organization for Standardization/International Electrotechnical Commission (ISO/IEC) Final Committee Draft (FCD) 23001-6, “Information technology—MPEG systems technologies – Part 6: Dynamic adaptive streaming over HTTP (DASH),” dated January 28, 2011 (Ex. 1004, “DIS 23001-6”).

⁴ ISO/IEC Draft International Standard (DIS 23009-1), “Information technology—Dynamic adaptive streaming over HTTP (DASH)— Part 1: Media presentation description and segment formats,” dated August 30, 2011 (Ex. 1005, “DIS 23009-1”).

⁵ 3rd Generation Partnership Project (3GPP) Technical Specification (TS) 26.247 V10.1.0 (2011-11), “3rd Generation Partnership Project; Technical Specification Group Services and System Aspects; Transparent end-to-end Packet-switched Streaming Service (PSS); Progressive Download and Dynamic Adaptive Streaming over HTTP (3GP-DASH) (Release 10)” (Ex. 1006, “3GPP TS 26.247”).

(2) any differences between the claimed subject matter and the prior art; (3) the level of ordinary skill in the art; and (4) when in evidence, objective evidence of nonobviousness.⁶ *Graham v. John Deere Co.*, 383 U.S. 1, 17–18 (1966).

B. Level Of Ordinary Skill In The Art

Petitioner contends that:

A person of ordinary skill in the art (“POSA”) in the relevant field as of the earliest priority date would have had at least the equivalent of a Bachelor’s degree in electrical engineering, computer engineering, computer science, or a related subject and two or more years of experience in the field of media streaming over the Internet.

Pet. 19 (citing Ex. 1003 ¶ 82). Patent Owner does not dispute Petitioner’s assertions regarding the level of ordinary skill in the art, nor does it present its own definition in any of its briefing. We adopt Petitioner’s definition as it is consistent with the Specification of the ’414 patent and the cited references.

C. Claim Construction

In *inter partes* review proceedings based on petitions filed on or after November 13, 2018, such as this one, we construe claims using the same claim construction standard that would be used in a civil action under 35 U.S.C. § 282(b), as articulated in *Phillips v. AWH Corp.*, 415 F.3d 1303 (Fed. Cir. 2005) (en banc), and its progeny. See 37 C.F.R. § 42.100(b).

Petitioner proposes that we construe “adaptation set,” and “SegmentTemplate.” Pet. 19–21. Patent Owner does not address claim construction in any of its briefing.

⁶ Patent Owner does not present objective evidence of nonobviousness.

We need not construe any claim term to resolve the issues before us, and therefore, do not expressly define any claim term in our Decision. *See Nidec Motor Corp. v. Zhongshan Broad Ocean Motor Co.*, 868 F.3d 1013, 1017 (Fed. Cir. 2017) (explaining that construction is needed only for terms that are in dispute, and only as necessary to resolve the controversy).

D. Priority Date

Petitioner contends that the challenged claims are not entitled to claim priority to the 2011 Korean application (KR10-2011-0023271) listed on the face of the '414 patent, and thus the claims have a priority date no earlier than March 16, 2012. Pet. 22–24. Based on this asserted priority date, Petitioner contends that the asserted prior art references qualify as prior art under at least 35 U.S.C. § 102(a). *Id.* at 27–28, 31, 33. Patent Owner does not make any arguments as to the proper priority date of the challenged claims in its post-institution briefing.

The '414 patent claims domestic priority to application No. 16/168,933, now the '830 patent, which claims domestic priority to application No. 15/834,702, filed on December 7, 2017, now U.S. Patent No. 10,122,780, which is a continuation of application No. 14/004,644, which is a National Stage Entry of application No. PCT/KR2012/001922 (“PCT '922”) filed on March 16, 2012, now U.S. Patent No. 9,860,293 (“the '293 patent”). Ex. 1001, code (63). The '414 patent claims foreign priority to two Korean applications—KR10-2011-0023271, filed March 16, 2011, and KR10-2012-0026862, filed March 16, 2012. *Id.* at code (30). We consider whether the '414 patent is entitled to the date of the earlier of the two foreign priority applications, KR10-2011-0023271, in order to determine whether DIS 23001-6, DIS 23009-1, and 3GPP TS 26.247 constitute prior art.

KR10-2011-0023271 generally relates to an “accessibility feature . . . to support persons with disabilities who have difficulty in perceiving media content.” Ex. 1066, 8. Although it mentions certain elements and attributes of MPEG DASH—group, representation, sub-representation (*see, e.g., id.* at 10)—it does not discuss their hierarchy or inheritance relationships. *See* Pet. 21–23.

Petitioner has persuasively demonstrated that the challenged claims are not entitled to a priority date earlier than March 16, 2012 (the filing date of PCT ’922), because the disclosure of KR10-2011-0023271 does not support at least the limitations of: “the adaptation set includes one or more attributes or elements that are common to each of the representations for that adaptation set,” as recited in independent claims 1 and 11, and the “SegmentTemplate” recited in independent claims 25.

Patent Owner has not asserted, after institution, that the challenged claims are entitled to an earlier date. *See Tech. Licensing Corp. v. Videotek, Inc.*, 545 F.3d 1316, 1327–28 (Fed. Cir. 2008) (indicating that patent owner bears a burden of production in arguing that the asserted references are not prior art based on entitlement to an earlier priority date). As such and for the reasons discussed below, Petitioner has persuasively demonstrated that DIS 23001-6, DIS 23009-1, and 3GPP TS 26.247 qualify as prior art to the challenged claims, because Petitioner has sufficiently demonstrated that the references were publicly accessible prior to the applicable priority date of March 16, 2012.

E. Public Accessibility

Petitioner asserts that “[t]wo of the prior art references at issue in this proceeding—DIS 23001-6 (released February 7, 2011) and DIS 23009-1 (released September 5, 2011)—are the first and second drafts of what

became the adopted international MPEG DASH standard.” Pet. 14 (citing *id.* § XI.A) (emphasis omitted). Petitioner further explains that “TS 26.247 is 3GPP’s adopted version of the second draft MPEG DASH standard.” *Id.* (citing Ex. 1003 ¶ 125) (emphasis omitted).

According to Petitioner, “DIS 23001-6 and DIS 23009-1 qualify as printed publications because they were ‘disseminated or otherwise made available to the extent that persons interested and ordinarily skilled in the subject matter or art exercising reasonable diligence, [could] locate [them].’” *Id.* at 23–24 (citing *SRI Int’l, Inc. v. Internet Sec. Sys., Inc.*, 511 F.3d 1186, 1194 (Fed. Cir. 2008) (quoting *Bruckelmyer v. Ground Heaters, Inc.*, 445 F.3d 1374, 1378 (Fed. Cir. 2006))) (alterations in original). Petitioner supports its arguments with the testimony of Dr. Anthony Vetro (Ex. 1022) and the testimony of Mr. John Meredith (Ex. 1010).

Patent Owner does not dispute Petitioner’s showing of public accessibility with respect to any of the cited references. For the reasons that follow, we determine that Petitioner’s showing sufficiently demonstrates public availability and accessibility for at least DIS 23009-1 prior to March 16, 2012.

Petitioner asserts that DIS 23009-1 was published on the MPEG DMS in 2011. Pet. 25 (citing Ex. 1022 ¶¶ 19, 42–44, 51–55, 71–75). Dr. Vetro presents similar testimony as to DIS 23009-1—that it “was uploaded to the MPEG DMS system on September 5, 2011” (Ex. 1022 ¶¶ 71–72), available to anyone with the appropriate access credentials (*id.* ¶¶ 73–74), emailed to the MPEG DASH mailing list by Thomas Stockhammer (*id.* ¶ 75), conveyed via memorandum to INCITS/L3.1 members for retrieval, review, commenting, and voting on September 7, 2011 (*id.* ¶¶ 76–81 (citing-in-part Ex. 1033; Ex. 1048)), distributed to various liaison organizations (*id.* ¶ 82

(citing Ex. 1037)), and was available to the public for purchase from the ISO catalogue between September 7, 2011 and November 7, 2011 (*id.* ¶ 83).

Mr. Meredith also presents testimony as to the public availability and accessibility of DIS 23009-1. Ex. 1010 ¶¶ 51–59.

We are persuaded that the cited evidence corroborates Dr. Vetro’s testimony and Mr. Meredith’s testimony and thus, supports Petitioner’s position that DIS 23009-1 was publicly available and accessible, prior to March 16, 2012, such that it was “disseminated or otherwise made available to the extent that persons interested and ordinarily skilled in the subject matter or art exercising reasonable diligence, [could] locate [them].” *SRI*, 511 F.3d at 1194.

F. Challenges Based on DIS 23009-1

Petitioner contends that each of the challenged claims is unpatentable under 35 U.S.C. § 102(a) as anticipated by DIS 23009-1, as well as under 35 U.S.C. § 103(a) as obvious over DIS 23009-1. Petitioner contends that “DIS 23009-1 . . . discloses every element of the Challenged Claims,” but that if “Patent Owner contends that DIS 23009-1 does not disclose a limitation of a Challenged Claim, any such limitation would have been obvious to one of skill in the art at the time of the purported invention in view of the general knowledge of a POSA as well as the express teachings of DIS 23009-1.” Pet. 51–52 (citing Ex. 1003 ¶¶ 208–209; Pet. §§ XII.B (Ground 2), VI (Technology Background)). Patent Owner does not present any arguments with respect to Petitioner’s patentability challenges. *See generally* Prelim. Resp. For the reasons that follow, we are persuaded that Petitioner establishes that independent claims 1, 11, 25 and dependent claims 27 and 29 are anticipated by and obvious in view of DIS 23009-1 by a preponderance of the evidence.

1. Overview of DIS 23009-1

DIS 23009-1 is the second finalized draft of the MPEG DASH standard and specifies a hierarchical model for DASH. DIS 23009-1 concerns an HTTP Server hosting DASH segments and a DASH Client that uses “the HTTP GET method or the HTTP partial GET method to . . . access Segments or parts thereof.” Ex. 1005 § 4.4. In Figure 3, reproduced below, DIS 23009-1 depicts the relationship between elements that implement DASH. *Id.* § 4.3 (Fig. 3).

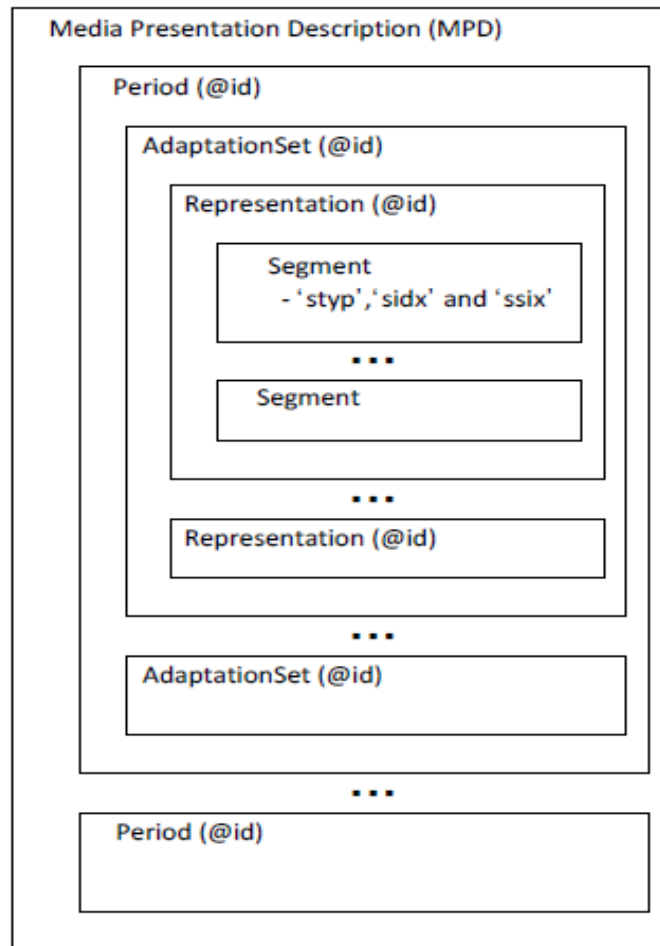


Figure 3 — DASH High-Level Data Model

Figure 3 depicts a hierarchy of elements in the DASH data model.

In Figure 3, DIS 23009-1 depicts a hierarchy of elements in the DASH data model. DIS 23009-1 discloses that “DASH Media Presentation is described by a Media Presentation Description document,” which “describes the sequence of Periods in time that make up the Media Presentation.” *Id.* (emphasis omitted). “A Period typically represents a media content period during which a consistent set of encoded versions of the media content is available i.e. the set of available bitrates, languages, captions, subtitles etc. does not change during a Period,” and “[w]ithin a Period, material is arranged into Adaptation Sets.” *Id.* (emphasis omitted).

According to DIS 23009-1, “[a]n Adaptation Set represents a set of interchangeable encoded versions of one or several media content components.” *Id.* As an example, DIS 23009-1 describes how “there may be one Adaptation Set for the main video component and a separate one for the main audio component,” and “[i]f there is other material available, for example captions or audio descriptions, then these may each have a separate Adaptation Set.” *Id.* DIS 23009-1 also discloses that an “Adaptation Set contains a set of Representations,” which “describes a deliverable encoded version of one or several media content components.” *Id.* (emphasis omitted).

DIS 23009-1 further discloses that “[a] Representation includes one or more media streams (one for each media content component in the multiplex),” and that “[t]ypically, clients may switch from Representation to Representation during a Period in order to adapt to network conditions or other factors.” *Id.* DIS 23009-1 further discloses that “[c]lients may also ignore Representations that rely on codecs or other rendering technologies they do not support or that are otherwise unsuitable.” *Id.*

Finally, DIS 23009-1 discloses that, “[w]ithin a Representation, the content may be divided in time into Segments,” which “is the basic unit of data that is advertised in the Media Presentation Description.” *Id.* (emphasis omitted). “A URL is provided for each Segment meaning that a Segment is the largest unit of data that can be retrieved with a single HTTP request.” *Id.*

1. Anticipation Challenge to Independent Claim 1

[1.0] A method of providing media content performed by a DASH (Dynamic Adaptive Streaming over HTTP) client, the method comprising:

Petitioner contends, and we agree, that, “[t]o the extent it is argued that the preamble is limiting, DIS 23009-1 discloses a ‘method of providing media content performed by a DASH (Dynamic Adaptive Streaming over HTTP) Client.’” Pet. 45 (citing Ex. 1005 §§ 4.1, 4.2, Fig. 2; Ex. 1003 ¶ 173). Petitioner further contends, and we agree, “DIS 23009-1 discloses that a ‘DASH client’ performs a method of providing media content, *e.g.*, a method of ‘delivery of media content from standard HTTP servers to HTTP clients.’” *Id.* (citing Ex. 1005 §§ 4.1, 4.2).⁷

[1.1] receiving a Media Presentation Description (MPD) of a media content; and

Petitioner contends, and we agree, that “DIS 23009-1 discloses that the DASH Client receives a MPD of a media content.” Pet. 46 (citing Ex. 1005 §§ 4.1, 4.2, 5.2.1, Fig. 2; Ex. 1003 ¶¶ 174–175).

[1.2] accessing segments of the media content based on information provided by the MPD,

⁷ We do not determine whether the preamble is limiting because the cited disclosures disclose the subject matter of the preamble.

Petitioner contends, and we agree, that “DIS 23009-1 discloses that the DASH clients access segments of the media content using the ‘HTTP GET’ or ‘HTTP partial GET method.’” Pet. 46 (citing Ex. 1005 § 4.4).

Petitioner persuasively argues that

DIS 23009-1 further discloses that the HTTP GET requests are generated based on information provided by the MPD, *i.e.* the “MPD provides sufficient information for the DASH Client to provide a streaming service to the user by requesting Segments from an HTTP server and demultiplexing, decoding and rendering the included media streams.”

Id. (citing Ex. 1005 § 4.1); *see id.* (citing Ex. 1005, Fig. 1; Ex. 1003 ¶¶ 176–177).

[1.3] wherein the MPD includes one or more periods,

[1.4] wherein each of the periods includes one or more adaptation sets,

[1.5] wherein each of the adaptation sets includes one or more representations,

[1.6] wherein each of the representations includes one or more segments,

Petitioner persuasively points to the following disclosure:

In its “Hierarchical data model” section, DIS 23009-1 discloses
A Media Presentation as described in the **MPD** consists of
—A sequence of **one or more Periods** as described in 5.5.2.
—**Each Period contains one or more Adaptation Sets** as described in 5.5.3. In case an Adaptation Set contains multiple media content components, then each media content component is described individually as defined in 5.5.4.
—**Each Adaptation Set contains one or more Representations** as described in 5.5.5.
...
—**Each Representation consists of one or more Segments** described in 6.

Pet. 46–47 (citing Ex. 1005 § 5.5.1.1). Petitioner contends, and we agree, “DIS 23009-1 further discloses that an Adaptation Set ‘contains alternate encodings of one or more media content components,’ where each ‘alternate encoding is contained in a Representation.’” *Id.* at 47 (citing Ex. 1005 § 5.5.3.1; Pet. § IX.A); *see id.* at 46 (citing Ex. 1005 §§ 5.5.1.1, 5.5.2.1, 5.5.2, 5.5.3.1, 5.5.3; 5.5.5.1, 5.5.9, 5.5.9.1; Ex. 1003 ¶¶ 178–185; Pet. § IX.A).

[1.7] wherein the MPD, the period, the adaptation set, the representation, or the segments includes one or more attributes or elements, and

Petitioner contends, and we agree, that “DIS 23009-1 discloses that the MPD includes one or more attributes or elements, *see* EX1005 § 5.5.1.2 (Table 4), the period includes one or more attributes or elements, *id.* § 5.5.2.2 (Table 5), the adaptation set includes one or more attributes or elements, *id.* § 5.5.3.2 (Table 6), and the representation includes one or more attributes or elements, *id.* § 5.5.5.2 (Table 8).” Pet. 47–48; *see id.* at 47 (citing Ex. 1005 § 5.5.7.2 (Table 10); Ex. 1003 ¶¶ 186–190).

[1.8] wherein the adaptation set includes one or more attributes or elements that are common to each of the representations for that adaptation set.

Petitioner contends, and we agree, that

Table 6 in Section 5.5.3.2 of DIS 23009-1 discloses a number of elements and/or attributes that may be included at the adaptation set level that are common to each of the representations for that adaptation set, such as the attributes @minWidth, “minimum @width value in all Representations in this Adaptation Set,” @maxWidth, “maximum @width value in all Representations in this Adaptation Set,” @minHeight, “minimum @height value in all Representations in this Adaptation Set,” @maxHeight, “maximum @height value in all Representations in this AdaptationSet,” @minBandwidth, “minimum @bandwidth value in all Representations in this Adaptation Set,” and

@maxBandwidth, “maximum @bandwidth value in all Representations in this Adaptation Set.”

Pet. 48 (citing Ex. 1005, §§ 5.5.3.2 (Table 6), 5.5.7.2 (Table 10); Ex. 1003 ¶¶ 191–192).

Having reviewed the entirety of the record, we are persuaded that the cited evidence supports Petitioner’s contentions and that DIS 23009-1 discloses the subject matter of the preamble and each limitation of independent claim 1.

2. *Anticipation Challenge to Independent Claim 11*

[11.0] A method of providing media content performed by a server or multiple servers, comprising:

Petitioner contends, and we agree, that “[t]o the extent it is argued that the preamble is limiting,” “DIS 23009-1 discloses that one or more servers, e.g., an ‘HTTP Server,’ performs a method of ‘delivery of media content from standard HTTP servers to HTTP clients.’” Pet. 48–49 (citing Ex. 1005 § 4.1); *see id.* at 48 (citing Ex. 1005, Fig. 1; Ex. 1003 ¶¶ 193–194); *supra* n.7 (declining to determine whether preamble is limiting).

[11.1] transmitting a Media Presentation Description (MPD) of a media content to a client;

Petitioner contends, and we agree, that “DIS 23009-1 discloses that the HTTP server(s) send a Media Presentation Description (MPD) of a media content to a DASH Client.” Pet. 49 (citing Ex. 1005 §§ 4.1, 4.2, 5.2.1); *see id.* (citing Ex. 1005 §§ 4.1, 4.2, 5.2.1, Fig. 2; Ex. 1003 ¶¶ 195–196).

[11.2] receiving a request, from the client, for a segment of the media content;

Petitioner contends, and we agree, that “DIS 23009-1 discloses that the HTTP server(s) receive a request, e.g., a ‘HTTP GET’ or ‘HTTP partial

GET’ request, from the DASH client for a segment of the media content.”
Pet. 49 (citing Ex. 1005 §§ 4.1, 4.4); *see id.* (citing Ex. 1005, Fig. 1;
Ex. 1003 ¶¶ 197–198).

[11.3] transmitting the media content to the client,

Petitioner contends, and we agree, that “DIS 23009-1 discloses that the HTTP server(s) transmit the media content to the DASH client in response to the ‘HTTP GET’ or ‘HTTP partial GET’ requests.” Pet. 49 (citing Ex. 1005 §§ 4.1, 4.4); *see id.* (citing Ex. 1005, Fig. 1; Ex. 1003 ¶¶ 199–200).

[11.4] wherein the MPD includes one or more periods,

[11.5] wherein each of the periods includes one or more adaptation sets,

[11.6] wherein each of the adaptation sets includes one or more representations,

[11.7] wherein each of the representations includes one or more segments,

[11.8] wherein the MPD, the period, the adaptation set, the representation or the segments includes one or more attributes or elements, and,

[11.9] wherein the adaptation set includes one or more attributes or elements that are common to each of the representations for that adaptation set.

Petitioner contends, and we agree, that “[c]laim elements [11.4]-[11.9] correspond to claim elements [1.3]-[1.8], respectively, and the citations and remarks for claim elements [1.3]-[1.8] apply equally to claim 11.” Pet. 50 (citing Pet. § XII.B.1.d-1.f).

Having reviewed the entirety of the record, we are persuaded that the cited evidence supports Petitioner’s contentions and that DIS 23009-1

discloses the subject matter of the preamble and each limitation of independent claim 11.

3. *Anticipation Challenge to Independent Claim 25*

[25.0] A method of providing media content performed by a server or multiple servers, comprising:

Petitioner cites its showing for claim 11 for teaching most of the elements of claim 25. Pet. 50 (citing Pet. § XII.B.2).

Petitioner contends that, to the extent the preamble is limiting “DIS 23009-1 discloses that one or more servers, *e.g.*, an ‘HTTP Server,’ performs a method of ‘delivery of media content from standard HTTP servers to HTTP clients.’” *Id.* at 49 (citing Ex. 1005 § 4.1).

We have reviewed the cited portions of DIS 23009-1 and are persuaded that they disclose the subject matter of the preamble. *Supra* n.7 (declining to determine whether preamble is limiting).

[25.1] transmitting a Media Presentation Description (MPD) of a media content to a client;

[25.2] receiving a request, from the client, for a segment of the media content;

[25.3] transmitting the media content to the client,”

According to Petitioner, “DIS 23009-1 discloses that the HTTP server(s) send a Media Presentation Description (MPD) of a media content to a DASH Client.” Pet. 49 (citing Ex. 1005 §§ 4.1, 4.2, 5.2.1). Petitioner contends, and we agree, that “the HTTP server(s) receive a request, *e.g.*, a ‘HTTP GET’ or ‘HTTP partial GET’ request, from the DASH client for a segment of the media content.” *Id.* (Ex. 1005 §§ 4.1, 4.4). Lastly, Petitioner contends, and we agree, that “DIS 23009-1 discloses that the HTTP server(s) transmit the media

content to the DASH client in response to the ‘HTTP GET’ or ‘HTTP partial GET’ requests.” *Id.* (citing Ex. 1005 §§ 4.1, 4.4).

[25.4] wherein the MPD includes one or more periods,

[24.5] wherein each of the periods includes one or more adaptation sets,

[25.6] wherein each of the adaptation sets includes one or more representations,

[25.7] wherein each of the representations includes one or more segments

Petitioner persuasively argues that, in its “Hierarchical data model” section, DIS 23009-1 discloses:

A Media Presentation as described in the **MPD** consists of
—A sequence of **one or more Periods** as described in 5.5.2.

—**Each Period contains one or more Adaptation Sets** as described

in 5.5.3. In case an Adaptation Set contains multiple media content

components, then each media content component is described individually as defined in 5.5.4.

—**Each Adaptation Set contains one or more Representations** as described in 5.5.5.

...

—**Each Representation consists of one or more Segments** described in 6.

Pet. 46–47 (citing Ex. 1005 § 5.5.1.1) (alteration in original).

[25.8] wherein information on a location, availability or property for the one or more segments in a representation is comprised in a SegmentTemplate element.

Petitioner contends, and we agree, that “DIS 23009-1 discloses that the Period or Adaptation Set levels may include a ‘SegmentTemplate’ element.” Pet. 50 (citing Ex. 1005 §§ 5.5.2.2 (Table 5), 5.5.3.2 (Table 6); *see also* Ex. 1005 § 5.5.9.4 (describing Segment template element)).

Petitioner further contends, and we agree, that “[t]he SegmentTemplate element provides Segment Information, which ‘provides information on the location, availability and properties of all Segments contained in one Representation.’” *Id.* (quoting Ex. 1005 § 5.5.9.1).

For the foregoing reasons, we are persuaded that Petitioner establishes anticipation of independent claim 25 by DIS 23009-1 by a preponderance of the evidence. *See infra* § IV.G.4 (discussing obviousness challenge).

4. *Anticipation Challenge to Dependent Claims 27 and 29*

Dependent claim 27 recites, *inter alia*, “wherein the SegmentTemplate element is included at an adaptation set level.” Petitioner contends, and we agree, that “DIS 23009-1 discloses that a SegmentTemplate element is included at an adaptation set level.” Pet. 51 (citing Ex. 1005 § 5.5.3.2 (Table 6) (“SegmentTemplate” element, which “specifies default Segment Template information”)).

Dependent claim 29 recites, *inter alia*, “wherein a duration attribute and a SegmentTimeline element are provided.” Petitioner contends, and we agree, that “DIS 23009-1 discloses a SegmentTimeline element and that a mandatory duration attribute (‘@d’) is included in the SegmentTimeline element.” *Id.* at 51 (citing Ex. 1005 § 5.5.9.6.1).

For the foregoing reasons, we are persuaded that Petitioner establishes anticipation of claims 27 and 29 by a preponderance of the evidence.

5. *Obviousness of the Challenged Claims*

With respect to Petitioner’s obviousness challenge applying DIS 23009-1, the Federal Circuit has held that “a disclosure that anticipates under § 102 also renders the claim invalid under § 103, for anticipation is the epitome of obviousness.” *Connell v. Sears, Roebuck & Co.*, 722 F.2d 1542, 1548 (Fed. Cir. 1983) (quotation marks omitted). Our determination that

Petitioner establishes anticipation of claims 1, 11, 25, 27, and 29 by DIS 23009-1 by a preponderance of the evidence informs our determination here that Petitioner establishes claims 1, 11, 25, 27, and 29 would also have been obvious in view of DIS 23009-1 by a preponderance of the evidence. *See* Pet. 51–52.

G. Challenges Based on DIS 23001-6 and 3GPP 26.247

We do not reach the challenges applying DIS 23001-6 or the challenges applying 3GPP 26.247 because we determine that each of the challenged claims is anticipated by and obvious in view of DIS 23009-1. *Supra* § III.F. *See SAS Inst. Inc. v. Iancu*, 138 S. Ct. 1348, 1359 (2018) (holding that a petitioner “is entitled to a final written decision addressing all of the claims it has challenged”); *Bos. Sci. Scimed, Inc. v. Cook Grp. Inc.*, 809 F. App’x 984, 990 (Fed. Cir. 2020) (non-precedential) (recognizing that the “Board need not address issues that are not necessary to the resolution of the proceeding” and, thus, agreeing that the Board has “discretion to decline to decide additional instituted grounds once the petitioner has prevailed on all its challenged claims”).

IV. MOTION TO AMEND

A. Statutory and Regulatory Requirements

Patent Owner proposes substitute claims 31–35 in its Revised Contingent Motion to Amend to replace challenged, original claims 1, 11, 25, 27, and 29 in the event these claims are found unpatentable. Rev. MTA i. We have determined that original claims 1, 11, 25, 27, and 29 of the ’414 patent have been shown to be unpatentable by a preponderance of the evidence; therefore, we proceed to address Patent Owner’s Revised Contingent Motion to Amend.

Before considering the patentability of any proposed substitute claims,

we first determine whether the Revised Contingent Motion to Amend meets the statutory and regulatory requirements set forth in 35 U.S.C. § 316(d) and 37 C.F.R. § 42.121. As part of this showing, Patent Owner bears the burden of persuasion to show, by a preponderance of the evidence, that: (1) the amendment responds to a ground of unpatentability involved in the trial; (2) the amendment does not seek to enlarge the scope of the claims of the patent or introduce new subject matter; (3) the amendment proposes a reasonable number of substitute claims; and (4) the proposed claims are supported in the original disclosure. 37 C.F.R. § 42.121(d)(1); *Lectrosonics, Inc. v. Zaxcom, Inc.*, Case IPR 2018-01129 (PTAB Feb. 25, 2019) (Paper 15) (precedential). Although Patent Owner must demonstrate that the statutory and regulatory requirements for a motion to amend are met, Petitioner “bears the burden of persuasion to show, by a preponderance of the evidence, that any proposed substitute claims are unpatentable.” 37 C.F.R. § 42.121(d)(2); *Lectrosonics*, Paper 15 at 4 (citing *Aqua Prods. Inc. v. Matal*, 872 F.3d 1290 (Fed. Cir. 2017); *Bosch Auto. Serv. Sols. LLC v. Iancu*, 878 F.3d 1027 (Fed. Cir. 2017)).

*1. Requirements Under 35 U.S.C. § 316(d) and
37 C.F.R. § 42.121*

Patent Owner proposes a one-for-one substitution of challenged, original claims 1, 11, 25, 27, and 29 and therefore meets the requirement for a reasonable number of proposed substitute claims. Rev. MTA 2–3; 37 C.F.R. § 42.121(a)(3); *see also Lectrosonics*, Paper 15 at 4 (“There is a rebuttable presumption that a reasonable number of substitute claims per challenged claim is one (1) substitute claim.”). In particular, claims 31–35 are proposed to replace claims 1, 11, 25, 27, and 29, respectively.

Patent Owner also proposes narrowing limitations in proposed substitute claims. Rev. MTA App’x A. A patent owner bears the burden of persuasion to show by a preponderance of the evidence that a motion to amend does not seek to enlarge the scope of the claims of the patent. 37 C.F.R. §§ 42.121(a)(2)(ii), 42.121(d)(1) (2021). Patent Owner argues that the proposed substitute claims do not enlarge the scope of the challenged, original claims because proposed substitute claims 31–35 maintain the “preexisting limitations” of claims 1, 11, 25, 27, and 29 and add additional limitations. Rev. MTA 4. Petitioner does not present any arguments regarding enlarging the scope of the claims. *See generally* Opp. Rev. MTA. We are persuaded by Patent Owner’s arguments that none of claims 31–35 enlarge the scope of the original claims as required by statute, 35 U.S.C. § 316(d)(3) and regulation, 37 C.F.R. § 42.121(a)(2)(ii)).

We are further persuaded that narrowing limitations in the revised, proposed substitute claims are in direct response to the grounds of unpatentability involved in this trial, i.e., those based on DIS 23001-6, DIS 23009-1, and 3GPP TS 26.247.

We next consider whether Patent Owner has shown that the revised, proposed substitute claims are supported by the original disclosure. Patent Owner argues that “[e]ach element of the substitute claims is supported by the original disclosures and adds no new matter,” and more particularly, that “[e]ach element of Substitute Claims 31 through 35 are supported at least by U.S. Patent Application No. 14/004,644 ([‘the ’644 application,’] Ex. 2004) to which the ’414 patent claims priority.” Rev. MTA 4 (citing Ex. 1001, code (63)). Patent Owner further indicates that “[c]itations for support are also made to the Patent Application as originally filed (Ex. 2005).” *Id.*

Patent Owner identifies corresponding support for each limitation in bullet point format. *Id.* at 5–11.

2. *Revised, Proposed Substitute Claims 31, 32, and 35*

Petitioner contends that “Patent Owner has not identified sufficient written description support for ‘wherein the user characteristic information includes a usedWith attribute and an equivalentTo attribute,’ as required by claims 31, 32, and 35, claim elements [31.11], [32.12], and [35.7], respectively.” Opp. Rev. MTA 3. According to Petitioner, Patent Owner’s identification of paragraphs 255–257 and Table 13 of Application No. 14/004,644 (“the ’644 application,” Ex. 2004), as well as paragraphs 255–257, Table 13 of Application No. 16/229,092 (“the ’092 application,” Ex. 2005) is insufficient to provide written description support for the above-noted claim limitations. Opp. Rev. MTA 3 (citing Paper 26, 8, 11). Petitioner contends that “[t]he cited portions, however, merely describe the ‘usedWith’ and ‘equivalentTo’ attributes, and contain no disclosure that the claimed ‘*user characteristic information*’ includes the usedWith attribute and the equivalentTo attribute.” *Id.* (citing Ex. 1094 ¶¶ 29–30). Dr. Bestavros testifies that “there is no identification as to what portion or portions of the MPD file correspond to ‘user characteristic information,’ or explanation as to how those portions of the MPD file include the usedWith attribute and an equivalentTo attribute.” *Id.* (Ex. 1094 ¶ 30). Petitioner also contends that “[t]he Korean Priority Application . . . contains a similar description of the ‘usedWith’ and ‘equivalentTo’ attributes, and also does not provide sufficient written description support.” *Id.* (citing Ex. 1066, 11 (Table 2); Ex. 1094 ¶ 29).

Claim limitations [31.11], [32.12], and [35.7] recite the disputed limitation “wherein the user characteristic information includes the

usedWith attribute and the equivalentTo attribute.” Among the cited portions in paragraphs 255 through 257 as well as paragraph 254 of the ’644 application is the disclosure that, “[t]o describe the relationship between representations, the elements ‘Group’, ‘AdaptationSet’, ‘Representation’ or ‘SubRepresentation’ may further include” the usedWith attribute and the equivalentTo attribute, as well as the XML syntax for the elements.

Ex. 2004 ¶¶ 254–257, Table 13; *see also* Ex. 2005 ¶¶ 254–257, Table 13 (substantially identical disclosure as to the relationship between representations and usedWith and equivalentTo attributes).

In its Reply, Patent Owner responds by citing additional portions of the ’644 application arguing that

[t]he claimed “user characteristic information” thus refers generally to “***additional configuration information***” that is “used to select representations based on a user characteristic.” For example, accessibility features of a representation (i.e., “user characteristic information”) may be used to support disabled users by selecting an appropriate representation. The specification then describes the attributes claimed in [31.11]—usedWith and equivalentTo—“hereinafter” and explains that they “may be useful for accessibility.”

Reply Rev. Opp. 1 (Ex. 2004 ¶¶ 232, 234, 253).

The newly-cited portion in paragraph 232 does not describe additional configuration information nor user characteristic information. Instead, it describes “an additional configuration to select a representation based on a user characteristics and terminal characteristics.” Ex. 2004 ¶ 232. It is unclear from Patent Owner’s argument whether Patent Owner intends for the claimed “user characteristic information” to include or refer to additional configuration information, accessibility features of a representation, or both. Reply Rev. Opp. 1 (citing Ex. 2004 ¶¶ 232, 234, 253). In any event, merely

because paragraph 253 uses the term “[h]ereinafter” before it discloses “two simple attributes [] for the above-described purpose”—and not even in close proximity to the “user characteristics” and “additional configuration” in paragraph 232—is not sufficient to provide support for “the user characteristic information includ[ing] the usedWith attribute and the equivalentTo attribute,” as recited in limitations [31.11], [32.12], and [35.7]. None of the cited portions (i.e., Ex. 2004 ¶¶ 232, 234, 253, 255–257, Table 13; Ex. 2005 ¶¶ 254–256, Table 13) indicate a sufficient connection or relationship, or the claimed inclusive relationship, between user characteristic information and the usedWith and equivalentTo attributes. *Contra* Reply Opp. Rev. 1 (Patent Owner arguing that the cited disclosures “clearly show this relationship between the claimed attributes and user characteristic information”).

For the foregoing reasons, we determine that claims 31, 32, and 35 do not have sufficient written description support in the ’644 application and the ’092 application, either individually or collectively, and as such, contain new matter.

B. Patentability of the Proposed Substitute Claims

Patent Owner and Petitioner address the patentability of the revised, proposed substitute claims with respect to the following grounds. Petitioner supports its challenges to the revised, proposed substitute claims with the Supplemental Declaration (Ex. 1093) and Second Supplemental Declaration (Ex. 1094) of Dr. Bestavros.

Ground	Claim(s) Challenged	35 U.S.C. §	Reference(s)/Basis
1	31–35	103(a)	DIS 23001-6,

Ground	Claim(s) Challenged	35 U.S.C. §	Reference(s)/Basis
			M20060 ⁸
2	31–35	103(a)	DIS 23009-1, M20060
3	33, 35	103(a)	DIS 23001-6, OIPF-HAS ⁹
4	33, 35	103(a)	DIS 23001-6, OIPF-Liaison ¹⁰
5	33, 35	103(a)	DIS 23009-1, OIPF-HAS
6	33, 35	103(a)	DIS 23001-6, OIPF-Liaison
7	31, 32, 34,	103(a)	DIS 23001-6, OIPF-HAS, Browne
8	37, 41, 43, 45	103(a)	DIS 23001-6, OIPF-Liaison, Browne
9	37, 41, 43, 45	103(a)	DIS 23009-1, OIPF-HAS, Browne ¹¹
10	37, 41, 43, 45	103(a)	DIS 23009-1, OIPF-Liaison, Browne

1. Prior Art Status of M20060

Patent Owner attempts to disqualify M20060 from being applied as prior art under 35 U.S.C. § 102(a) by arguing that the reference was not authored by “another” within the meaning of the statute. “Another” means other than applicants, *In re Land*, 368 F.2d 866, 876 (CCPA 1966), in other words, a different inventive entity. The inventive entity is different if not all inventors are the same. The fact that the ’414 patent and M20060 have two

⁸ ISO/IEC JTC1/SC29/WG11, Coding of Moving Pictures and Audio, Input Contribution MPEG2011/M20060, Mar. 2011 (Ex. 1097, “M20060”).

⁹ Open IPTV Forum (OIPF), HTTP Adaptive Streaming Specification, Release 2, Sept. 2010 (Ex. 1095, “OIPF-HAS”).

¹⁰ OIPF Liaison Letter to 3GPP SA4, June 2010 (Ex. 1096, “OIPF-Liaison”).

¹¹ Browne, High Definition Postproduction, Editing and Delivering HD Video, Focal Press, 2007 (Ex. 1092, “Browne”).

inventors in common is immaterial. *See Ex parte DesOrmeaux*, 25 USPQ2d 2040 (BPAI 1992) (The examiner made a pre-AIA 35 U.S.C. § 102(e) rejection based on an issued U.S. patent to three inventors. The rejected application was a continuation-in-part of the issued parent with an extra inventor. The Board found that the patent was "by another" and thus could be used in a pre-AIA 35 U.S.C. 102(e)/103 rejection of the application.).

In its Reply to Petitioner's Opposition, Patent Owner argues that M20060 is authored by the same inventive entity as that of the '830 patent and '414 patent, i.e., Mr. Lee and Mr. Thang.¹² Reply Opp. Rev. 5. That is, Patent Owner takes the position that the other four authors listed on the front page of M20060—Jung Won Kang, Seong-Jun Bae, Soon-heung Jung, Sang Taick Park—did not contribute to the disclosures cited by Petitioner to teach or suggest the subject matter of the limitations proposed in the revised, proposed substitute claims. *See id.* For these reasons, Patent Owner argues that M20060 is not "by another" within the meaning of § 102(a) and is not prior art to either the '830 patent or the '414 patent. *Id.* To support its argument that Mr. Lee and Mr. Thang are the sole inventors of the disclosures cited in M20060, Patent Owner submitted Declarations under 37 C.F.R. § 1.132 for Mr. Thang (Ex. 2007) and Mr. Lee (Ex. 2006), although Mr. Thang's Declaration was withdrawn. Paper 43 (Patent Owner's Notice of Withdrawal of Exhibit 2007).

In our Order Granting Petitioner's Motion to Exclude, we were persuaded by Petitioner to expunge Mr. Lee's Declaration as Mr. Lee was not made available for cross-examination. Paper 48, 18.

¹² M20060 lists six people on its front page—Jung Won Kang, Seong-Jun Bae, Soon-heung Jung, Sang Taick Park, Truong Cong Thang, and Jin Young Lee.

As neither the Lee Declaration nor the Thang Declaration remain in the record to support Patent Owner’s “inventive entity” argument, Patent Owner’s argument is not supported by underlying evidence. Accordingly, we determine that Patent Owner’s argument regarding the “inventive entity” of M20060 is unavailing. In view of the foregoing, Patent Owner’s attempt to disqualify M20060 from being applied as prior art under 35 U.S.C. § 102(a) is unsuccessful.

2. *Patentability of Revised, Proposed Substitute Claim 33*

Petitioner expressly sets forth a detailed challenge to revised, proposed substitute claim 31, and contends that revised, proposed substitute claims 32–35 recite duplicative features. We apply Petitioner’s detailed analysis for revised, proposed substitute claim 31 to our analysis of revised, proposed substitute claim 33. The correspondence of features of claim 31 to claim 33 is set forth in the table below:

Revised, Proposed Substitute Claim 31	Revised, Proposed Substitute Claim 33
[31.11] wherein the <i>user characteristic information</i> includes a usedWith attribute and an equivalentTo attribute	[33.9] wherein the <i>MPD</i> includes a usedWith attribute and an equivalentTo attribute
[31.12] wherein the usedWith attribute indicates a first audio representation which is used with a video representation	[33.10]
[31.13] wherein the first audio representation is a representation for audio description	[33.11]
[31.14] wherein the equivalentTo attribute indicates a subtitle representation which is used instead of a second audio representation	[33.12]
[31.15] wherein the subtitle representation is a timed text media component for the second audio representation	[33.13]

[33.9] wherein the MPD includes a usedWith attribute and an equivalentTo attribute,

With respect to the similar, but not same, limitation in revised, proposed substitute claim 31, “wherein the *user characteristic information* includes a usedWith attribute and an equivalentTo attribute,” Petitioner argued that Patent Owner did not identify sufficient written description support and thus, that the limitation constituted new matter. *Supra* § IV.A.2.

With respect to limitation 33.9, Dr. Bestavros persuasively points to Section 3 of M20060 that concerns metadata describing relationship(s) between representations. In its Section 3, M20060 discloses a @usedWith attribute and an @equivalentTo attribute. Ex. 1097 § 3, 4.¹³ Petitioner argues it would have been obvious to include M20060’s “additional metadata (*e.g.*, the usedWith [and] equivalentTo . . . attributes)” in “the MPDs in DIS-23001-6 or DIS 23009-1” because these attributes help “both users and clients to select appropriate representations” by “describing relationships [among] representations.” Opp. Rev. MTA 7. Petitioner also argues, and we agree, that the inclusion of the additional metadata, usedWith and equivalentTo attributes, into the MPDs in DIS 23001-6 and DIS 23009-1 would “simply . . . have been a matter of adding additional metadata to the MPD XML schemas described in DIS 23001-6 or DIS 23009-1.” *Id.* We are persuaded by this argument for reasons further discussed in Section IV.B.2.a. As such, in the combination of DIS23009-1 and M20060 teaches an MPD that includes the @usedWith and @equivalentTo attributes.

Separate and independent from Petitioner’s contentions—which are sufficiently persuasive on their own—we note that M20060 depicts the

¹³ Pincites to Exhibit 1097 take the form “Section Number, Page Number.”

@usedWith and @equivalentTo attributes as part of, for example, a representation group. As set forth above with respect to the originally challenged claims, DIS 23009-1 discloses DASH in which the representation element is part of an adaptation set element, which is part of an MPD. For this reason too, the combination of DIS23009-1 and M20060 teaches an MPD that includes the @usedWith and @equivalentTo attributes.

[33.10] wherein the usedWith attribute indicates a first audio representation which is used with a video representation,

[33.11] wherein the first audio representation is a representation for audio description,

Petitioner contends, and we agree, that “M20060 discloses that an audio description (an audio representation) is used with a video component (a video representation), where the audio representation is a representation for audio description.” Opp. Rev MTA 8–9 (quoting Ex. 1097 § 3, 4 (usedWith indicates “a representation group for audio description should be used with a certain representation group of video component.”)).

[33.12] wherein the equivalentTo attribute indicates a subtitle representation which is used instead of a second audio representation, and

[33.13] wherein the subtitle representation is a timed text media component for the second audio representation.

Petitioner contends, and we agree, that “M20060 discloses a subtitle (*i.e.*, a subtitle representation) which is used instead of an audio component (*i.e.*, a second audio representation), and the subtitle is a timed text media component for the second audio representation.” Opp. Rev. MTA 9 (citing Ex. 1097 § 3, 4; Ex. 1004 § F.1, 72; Ex. 1005 § G.1, 115). M20060 discloses, with respect to the @equivalentTo attribute, that “a representation

group for subtitle could be used instead of a certain representation group of audio component.” Ex. 1097 §§ 3, 4.

a. Rationale for Combining DIS 23009-1 and M20060

Petitioner persuasively contends that “DIS 23001-6 or DIS 23009-1 in combination with M20060 discloses each new claim element recited in the new limitations of Substitute Claims 31-35” and that, “[a] POSA would have been motivated to add the additional ‘metadata’ described in M20060 to the MPDs described in DIS 23001-6 or DIS 23009-1 in order to enable the client to choose the most suitable version of media content among alternative versions of media content.” Opp. Rev. MTA 7 (citing Ex. 1094 ¶ 33).

Petitioner further persuasively contends that

M20060 describes that the additional metadata (*e.g.*, the extended accessibility element and the usedWith, equivalentTo, bitDepth, minBitDepth, and maxBitDepth attributes) helps “both users and clients to select appropriate representations” by, for example, “1) supporting accessibility, 2) describing relationships of representations, and 3) describing media’s bit depth.”

Moreover, a POSA would have had an expectation of success in modifying the MPDs in DIS 23001-6 or DIS 23009-1 to include the additional metadata described below because it simply would have been a matter of adding additional metadata to the MPD XML schemas described in DIS 23001-6 or DIS 23009-1.

Id. (citing Ex. 1094 ¶ 34; Ex. 1097, 1).

b. Patent Owner’s Arguments

Patent Owner’s arguments mainly concern grounds 3 through 10 and the ground based on OIPF-HAS, OIPF-Liason, and Browne. *See generally* Reply Opp. Rev. Other than disputing the prior art status of M20060, Patent Owner makes no other arguments regarding the substance of this reference.

Id. We address in the next paragraph Patent Owner’s argument that

“Petitioner is wrong that DIS discloses the usedWith or equivalentTo attributes, which are recited by each of the proposed claims” and thus, that “Petitioner’s grounds *all* fail” because we address Petitioner’s challenge based on of the DIS references, DIS 23009-1. *Id.* at 2.

More particularly, Patent Owner argues that “‘dependencyID’ and ‘group’ are already described in the ’414 specification itself, and do not ‘correspond to’ the usedWith and equivalentTo attributes of the proposed claims.” *Id.* at 8. Patent Owner takes the position that “[a]s dependencyID and usedWith are separate and distinct attributes, Petitioner is [] wrong that dependencyID ‘corresponds to’ usedWith or has the ‘same function and effect’ as usedWith.” *Id.* at 3 (citing Opp. Rev. MTA 12). Patent Owner further takes the position that “Petitioner’s argument regarding the ‘@group’ attribute in DIS similarly fails” because “[t]he ’414 specification itself teaches a ‘group’ attribute that is distinct from equivalentTo.” *Id.* According to Patent Owner, in contrast to a group attribute, “equivalentTo provides accessibility information to a disabled person that a specific *subtitle* (text) representation is used *instead of* a specific *audio* representation.” *Id.* (citing claim limitation 31.14; Ex. 2004 ¶¶ 253–256, Table 12).

As discussed above with respect to revised, proposed substitute claim limitations 33.9 through 33.13, Petitioner cites the @usedWith and @equivalentTo attributes disclosed in M20060 to teach the claimed “usedWith” and “equivalentTo” attributes. Opp Rev. MTA 7–9. Petitioner does not present its alternative position—that the “dependencyID” attribute teaches the claimed “usedWith” attribute and the “group” attribute teaches the claimed “equivalentTo” attribute—with respect to ground 2 applying

DIS 23009-1 and M20060. *See e.g., id.* at 12 (discussing Petitioner's alternative position with respect to grounds 3 through 6).

c. Summary as to Revised, Proposed Substitute Claim 33

As set forth above, the preamble and limitations 33.1 through 33.8 of revised, proposed substitute claim 33 correspond to the preamble (i.e., 25.0) and limitations 25.1 through 25.8 of original claim 25. We are persuaded that the subject matter of the preamble and limitations 33.1 through 33.8 are disclosed by DIS 23009-1 for the reasons set forth in Section III.F.3 and rendered obvious by DIS 23009-1 for the reasons set forth in Section III.F.5. As such, we are persuaded that the preamble and limitations 33.1 through 33.8 of revised, proposed substitute claim 33 are rendered obvious by the combination of DIS 23009-1 and M20060.

We have reviewed Petitioner's contentions, Patent Owner's arguments, and the cited evidence and we are persuaded that the combination of DIS 23009-1 and M20060 teaches each of limitations 33.9 through 33.13. We are also persuaded that Petitioner's rationale for combining DIS 23009-1 with M20060 is supported by sufficient rational underpinnings and that a POSITA would have had a reasonable expectation of success in making the combination.

In view of the above, Petitioner establishes unpatentability of revised, proposed substitute claim 33 over the combination of DIS 23009-1 and M20060 by a preponderance of the evidence.

3. Patentability of Revised, Proposed Substitute Claim 34

Revised, proposed substitute claim 34 corresponds to original claim 27 and depends from revised, proposed substitute claim 33, which corresponds to original claim 25. Revised, proposed substitute claim 34

eliminates the limitation of “wherein the SegmentTemplate element is included at an adaptation set level.”

As set forth above, Petitioner expressly sets forth a detailed challenge to revised, proposed substitute claim 31, and contends that revised, proposed substitute claims 32–35 recite duplicative features. We apply Petitioner’s detailed analysis for revised, proposed substitute claim 31 to our analysis of revised, proposed substitute claim 34. The correspondence of features of claim 31 to claim 34 is set forth in the table below.

Revised, Proposed Substitute Claim 31	Revised, Proposed Substitute Claim 34
	[34.1] wherein the MPD further includes a bit depth attribute used to select different representations for clients having different display bit depths and the bit depth attribute indicates a number of bits used to represent
[31.16] wherein the representation includes a bit depth attribute	[34.2]
[31.17] wherein when a value of a bit depth varies in different video pictures of the representation, a value of the bit depth attribute indicates a maximum value of the bit depth	[34.3]
[31.18] wherein the adaptation set includes a minBitDepth attribute and a maxBitDepth attribute	[34.4]
[31.19] wherein the minBitDepth attribute indicates a minimum bit depth value in all representations in the adaptation set and the maxBitDepth attribute indicates a maximum bit depth value in all representations in the	[34.5]

adaptation set.	
-----------------	--

[34.0] The method of claim 33,

[34.1] wherein the MPD further includes a bit depth attribute used to select different representations for clients having different display bit depths and the bit depth attribute indicates a number of bits used to represent a luma or chroma sample of visual content,

[34.2] wherein the representation includes the bit depth attribute,

[34.3] wherein when a value of a bit depth varies in different video pictures of the representation, a value of the bit depth attribute indicates a maximum value of the bit depth,

Dr. Bestavros quotes the following passage from M20060:

Bit depth is the number of bits used to represent a luma/chroma sample of visual content. In practice, visual content can be encoded with different bit depths (e.g. some profiles of AVC allow bit depth range from 8bits to 16bits). On the other hand, different terminal displays may have different bit depths as well. To select different representations for terminals having different display bit depths, we propose the following attributes for representation and representation group.

Ex. 1094, 24–25 (citing Ex. 1097 § 4, 5). M20060 supports Petitioner’s position and Dr. Bestavros’s testimony because it sets forth the bitDepth attribute in Table 3 and discloses that the attribute “indicates the number of bits used to represent a luma/chroma sample of visual content. If the bit depth varies (e.g. with different video pictures), the value of this attribute shall be the maximum value of bit depths.” *Id.* at 25 (citing Ex. 1097 § 4, 5).

[34.4] wherein the adaptation set includes a minBitDepth attribute and a maxBitDepth attribute, and

[34.5] wherein the minBitDepth attribute indicates a minimum bit depth value in all representations in the adaptation set and

the maxBitDepth attribute indicates a maximum bit depth value in all representations in the adaptation set.

Dr. Bestavros persuasively points to the “minBitDepth attribute” in Table 4 which is the ‘Minimum bitDepth value in all Representations in this Group.’” Ex. 1094, 22 (citing Ex. 1097 § 4, 6). Dr. Bestavros also persuasively points to the “maxBitDepth attribute” in Table 4 which is the “Maximum bitDepth value in all Representations in this Group.” *Id.* at 23 (citing Ex. 1097 § 4, 6).

We have reviewed Petitioner’s contentions, Patent Owner’s arguments, and the cited evidence and we are persuaded that the combination of DIS 23009-1 and M20060 teaches the subject matter of the preamble and each of limitations 34.1 through 34.5 for the reasons set forth above. Petitioner relies on the same rationale for combining set forth with respect to revised, proposed substitute claim 33 and as such, for the same reasons set forth above, we are persuaded that Petitioner’s rationale for combining DIS 23009-1 with M20060 is sufficiently supported by sufficient rational underpinnings and that a POSITA would have had a reasonable expectation of success in making the combination.

In view of the above, Petitioner establishes unpatentability of revised, proposed substitute claim 34 over the combination of DIS 23009-1 and M20060 by a preponderance of the evidence.

C. Remaining Challenges to the Revised, Proposed Substitute Claims

We do not reach grounds 1 and 3–10 because we determine that revised, proposed substitute claims 31–35 are shown to be unpatentable in ground 2, as discussed in detail above. *Supra* § III.G (citing *SAS*, 138 S. Ct. at 1348; *Boston Sci. Scimed*, Nos. 2019-1594, -1604, -1605, 2020 WL 2071962, at *4 (non-precedential)). We further do not consider Petitioner’s

challenges to the revised, proposed substitute claims under 35 U.S.C. § 101, nor Patent Owner's responses to the same.

D. Patent Owner's Remaining Arguments

Patent Owner presents arguments with respect to grounds 1 and 3–10. Reply Opp. Rev. 5–10. We do not reach these arguments as we determine that the revised, proposed substitute claims are unpatentable over ground 2, the challenge applying DIS 23009-1 in view of M20060.

V. CONCLUSION¹⁴

For the foregoing reasons, we conclude that Petitioner has satisfied its burden of establishing, by a preponderance of the evidence, that claims 1, 11, 25, 27, and 29 of the '414 patent are unpatentable as follows:

Claim(s) Challenged	35 U.S.C. §	Reference(s)/ Basis¹⁵	Claims Shown Unpatentable	Claims Not Shown Unpatentable
	103(a)	DIS 23001-6		
	102(a)	DIS 23009-1	1, 11, 25, 27, 29	
	103(a)	DIS 23009-1	1, 11, 25, 27, 29	
	102(a)	3GPP TS 26.247		

¹⁴ Should Patent Owner wish to pursue amendment of the challenged claims in a reissue or reexamination proceeding subsequent to the issuance of this decision, we draw Patent Owner's attention to the April 2019 *Notice Regarding Options for Amendments by Patent Owner Through Reissue or Reexamination During a Pending AIA Trial Proceeding*. See 84 Fed. Reg. 16,654 (Apr. 22, 2019). If Patent Owner chooses to file a reissue application or a request for reexamination of the challenged patent, we remind Patent Owner of its continuing obligation to notify the Board of any such related matters in updated mandatory notices. See 37 C.F.R. § 42.8(a)(3), (b)(2).

¹⁵ In view of our determination that claims 1, 11, 25, 27, and 29 are anticipated by and rendered obvious over DIS 23009-1, we do not reach the grounds for which the last two columns of this table are blank (i.e., grounds applying DIS 23001-6 and/or 3GPP TS 26.247).

Claim(s) Challenged	35 U.S.C. §	Reference(s)/ Basis¹⁵	Claims Shown Unpatentable	Claims Not Shown Unpatentable
	103(a)	3GPP TS 26.247		
Overall Outcome			1, 11, 25, 27, 29	

We further conclude that Patent Owner has *not* satisfied its burdens on a motion to amend, and Petitioner has sufficiently established by a preponderance of the evidence that proposed substitute claims 31–35 are unpatentable. Thus, we deny the Revised Contingent Motion to Amend as follows:

Motion to Amend Outcome	Claims
Original Claims Cancelled by Amendment	
Substitute Claims Proposed in Amendment	31–35
Substitute Claims: Motion to Amend Granted	
Substitute Claims: Motion to Amend Denied	31–35
Substitute Claims: Not Reached	

VI. ORDER

In consideration of the foregoing, it is hereby:

ORDERED that Petitioner establishes by a preponderance of the evidence that claims 1, 11, 25, 27, and 29 of the '414 patent are unpatentable;

FURTHER ORDERED that Patent Owner's Revised Contingent Motion to Amend is *denied*; and

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

IPR2020-01689
Patent 10,313,414 B2

PETITIONER:

Brian Rosenbloom
Jennifer Maisel
ROTHWELL, FIGG, ERNST & MANBECK P.C.
Brosenbloom@rfem.com
jmaisel@rfem.com

PATENT OWNER:

Timothy Devlin
Leonard Monfredo
Joel Glazer
DEVLIN LAW FIRM LLC
Td-ptab@devlinlawfirm.com
Imonfredo@devlinlawfirm.com
jglazer@devlinlawfirm.com