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BEFORE THE PATENT TRIAL AND APPEAL BOARD

Ex parte YE-KUI WANG and YING CHEN

Appeal 2018-007630
Application 14/137,358
Technology Center 2400

Before JOHN A. JEFFERY, JOHN A. EVANS, and JASON M. REPKO, *Administrative Patent Judges.*

REPKO, *Administrative Patent Judge.*

DECISION ON APPEAL

STATEMENT OF THE CASE

Under 35 U.S.C. § 134(a), Appellant[1] appeals from the Examiner's decision to reject claims 1, 3–9, 11–17, 19, 20, 22, 23, 25–31, 33–39, 41, 42, and 44–54. We have jurisdiction under 35 U.S.C. § 6(b).

We REVERSE.

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[1] We use the word *Appellant* to refer to *applicant* as defined in 37 C.F.R. § 1.42(a). Appellant identifies the real party in interest as "QUALCOMM Incorporated, of San Diego, California, USA." Appeal Br. 3.

CLAIMED SUBJECT MATTER

The claims generally relate to processing video streams containing multiple coded views. Spec. ¶ 2. In particular, the file format for Multi View Coding (MVC) is part of the Advanced Video Coding (AVC) file format. *Id.* ¶ 48. MVC could be used to store video streams containing multiple coded views plus depth (MVC+D). *Id.* But this solution is limiting because it lacks a way to indicate whether certain information is present. *Id.* Appellant's invention solves this problem by defining new boxes and sample entry types. *Id.* ¶ 49.

Claims 1, 9, 17, 20, 23, 31, 39, and 42 are independent. Claim 1 is reproduced below.

> 1. A method of processing video data, the method comprising:
>
> parsing a track of multiview video data, wherein the track includes at least one depth view; and
>
> parsing a depth resolution box from a configuration box within a sample entry to determine a spatial resolution associated with the depth view, wherein decoding the spatial resolution does not require parsing of a sequence parameter set of the depth view.

Appeal Br. 27.[2]

[2] Throughout this opinion, we refer to the Final Office Action ("Final"), mailed August 30, 2017; the Advisory Action ("Advisory"), mailed November 9, 2017; the Appeal Brief ("Appeal Br."), filed February 20, 2018; the Examiner's Answer ("Ans."), mailed June 29, 2018, which appears to be similar to the one mailed on May 15, 2018 in all respects relevant to this decision; and the Reply Brief ("Reply Br."), filed July 12, 2018.

REFERENCES

The Examiner relies on the following prior art.

Name	Reference	Date
Asoh	US 2005/0235221 A1	Oct. 20, 2005
Kim	US 2011/0002594 A1	Jan. 6, 2011
Alshina	US 2011/0243233 A1	Oct. 6, 2011
Hannuksela	US 2013/0235152 A1	Sept. 12, 2013

REJECTIONS

Claims 1, 3–6, 8, 9, 11–14, 16, 17, 19, 20, 22, 23, 25–28, 30, 31, 33–36, 38, 39, 41, 42, and 44–53 stand rejected under 35 U.S.C. § 103(a) as unpatentable over Hannuksela and Kim. Final 3–8; Ans. 4–9.

Claims 7, 15, 29, and 37 stand rejected under 35 U.S.C. § 103(a) as unpatentable over Hannuksela, Kim, and Alshina. Final 9; Ans. 10.

Claim 54 stands rejected under 35 U.S.C. § 103(a) as unpatentable over Hannuksela, Kim, and Asoh. Final 9–10; Ans. 10–11.

THE OBVIOUSNESS REJECTION OVER HANNUKSELA AND KIM

The Examiner's Rejection

In rejecting claim 1, the Examiner finds that Hannuksela teaches or suggests all limitations except for parsing a depth-resolution box from a configuration box within a sample entry. Ans. 4–5. In concluding that claim 1's subject matter would have been obvious, the Examiner finds that Kim teaches or suggests the recited parsing step. *Id.* at 5 (citing Kim ¶¶ 81, 85).

In particular, the Examiner finds that Kim's file parser parses depth-map bit streams, which contain depth resolution. *Id.* Also, the Examiner finds that Kim's media-file parser recognizes a depth-map track, which implies that it parsed the depth map. *Id.*

Appellant's Arguments

Appellant argues that Kim lacks a depth-resolution box or a configuration box. Appeal Br. 11. According to Appellant, the Examiner has not shown that parsing a bit-stream implies that the parsed information is found in a depth-resolution box or a configuration box. *Id.* Appellant argues that Kim does not describe how the spatial resolution is determined. Reply Br. 6.

Issue

Under § 103, has the Examiner erred in rejecting claim 1 by finding that Kim parses a depth-resolution box from a configuration box within a sample entry, as recited in claim 1?

Analysis

The issue here turns on the meaning of *depth resolution box* and *configuration box*.

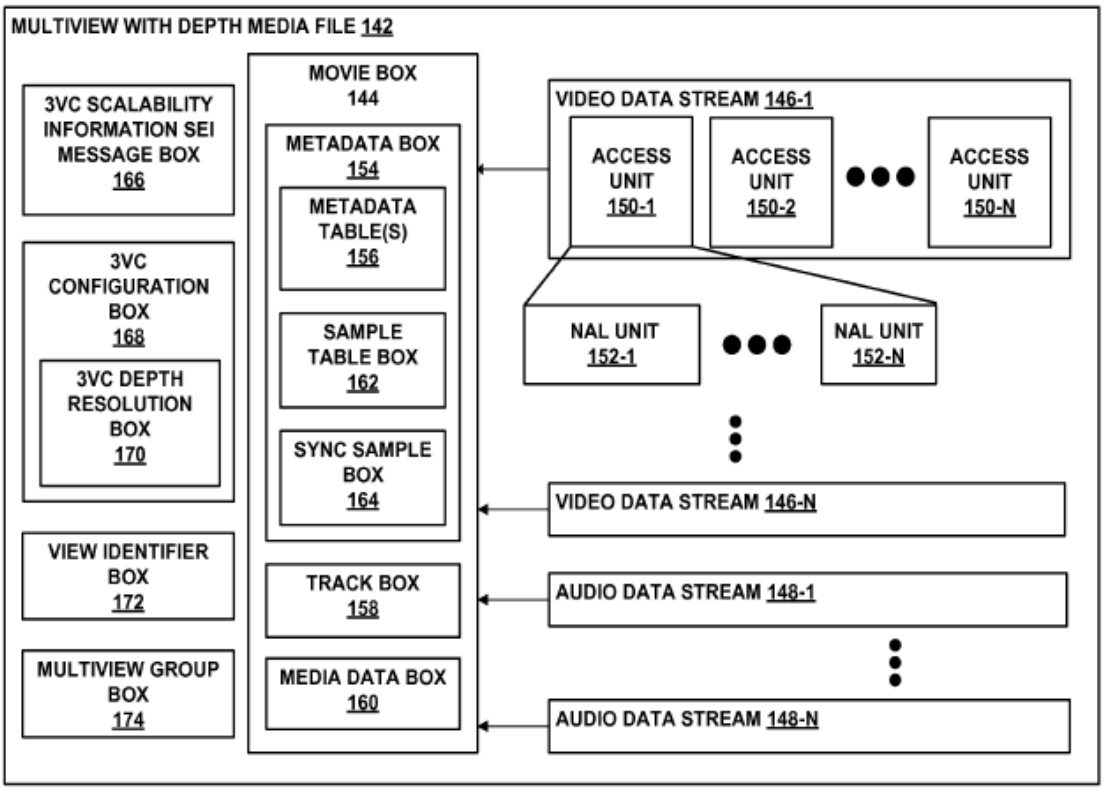
Although an inventor may define specific terms used to describe the invention, this must be done "with reasonable clarity, deliberateness, and precision" to rebut the presumption that claim terms are to be given their ordinary and customary meaning. *In re Paulsen*, 30 F.3d 1475, 1480 (Fed. Cir. 1994), *cited in* MPEP § 2111.01 IV.A. ("Lexicography"). For instance, "[a]n applicant's use of the phrase 'refers to' generally indicates an intention to define a term." *Vasudevan Software, Inc. v. MicroStrategy, Inc.*, 782 F.3d 671, 679 (Fed. Cir. 2015).

Here, the Specification states,

> ISOBMFF uses an object-oriented based scheme in which elementary syntax elements are used as building blocks to form a media file. In ISOBMFF, these elementary syntax elements *are referred to as* "boxes."

Spec. ¶ 40 (emphasis added).[3] In this passage, the phrase "are referred to as" indicates an intention to define *box* as the elementary syntax element. *Id.* Also, the Specification states, "In ISOBMFF, *a box, the elementary syntax element*, includes a four-character type, the byte count of the box, and the payload." *Id.* ¶ 41 (emphasis added). Here again, the Specification uses the term *box* synonymously with an elementary syntax element. *Id.*

Those passages are consistent with how Appellant uses the term throughout the Specification. For instance, the Specification discloses multiview-with-depth media file 142 having a sequence of boxes. *Id.* ¶ 61. Figure 1, below, illustrates the boxes in media file 142.



[3] ISOBMFF stands for ISO Base Media File Format. Spec. ¶ 36. Many video-coding standard encapsulation formats are based on ISOBMFF. *Id.* ¶ 38.

Figure 1 shows a media file's structure, which includes a movie box 144 enclosing other boxes, such as the track box 158. *Id.* ¶ 16.

The Specification explains, "A box may be part of a sequence or group of boxes and may contain other boxes, which may be referred to as sub-boxes." *Id.* ¶ 41. For example, the movie box may enclose the track box, as shown in Figure 1. Fig. 1. Table 1 also lists the names of the boxes and a corresponding description. *See* Spec. ¶ 58.

Consistent with the Specification, we construe *box* as an elementary syntax element, such as those in ISOBMFF, which may enclose other boxes. *See, e.g., id.* ¶¶ 40, 41, 58; Fig. 1. Thus, the term *depth resolution box* encompasses, for example, boxes with the spatial resolution of a depth view, and the term *configuration box* encompasses, for example, boxes with the decoder-configuration record. *See* Spec. ¶ 52.

We agree with Appellant that the Examiner has not shown that Kim parses a depth-resolution box and a configuration box. Appeal Br. 11; Reply Br. 6. In particular, the Examiner finds that Kim teaches or suggests parsing the recited boxes because Kim's file parser parses depth-map bit streams, which contain depth resolution. Ans. 5 (citing Kim ¶¶ 81, 85). In the cited paragraphs, Kim explains that media file parser 710 parses media file 760. Kim ¶ 81. Parser 710 recognizes the ID of the video track and that of the depth-map track. *Id.* ¶ 85. Parser 710 then extracts an encoded video bit stream, an encoded depth-map bit stream, and an XML document. *Id.* Video decoder 720 decodes the video, depth-map decoder 730 decodes the encoded depth-map stream, and XML parser extracts the information from the XML document using the schema. *Id.* ¶¶ 82, 83.

We agree with Appellant that these paragraphs do not discuss using particular boxes to determine a spatial resolution. Appeal Br. 11. Rather,

Kim's paragraph 85, for instance, explains that the XML document stores the required metadata. Kim ¶ 85. So, although the Examiner has shown that Kim parses depth-map bit streams (Ans. 5; Final 4), claim 1 requires parsing a depth-resolution box from a configuration box within a sample entry.

In the Answer's *Response to Arguments* section, the Examiner further explains that Kim's parser recognizes a depth-map track, and one of ordinary skill in the art would be able to modify "the depth map track to be a depth resolution box." Ans. 13. But the Examiner does not explain why. In fact, Appellant argues, and we agree, that the Examiner has not adequately explained why or how Kim or Hannuksela would use the resulting spatial information. *See* Reply Br. 6.

Also, in the Answer's *Response to Arguments* section, the Examiner indicates that Kim would require an additional modification to perform the claimed parsing. Ans. 13. This contradicts the Examiner's finding in the rejection that Kim teaches parsing the recited boxes. *Compare id.*, *with id.* at 5 (the rejection of claim 1); Final 4. Indeed, the Examiner's primary reason for citing Kim is to teach the parsing that is missing from Hannuksela. *See* Ans. 5 (stating that "Kim discloses parsing a depth resolution box from a configuration box within a sample entry"); *see also* Final 4. So even if the depth-map track were modified to be a depth-resolution box (Ans. 13), the Examiner has not explained how Kim teaches or suggests parsing the depth-resolution box from a configuration box, as required by claim 1. *Accord* Reply Br. 6 (arguing that Kim lacks a configuration box).

Constrained by this record, we agree with Appellant that the Examiner erred in rejecting claim 1 by finding that Kim parses a depth-resolution box from a configuration box within a sample entry, as recited in claim 1. *See*

Appeal Br. 11; Reply Br. 6. Because we find Appellant's argument about the boxes dispositive, we need not reach the remaining arguments.

Thus, we do not sustain the rejection of claim 1. We also do not sustain the Examiner's rejection of independent claims 9, 17, 20, 23, 31, 39, and 42, which also recite a depth-resolution box and a configuration box within a sample entry. For similar reasons, we do not sustain the rejection of dependent claims 3–6, 8, 11–14, 16, 19, 22, 25–28, 30, 33–36, 38, 41, and 44–53.

THE OBVIOUSNESS REJECTION OVER HANNUKSELA, KIM, AND ALSHINA

The Examiner rejects claims 7, 15, 29, and 37 as being obvious over Hannuksela, Kim, and Alshina. Final Act. 9; Ans. 10. Because the Examiner does not rely on Alshina to teach the boxes missing from Hannuksela and Kim, Alshina does not cure the deficiency discussed above. *See id.* So we do not sustain the Examiner's rejection of claims 7, 15, 29, and 37 for the same reasons discussed above in connection with claim 1

THE OBVIOUSNESS REJECTION OVER HANNUKSELA, KIM, AND ASOH

Claim 54 recites, "The method of claim 1, further comprising *determining the spatial resolution associated with the depth view based on* parsing the depth resolution box from the configuration box within the sample entry." Appeal Br. 38 (emphasis added). Independent claim 1, which depends from claim 54, recites "parsing a depth resolution box from a configuration box within a sample entry *to determine a spatial resolution associated with the depth view*." That is, claim 1 recites parsing to determine

the resolution, and claim 54 recites determining the resolution based on the parsing.

The Examiner finds that, although Hannuksela and Kim teach parsing to determine the resolution, those references lack determining the resolution based on the parsing. Ans. 5, 11. For this limitation, the Examiner turns to Asoh. *Id.* at 11. Considering the language of claim 54 (Appeal Br. 38) and the corresponding rejection (Ans. 11), both the Examiner and Appellant appear to interpret claim 1 as not requiring a spatial-resolution determination based on the recited parsing. Otherwise, claim 54 would not further limit claim 1 or require another reference to teach this limitation.[4]

Nevertheless, claim 54 does require the parsed depth-resolution box. As discussed above, the Examiner has not shown that Hannuksela and Kim teach or suggest this feature. And the Examiner does not rely on Asoh to teach or suggest the depth-resolution box. *See* Ans. 11 (discussing configurations and resolution). So, for the reasons discussed above regarding claim 1's rejection, we do not sustain the rejection of claim 54.

[4] Should there be further prosecution, we leave to the Examiner to determine whether claim 1's spatial-resolution determination is a non-limiting intended use. Also, if claim 1 does not require the determination, we leave to the Examiner to determine whether claim 1's final *wherein* clause is indefinite for lacking a proper antecedent basis for decoding the spatial resolution.

DECISION SUMMARY

Claims Rejected	35 U.S.C. §	Reference(s)/Basis	Affirmed	Reversed
1, 3–9, 11–17, 19, 20, 22, 23, 25–28, 30, 31, 33–36, 38, 39, 41, 42, 44–53	103	Hannuksela, Kim		1, 3–6, 8, 9, 11–14, 16, 17, 19, 20, 22, 23, 25–28, 30, 31, 33–36, 38, 39, 41, 42, 44–53
7, 15, 29, 37	103	Hannuksela, Kim, Alshina		7, 15, 29, 37
54	103	Hannuksela, Kim, Asoh		54
Overall Outcome				1, 3–9, 11–17, 19, 20, 22, 23, 25–31, 33–39, 41, 42, 44–54

REVERSED