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UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

Ex parte THOMAS RUSERT, PER FRÖJDH, and ZHUANGFEI WU

Appeal 2019-001157
Application 14/129,156
Technology Center 2400

Before BRADLEY W. BAUMEISTER, JASON V. MORGAN, and SCOTT RAEVSKY, *Administrative Patent Judges*.

BAUMEISTER, *Administrative Patent Judge*.

DECISION ON APPEAL

Appellant appeals under 35 U.S.C. § 134(a) from the Examiner's final rejection of claims 51–54.[1] Appeal Br. 2. We have jurisdiction under 35 U.S.C. § 6(b). The Board conducts a limited *de novo* review of the appealed rejections for error based upon the issues identified by Appellant, and in light of the arguments and evidence produced thereon. *Ex parte Frye*, 94 USPQ2d 1072, 1075 (BPAI 2010) (precedential).

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. Appellant identifies Telefonaktiebolaget LM Ericsson (publ) as the real party in interest. Appeal Brief filed May 21, 2018 ("Appeal Br.") 2.

CLAIMED SUBJECT MATTER

Appellant describes the present invention as follows:

> A method of indicating bit stream subsets in a compressed video bit stream is provided. The method comprises receiving the bit stream, dividing the bit stream into packets, wherein each packet comprises either one of video data or supplemental information, marking each packet (310–312, 320–322) with a first subset identifier (s0, s1)[,] which is associated with a corresponding bit stream subset, and providing a first sequence parameter set (SPS) (310), marked with the same first subset identifier as its associated bit stream subset. The first SPS further comprises a second subset identifier (b1) indicating a decoding dependency (304) of the bit stream subset associated with the first subset identifier on a bit stream subset associated with the second subset identifier. Further, a method of extracting video packets from a video bit stream is provided. The method comprises receiving packets from the bit stream, extracting a first SPS (310), which is marked with the first subset identifier (s0) and further comprising the second subset identifier (b1), using the first and the second subset identifier as relevant subset identifiers, and, for each received packet (310–312, 320–322) inspecting the first subset identifier (s0, s1) of the packet, and extracting, under the condition that the extracted first subset identifier matches one of the relevant subset identifiers, the packet from the bit stream.

Spec., Abstr.

Independent claim 51 illustrates the appealed claims:

> 51. A method of indicating decoding dependencies for a compressed video bit stream, the method comprising:
>
> receiving the compressed video bit stream, wherein the compressed video bit stream comprises a plurality of bit stream subsets in which one or more bit stream subsets in the plurality are dependent bit stream subsets having decoding dependencies on one or more other bit stream subsets in the plurality, said one or more other bit stream subsets referred to as related bit stream subsets;

> dividing the compressed video bit stream into video packets, each video packet belonging to a respective one of the bit stream subsets;
>
> marking each video packet according to the respective bit stream subset to which the video packet belongs, by including a subset identifier in a header portion of the video packet;
>
> transmitting or storing the marked video packets for decoding; and
>
> providing one or more Sequence Parameter Set (SPS) packets among the marked video packets, to indicate the decoding dependencies of the dependent bit stream subsets, including forming each such provided SPS packet by:
>
> > including in a header portion of the provided SPS packet, a subset identifier of a dependent bit stream subset; and
> >
> > including in a payload portion of the provided SPS packet, subset identifiers of the related bit stream subsets, and a reduced SPS comprising only those parameters that are updated for decoding of the dependent bit stream subset in comparison to the SPSs associated with the related bit stream subsets.

STATEMENT OF THE REJECTIONS

Claims 51–54 stand rejected under 35 U.S.C. § 103 as being unpatentable over Wang (*System and Transport Interface of SVC*, IEEE Trans. on Circuits and Sys. for Video Tech., vol. 17, no. 9, 1149–63; published Sept. 2007) and Boyce (US 2012/0275517 Al; published Nov. 1, 2012). Final Act. 7–19.[2]

[2] Rather than repeat the Examiner's positions and Appellant's arguments in their entirety, we refer to the above-mentioned Appeal Brief, as well as the following documents for their respective details: the Final Action mailed October 4, 2017 ("Final Act."); the Examiner's Answer mailed September

The Examiner initially rejected claims 51–54 under 35 U.S.C. § 101 as being directed to a judicial exception to patent-eligible subject matter (Final Act. 2–5) and rejected claims 53 and 54 under 35 U.S.C. § 112(a) as failing to comply with the written-description requirement (*id.* at 5–6). The Examiner withdrew the written-description rejection in the Advisory Action mailed January 9, 2018. The Examiner withdrew the patent-eligibility rejection in the Examiner's Answer. Ans. 3.

DETERMINATIONS AND CONTENTIONS

The Examiner finds that Wang discloses claim 51's steps of (a) receiving a compressed video bit stream, (b) dividing the compressed video bit stream into video packets, (c) marking each video packet according to the respective bit stream subset to which the video packet belongs, and (d) transmitting or storing the marked video packets for decoding. Final Act. 7–9. The Examiner also finds that Wang generally discloses claim 51's last step of including in a payload portion of the provided SPS packet, subset identifiers of the related bit stream subsets. *Id.* at 9. The Examiner further finds that Wang does not disclose all of claim 51's final limitation:

> Wang fails to disclose including in a payload portion of the provided SPS packet, subset identifiers of the related bit stream subsets, and a reduced SPS comprising only those parameters that are updated for decoding of the dependent bit stream subset in comparison to the SPSs associated with the related bit stream subsets.

Id.

21, 2018 ("Ans."); and the Reply Brief filed November 21, 2018 ("Reply Br.").

The Examiner finds that Boyce teaches this missing limitation. *Id.* at 9–10. More specifically, the Examiner finds that Boyce's dependent parameter set can share the characteristics of other parameter sets and identify the dependency parameter set to which a sequence parameter set refers. *Id.* (citing Boyce ¶¶ 3, 39, 42).

More specifically, the Examiner reasons that Boyce teaches the missing claim limitation based upon the following interpretation of that claim language: "claim 51 only positively recites the transmission or storage of marked video packets for decoding; the claim construction never positively recites 'reducing an SPS[,]' resulting in the creation of the claimed 'reduced SPS.'" Ans. 5. The Examiner then determines that Boyce's Dependency Parameter Set (DPS) corresponds to the claimed "reduced SPS" merely because (1) Boyce's DPS contains "parameters for decoding of the dependent bitstream subset" and (2) Boyce's DPS is sent in a bitstream. *Id.* at 6.

The Examiner finds that one of ordinary skill would have been motivated to use Boyce's dependency parameter set with Wang's invention in order "to allow easy extensibility to future video coding mechanisms." *Id.* at 10 (citing Boyce ¶ 17).

Appellant argues,

> Boyce does not suggest that referring a DPS set ID "reduces" the SPS in question, nor does it make sense to imply such a reduction because the DPS is distinct from the SPS. Indeed, referencing a DPS in an SPS is but one example in Boyce. Boyce explains that DPSs may be referenced by "any high level syntax structure," such as NAL unit headers, Access Unit Delimiters, and picture or slice headers. Plainly, then, DPSs are not SPSs, and are not used in Boyce to form anything like the "reduced SPS" of claim 51.

> Instead, Boyce clearly explains that DPSs indicate inter-layer dependencies between layers in a scalable video bitstream and are used to "collect" information pertaining to scalable bitstreams. The "collected information" in a DPS[,] as contemplated by Boyce[,] includes a binary representation of the layer structure, Visual Usability Information (VUI) pertaining to all layers, and extension mechanisms to allow for extensibility to future coding mechanisms. . . . At no point does Boyce describe a "reduced DPS" that includes only those parameters updated in relation to one or more related DPSs. Nor does Boyce describe reducing an SPS by including only those parameters that are updated in relation to other SPSs, and, as noted, Boyce does not remotely suggest that including a DPS ID in an SPS provides for a reduction of the parameters included in the SPS.

Appeal Br. 22–23 (citing Boyce ¶¶ 39–51; Spec., Abstract).

ANALYSIS

Appellant's arguments are persuasive because the Examiner has not established that Boyce teaches or suggests claim 51's final step: "including in a payload portion of the provided SPS packet, subset identifiers of the related bit stream subsets, and a reduced SPS comprising only those parameters that are updated for decoding of the dependent bit stream subset in comparison to the SPSs associated with the related bit stream subsets." In fact, the Examiner's reasoning, as noted above, indicates that the Examiner effectively is giving no patentable weight to this claim language. Ans. 5–7. That is, we understand the Examiner to be interpreting claim 51 as reading on a payload portion that provides any number of parameters in the SPS.

We agree with the Examiner's observation that claim 51 does not recite an affirmative step of reducing the sequence parameter set. *See* claim 51. However, this omission does not render the adjective "reduced" unclear or meaningless. The last limitation, when read in full, indicates that

the sequence parameter set is reduced, more specifically, "in comparison to the SPSs associated with the related bits stream subsets." Claim 51. As such, claim 51 provides an objective standard or benchmark against which one of ordinary skill reasonably can ascertain whether the claimed sequence parameter set is reduced.

"A claim construction that gives meaning to all the terms of the claim is preferred over one that does not do so." *Merck & Co. v. Teva Pharms. USA, Inc.*, 395 F.3d 1364, 1372 (Fed. Cir. 2005); *see also Mangosoft, Inc. v. Oracle Corp.*, 525 F.3d 1327, 1330–31 (Fed. Cir. 2008) (rejecting a claim construction that "ascribes no meaning to the term . . . not already implicit in the rest of the claim.").

Accordingly, Appellant has persuaded us of error in the Examiner's obviousness rejection of independent claim 51. We, therefore, reverse the obviousness rejection of that claim and of claims 52–54, which either depend from claim 51 or otherwise recite similar language.

DECISION SUMMARY

In summary:

Claims Rejected	35 U.S.C. §	References	Affirmed	Reversed
51–54	103	Wang, Boyce		51–54

REVERSED