UNITED STATES PATENT AND TRADEMARK OFFICE

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UNITED STATES PATENT AND TRADEMARK OFFICE

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BEFORE THE PATENT TRIAL AND APPEAL BOARD

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Ex parte YE-KUI WANG and YING CHEN

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Appeal 2018-007066
Application 13/753,278
Technology Center 2400

_____

Before ALLEN R. MACDONALD, IRVIN E. BRANCH, and
MICHAEL M. BARRY, *Administrative Patent Judges.*

BRANCH, *Administrative Patent Judge.*

DECISION ON APPEAL

STATEMENT OF THE CASE[1]

Pursuant to 35 U.S.C. § 134(a), Appellant[2] appeals from the

Examiner's decision to reject claims 1, 5, 8, 9, 13–16, 21, 23, 24, 28–31, 36,

38, 39, 43–47, 52, 54, 55, 59–62, 67, 69, 70, 74–77, 82, 84, 85, and 89–96,

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[1] We refer to the Specification, filed January 29, 2013 ("Spec."); Final
Office Action, mailed November 16, 2017 ("Final Act."); Appeal Brief, filed
March 15, 2018 ("Appeal Br."); Examiner's Answer, mailed May 4, 2018
("Ans."); and Reply Brief, filed June 28, 2018 ("Reply Br.").

[2] We use the word Appellant to refer to "applicant" as defined in 37 C.F.R.
§ 1.42. Appellant identifies the real party in interest as Qualcomm
Incorporated. Appeal Br. 3.

which are all of the pending claims. *See* Final Act. 1 (continuation sheet).

We have jurisdiction under 35 U.S.C. § 6(b).

We REVERSE.

CLAIMED SUBJECT MATTER

The claims are directed to coding video and storing video content.

Claim 1, reproduced below, is illustrative of the claimed subject matter:

1.   A method of generating a video file including coded video content, the method comprising:

obtaining, by processing circuitry of a computing device, a plurality of slices of coded video content;

obtaining, by the processing circuitry of the computing device, a first plurality of parameter sets associated with the plurality of slices of the coded video content and a second plurality of parameter sets associated with the plurality of slices of the coded video content, wherein each parameter set of the first plurality is of a picture parameter set (PPS) type, and wherein each parameter set of the second plurality is of a sequence parameter set (SPS) type;

generating, by the processing circuitry of a computing device, a plurality of access units of a video bitstream, such that the plurality of access units encapsulate the plurality of slices of the coded video content;

generating, by the processing circuitry of the computing device, a plurality of samples in a file track associated with the video file, such that the plurality of samples encapsulate the plurality of access units that encapsulate the plurality of slices of the coded video content;

based on each parameter set of the first plurality being associated with the PPS type, encapsulating, by the processing circuitry of the computing device, the first plurality of parameter sets within the generated plurality of samples of the coded video content included in the video file;

generating, by the processing circuitry of the computing device, a sample description that includes metadata that applies to the plurality of samples of the file track associated with the video file;

based on each parameter set of the second plurality being associated with the SPS type, encapsulating, by the processing circuitry of the computing device, the second plurality of parameter sets in the sample description, wherein the sample description is signaled separately from the plurality of samples, based on the sample description including the metadata; and

signaling, by the processing circuitry of the computing device, the sample description in the video bitstream separately from the plurality of samples associated with the video file.

REFERENCE AND REJECTIONS

Claims 46, 77, 92, 96 stand rejected under 35 U.S.C. 112(b) or 35 U.S.C. 112 (pre-AIA), second paragraph, "as being indefinite for failing to particularly point out and distinctly claim the subject matter which the inventor or a joint inventor, or for pre-AIA the applicant regards as the invention." Ans. 3; *see also* Final Act. 11–13.

Claims 46, 92, and 96 stand rejected under 35 U.S.C. 112(a) or 35 U.S.C. 112 (pre-AIA), first paragraph, because "the specification, while being enabling for application of software on a processor, does not reasonably provide enablement for the full scope of other embodiments reading on the claims or otherwise suggested in the Specification. The specification does not enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make the invention commensurate in scope with these claims." Ans. 3; Final Act. 11–13.

Claims 1, 5, 8, 9, 13–16, 21, 23, 24, 28–31, 36, 38, 39, 43–47, 52, 54, 55, 59–62, 67, 69, 70, 74–77, 82, 84, 85, and 89–96 stand rejected under 35 § U.S.C. 101 as being directed toward non-statutory subject matter. Ans. 3.

Claims 1, 5, 8, 9, 13–16, 21, 23, 24, 28–31, 36, 38, 39, 43–47, 52, 54, 55, 59–62, 67, 69, 70, 74–77, 82, 84, 85, and 89–96 stand rejected under pre-AIA 35 U.S.C. 103(a) "as being unpatentable over Applicant Admitted Prior

Art ("AAPA") as described or referenced in the Specification in view of

ISO/IEC 14496-15 2nd edition 2010-06-01 Part 15: Advanced Video

Coding (AVC) file format ("AVC15") as provided in an IDS and referenced

as prior art in Specification." Ans. 4.

ANALYSIS

35 U.S.C. § 112

The Examiner rejects claims 46, 77, 92, and 96 under 35 U.S.C.

§ 112(b) or 35 U.S.C. § 112 (pre- AIA), second paragraph as being

indefinite. Final Act. 11–13. The Examiner rejects claims 46 and 92, and

96 under 35 U.S.C. 112(a) or 35 U.S.C. 112 (pre-AIA), first paragraph, as

follows:

> the specification, while being enabling for application of software on a processor, does not reasonably provide enablement for the full scope of other embodiments reading on the claims or otherwise suggested in the Specification. The specification does not enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make the invention commensurate in scope with these claims.

Final Act. 11–12.

Regarding claim 46, the Examiner finds as follows:

> Claim 46 recites "means for obtaining a plurality of slices ... means for obtaining a first plurality of parameter sets ... means for generating ... means for encapsulating ... " which are limitations that seem to invoke 35 U.S.C. 112(f) or 35 U.S.C. 112 (pre-AIA), sixth paragraph. However, the written description fails to disclose the corresponding and differentiated structure, material, or acts for each claimed function. Written description further fails to enable every conceivable means for achieving the stated purpose, or how to achieve the stated purpose by all the possible means suggested in Specification Paragraphs 121 and

163 including "any suitable processing unit or processing circuitry, such as, for example ... "

Final Act. 12.

Regarding claim 77, the Examiner finds as follows:

Claim 77 recites **"instructions ... that cause the one or more processors to receive a sample description of the file track separately from the plurality of samples of the coded video content of the video file"** however it is indefinite how instructions can cause an outside signal to have a different format. Examiner suggests clarifying this language, such as where instructions may enable reception of such a signal rather than cause the signal itself.

Id.

Regarding claim 92, the Examiner finds as follows:

Claim 92 recites **"means for receiving a file ... means for receiving a sample description of the file track ... means for decapsulating the plurality of samples ... means for decapsulating the plurality of access units ... means for decapsulating the plurality of samples to form a first plurality of parameter sets ... means for decapsulating the sample description** ... " which are limitations that seem to invoke 35 U.S.C. 112(f) or 35 U.S.C. 112 (pre-AIA), sixth paragraph. However, the written description fails to disclose the corresponding and differentiated structure, material, or acts for each claimed function. Written description further fails to enable every conceivable means for achieving the stated purpose, or how to achieve the stated purpose by all the possible means suggested in Specification Paragraphs 121 and 163 including "any suitable processing unit or processing circuitry, such as, for example ... "

Id. at 12–13. The Examiner rejects claims 96 for essentially the same reason as claim 92 from which it depends. *Id*. at 13.

Regarding claims 46, 92, and 96, we cannot sustain the rejection because the basis of the rejection is unclear. The Examiner explanation of the findings does not align with the statement of the rejection. To wit, the explanation is directed to 35 U.S.C. § 112(f), while the statement of the rejections allege that the basis of the rejection states that the rejections are under 35 U.S.C. §§ 112 (a) and (b). Should further prosecution ensure, the Examiner is advised to consider clarifying the basis of the rejections.

Regarding claim 77, we find the Examiner has not adequately explained what renders the claim indefinite. Should further prosecution ensure, the Examiner should consider clarifying the nature of the rejection and the supposed indefinite feature.

Accordingly, on this record, we cannot sustain the rejections under 35 U.S.C. §112.

35 U.S.C. § 101

The Examiner rejects all pending claims "under 35 U.S.C. § 101 as being directed toward non-statutory subject matter." Final Act. 15.

With respect to this rejection, we select claim 1 as representative. *See* 37 C.F.R. § 41.37(c)(1)(iv). Appellant does not separately argue the claims. Except for our ultimate decision, we limit our review of the § 101 rejection to claim 1.

A. USPTO § 101 Guidance

In January 2019, the U.S. Patent and Trademark Office (USPTO) published revised guidance on the application of § 101 under the *Alice*/*Mayo*

Framework.[3] 2019 Revised Patent Subject Matter Eligibility Guidance, 84 Fed. Reg. 50 (Jan. 7, 2019) ("2019 Revised Guidance").[4] "All USPTO personnel are, as a matter of internal agency management, expected to follow the guidance." *Id.* at 51; *see also* October 2019 Update at 1.

Under the 2019 Revised Guidance and the October 2019 Update, we first look to whether the claim recites:

> (1) any judicial exceptions, including certain groupings of abstract ideas (i.e., mathematical concepts, certain methods of organizing human activity such as a fundamental economic practice, or mental processes) ("Step 2A, Prong One"); and
>
> (2) additional elements that integrate the judicial exception into a practical application (*see* MPEP § 2106.05(a)–(c), (e)–(h) (9th ed. Rev. 08.2017, Jan. 2018)) ("Step 2A, Prong Two").[5]

2019 Revised Guidance, 84 Fed. Reg. at 52–55.

Only if a claim (1) recites a judicial exception and (2) does not integrate that exception into a practical application, do we then look, under Step 2B, to whether the claim:

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[3] *Alice Corp. v. CLS Bank Int'l*, 573 U.S. 208 (2014); *Mayo Collaborative Servs. v. Prometheus Labs., Inc.*, 566 U.S. 66 (2012).

[4] In response to received public comments, the Office issued further guidance on October 17, 2019, clarifying the 2019 Revised Guidance. USPTO, *October 2019 Update: Subject Matter Eligibility* (the "October 2019 Update") (available at https://www.uspto.gov/sites/default/files/documents/peg_oct_2019_update.pdf).

[5] This evaluation is performed by (a) identifying whether there are any additional elements recited in the claim beyond the judicial exception, and (b) evaluating those additional elements individually and in combination to determine whether the claim as a whole integrates the exception into a practical application. *See* 2019 Revised Guidance - Section III(A)(2), 84 Fed. Reg. 54–55.

(3) adds a specific limitation beyond the judicial exception that is not

"well-understood, routine, conventional" in the field (*see* MPEP

§ 2106.05(d)); or

(4) simply appends well-understood, routine, conventional activities

previously known to the industry, specified at a high level of

generality, to the judicial exception.

2019 Revised Guidance, 84 Fed. Reg. at 56.

B. Examiner's § 101 Rejection - *Alice/Mayo* - Part 1

2019 Revised Guidance Step 2A – Prong One

Applying the *Alice/Mayo* analysis, the Examiner rejects the claims as

follows:

> Claims 1, 5, 8-9, 13-16, 21, 23-24, 28-31, 36, 38-39, 43-47, 52, 54-55, 59-62, 67, 69-70, 74-77, and 82, 84-85, 89-96 are rejected under 35 U.S.C. 101 as being directed toward non-statutory subject matter. Based upon analysis of the present claims, the claims appear to be directed toward formatting image data in a file or data stream, an abstract idea, which is not considered statutory as defined in *In re Prater; Gottschalk v. Benson,* 409 U.S. 63, 175 U.S.P.Q. 673 (1972) (conversion of numerical information is ineligible); *TL/ Communications LLC v. AV Automotive LLC,* (Fed Cir. May 17, 2016) (recording, transmitting and administering digital images is ineligible); Digitech Image Techs., LLC v Electronics for Imaging, Inc., 758 F.3d 1344, 111 U.S.P.Q.2d 1717 (Fed. Cir. 2014) (Using profiles in a digital image processing system is ineligible); In re Lowry, 32 F.3d 1579, 1583-84, 32 USPQ2d 1031, 1035 (Fed. Cir. 1994); In re Ngai, 367 F.3d 1336, 1339, 70 USPQ2d 1862, 1864 (Fed. Cir. 2004); In re Gulack, 703 F.2d 1381, 1385, 217 USPQ 401, 404 (Fed. Cir. 1983) (Nonfunctional descriptive material cannot lend patentability to an invention that would have otherwise been anticipated or rendered obvious over the prior art); McRO, Inc. dba Planet Blue v. Bandai Namco Games America Inc., 120 USPQ2d 1091 (Fed. Cir. 2016) (Presenting intended results

without a particular automation beyond what is well-understood, routine, or conventional is ineligible); in view of *Alice*. The elements of the present claims, when considered individually and in combination, are not directed toward significantly more than an abstract idea itself; that is processing and computing is applied to formatting data at a high level of generality (obtaining inputs or generating outputs based on inputs) in a well understood and conventional way computing is used in this field to generate formatted data based on various types of input data. Further, there are no limitations directed toward judicially recognized improvements to another technology or technical field; improvements to the functioning of the computer itself; or meaningful limitations beyond generally linking the use of an abstract idea to a particular technological environment, such as data manipulation applied to a video file. The claims should be amended to include limitations toward the technical field.

Final Act. 15–16

C. Panel's Analysis

2019 Revised Guidance Step 2A – Prong 1

Under the Revised Guidance:

To determine whether a claim recites an abstract idea in Prong One, examiners are now to: (a) identify the specific limitation(s) in the claim under examination (individually or in combination) that the examiner believes recites an abstract idea; and (b) determine whether the identified limitation(s) falls within the subject matter groupings of abstract ideas enumerated in Section I of the 2019 Revised Patent Subject Matter Eligibility Guidance.

2019 Revised Guidance, 84 Fed. Reg. at 54.

Even though the Examiner's Final Action was issued prior to the 2019 Revised Guidance, we follow the 2019 Revised Guidance in our review to determine whether the Final Action provides sufficient articulated reasoning as to why claim 1 recites an abstract idea or other patent-ineligible concept

(e.g., a law of nature). That is, we ask whether the rejection adequately address both (a) and (b) *supra*.

We conclude, the § 101 rejection on appeal does not sufficiently articulate how any claim limitation(s) fall within one of the three groupings of abstract ideas identified in the 2019 Revised Guidance or otherwise recite an abstract idea. Therefore, we do not sustain the rejection of claim 1 under 35 U.S.C. § 101.

35 U.S.C. § 103

Appellant's arguments (Appeal Br. 29–46; Reply Br. 7–9) persuade us of error in the Examiner's obviousness rejections (Final Act. 19–31) of all pending claims. Notably, the Examiner responds only to Appellant's arguments regarding claim 1 and, even in that case, does not persuasively address the arguments Appellant raises. *See* Ans. 7–10.

For instance, Appellant argues as follows regarding claim 1:

Independent claim 1 recites a method of generating a video file, where the method includes *"based on each parameter set of the first plurality being associated with the PPS type,* encapsulating the first plurality of *parameter sets within the generated plurality of samples"* and *"based on* each parameter set of *the second plurality being associated with the SPS type,* encapsulating the second plurality of *parameter sets in the sample description."* Independent claim 1 also sets forth that "the sample description is *signaled separately from* the plurality of samples *based on the sample description including the metadata"* and that the "sample description that includes metadata that applies to the plurality of samples of the file track associated with the video file"
. . .

AVC fails to *even recognize* the video coding aspects addressed by the features of claim 1, *much less* does AVC contemplate the particular solution provided by the combination of features recited in Appellant's claim 1. For at least these

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reasons, AVC fails to disclose or suggest the combination of features set forth in claim 1, as required for rejection under pre-AIA 35 U.S.C. § 103(a). In support of the rejection, the Examiner relied on sections 1 and 5 of AVC. However, AVC entirely fails to disclose the combination of features recited in claim 1. Moreover, as in further detail discussed below, the AVC disclosure *teaches away from* the combination of features recited in claim 1.

For instance, the AVC disclosure states that parameter sets are stored either in the sample descriptions of the video stream or in the parameter set stream, but *never in both.* A direct quote from the "parameter sets" portion of section 5.2.2 of AVC is: "NOTE Parameter sets are stored *either* in the *sample descriptions* of the video stream or in the parameter set stream, *but never in both."* The cited portions clearly illustrate that according to AVC, *all parameter sets* must, by definition, be included in *only one of* the sample descriptions or the parameter set stream. The AVC techniques are subject to this limitation, *regardless of the type of parameter sets being processed.* Indeed, section 5.2.2 of AVC, which includes a subsection titled "parameter sets," makes no distinction between PPS-type and SPS-type parameter sets in stating that "[p]arameter sets are stored *either* in the *sample descriptions* of the video stream or in the parameter set stream, *but never in both"* . Thus, A VC *explicitly precludes* the inclusion of an SPS-type parameter set in the sample description in conjunction with the inclusion of a PPS-type parameter set in the parameter set track.

Appeal Br. 31–33 (footnotes and some emphasis omitted).

The Examiner responds as follows:

Cumulatively, Applicant's proposed distinction to the industry standards is embodied in the claim 1 language: "encapsulating the first plurality of parameter sets within the generated plurality of samples of the coded video ... encapsulating the second plurality of parameter sets in the sample description, wherein the sample description is signaled [[out of band with respect to]] separately from the plurality of samples."

Prior art, AVC15, teaches an embodiment of this language: ""implementations may choose to map parameter sets to in-band parameter set NAL units ... or use some out-of-band delivery mechanism."" AVC, page 6, third paragraph. Thus a person of skill in the art would know to choose parameters in a set and the data unit to which it is attached, and thus can choose another parameter set and data unit to which that set is attached, and so on in a very predictable fashion. This is the definition of obviousness.

Appellant proposes an additional embodiment that the claimed parameter sets are stored (redundantly) in both the sample description and another description. The claims are not limited to this embodiment, and providing an additional embodiment within the scope of the claim does not address the rejection of another embodiment within the scope of the claims: Substantially, every claim includes within its breadth or scope one or more variant embodiments that are not disclosed in the application, but which would anticipate the claimed invention if found in a reference. The claim must be so analyzed and any such variant encountered during the search should be recognized. See, MPEP 904.0l(a).

Further note that prior art provides in a footnote that both embodiments are known in the art but one is preferred: "[p]arameter sets are stored either in the sample descriptions of the video stream or in the parameter set stream, but never in both" on AVC15 page 6. This statement indicates that both embodiments (piecemeal storage of parameter sets and redundant storage of parameter sets in both signal locations) are known in the art, however redundant storage (in both locations) is not preferred in the art of video compression, because redundancy increases file size and reduces compression gains.

Ans. 8–9 (emphasis omitted; brackets in original).

We are persuaded of error because the prior art quoted above by the Examiner specifically states "[p]arameter sets are stored either in the sample descriptions of the video stream or in the parameter set stream, but never in both." The use of "never" here indicates that the prior art disclaims what

Appellant claims. Moreover, the Examiner has not persuasively established a factual basis for the following findings:

> the claims are largely directed to a format of a video signal which is admitted as prior art as embodied by the published HEVC industry standard. Additional format details are cited in AVC15 which is an even older industry standard. Note that a signal content cannot lend patentability to an apparatus (i.e. computer) or method that would otherwise be unpatentable

Ans. 7.

Because we find the Examiner not to have complied with MPEP § 1207.02(2),[6] on this record, we cannot sustain the Examiner's obvious rejections of the pending claims.

DECISION SUMMARY

Claims Rejected	35 U.S.C. §	Reference(s)/ Basis	Affirmed	Reversed
46, 92, 96	112(a)	Enablement		46, 92, 96
46, 77, 92, 96	112(b)	Indefiniteness		46, 77, 92, 96
1, 5, 8, 9, 13–16, 21, 23, 24, 28–31, 36, 38, 39, 43–47, 52, 54, 55, 59–62, 67, 69, 70, 74–77, 82, 84, 85, 89–96	101	Eligibility		1, 5, 8, 9, 13–16, 21, 23, 24, 28–31, 36, 38, 39, 43–47, 52, 54, 55, 59–62, 67, 69, 70, 74–77, 82, 84, 85, and 89–96

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[6] "*Response to Argument.* A statement of whether the examiner disagrees with each of the arguments of appellant in the brief with respect to the issues presented and an explanation of the reasons for disagreement with any such argument. The examiner must use headings and subheadings paralleling the headings and subheadings utilized in the appellant's brief."

Claims Rejected	35 U.S.C. §	Reference(s)/ Basis	Affirmed	Reversed
1, 5, 8, 9, 13–16, 21, 23, 24, 28–31, 36, 38, 39, 43–47, 52, 54, 55, 59–62, 67, 69, 70, 74–77, 82, 84, 85, 89–96	103	AAPA		1, 5, 8, 9, 13–16, 21, 23, 24, 28–31, 36, 38, 39, 43–47, 52, 54, 55, 59–62, 67, 69, 70, 74–77, 82, 84, 85, 89–96
Overall Outcome:				1, 5, 8, 9, 13–16, 21, 23, 24, 28–31, 36, 38, 39, 43–47, 52, 54, 55, 59–62, 67, 69, 70, 74–77, 82, 84, 85, 89–96

REVERSED