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UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

Ex parte JOSE M. RODRIGUEZ, ANIMESH MISHRA,
and
NAVEEN DODDAPUNENI

Appeal 2018-000604
Application 13/995,012¹
Technology Center 2600

Before CARLA M. KRIVAK, HUNG H. BUI, and JON M. JURGOVAN,
Administrative Patent Judges.

BUI, *Administrative Patent Judge.*

DECISION ON APPEAL

Appellants seek our review under 35 U.S.C. § 134(a) from the Examiner’s Final Rejection of claims 1–30, which are all the claims pending in the application. We have jurisdiction under 35 U.S.C. § 6(b).

We AFFIRM.²

¹ According to Appellants, the real party in interest is Intel Corporation. App. Br. 3.

² Our Decision refers to Appellants’ Appeal Brief (“App. Br.”) filed April 4, 2017; Appellants’ Supplemental Appeal Brief (“Supp. App. Br.”) filed May 17, 2017 submitting a Claims Appendix; Reply Brief (“Reply Br.”) filed October 26, 2017; Examiner’s Answer (“Ans.”) mailed September 15, 2017; Final Office Action (“Final Act.”) mailed December 8, 2016; and original Specification (“Spec.”) filed June 17, 2013.

STATEMENT OF THE CASE

Appellants’ invention relates to methods and systems for performing video analytics and video coding functions using “two different methods for logic address to physical address mapping” when reading video from memory. Spec. ¶¶ 84–85, 92, 95, Fig. 11; Abstract.

Claims 1, 11, and 21 are independent. Representative claim 1 is reproduced below:

1. A method comprising:
 - determining whether video is in a first resolution or second resolution wherein said second resolution is a lower resolution than said first resolution;
 - if the video is in the second resolution, reading the same rows in successive banks of memory; and
 - if the video is in the first resolution, reading successive rows in the same bank of memory.³

Supp. App. Br. 2–5 (Claims App’x).

Evidence Considered

Kaku	US 7,154,550 B1	Dec. 26, 2006
Endresen	US 2010/0166076 A1	July 1, 2010
Kumar	US 2012/0274856 A1	Nov. 1, 2012
Yang	US 2010/0039562 A1	Feb. 18, 2010

³ Appellants’ Claim Appendix includes a typographical error where it recites “the first resolution format” in claim 1. The word “format” was previously deleted in an Amendment After-Final filed on January 12, 2017 entered by the Examiner on January 27, 2017.

EXAMINER'S REJECTIONS

(1) Claims 1–30 stand rejected under 35 U.S.C. § 101 because the claimed invention is directed to non-statutory subject matter. Final Act. 7–11.

(2) Claims 1, 2, 11, 12, 21, and 22 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Kaku. Final Act. 12–21.

(3) Claims 3, 4, 13, 14, 23, and 24 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Kaku and Endresen. Final Act. 22–29.

(4) Claims 5–7, 15–17, and 25–27 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Kaku and Kumar. Final Act. 29–37.

(5) Claims 8, 9, 18, 19, 28, and 29 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Kaku, Kumar, and Yang. Final Act. 37–41.

(6) Claims 10, 20, and 30 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Kaku, Kumar, and Endresen. Final Act. 41–44.

ANALYSIS

§ 101 Rejection of Claims 1–30

In *Alice Corp. Pty. v. CLS Bank Int'l*, 134 S. Ct. 2347 (2014), the Supreme Court reiterates an analytical two-step framework previously set forth in *Mayo Collaborative Services v. Prometheus Laboratories, Inc.*, 566 U.S. 66, 79 (2012), “for distinguishing patents that claim laws of nature, natural phenomena, and abstract ideas from those that claim patent-eligible applications of those concepts.” *Id.* at 2355. The first step in the analysis is

to “determine whether the claims at issue are directed to one of those patent-ineligible concepts,” such as an abstract idea. *Id.* If the claims are directed to eligible subject matter, the inquiry ends. *Thales Visionix Inc. v. United States*, 850 F.3d 1343, 1349 (Fed. Cir. 2017); *Enfish, LLC v. Microsoft Corp.*, 822 F.3d 1327, 1339 (Fed. Cir. 2016). If the claims are directed to a patent-ineligible concept, the second step in the analysis is to consider the elements of the claims “individually and ‘as an ordered combination’” to determine whether there are additional elements that “‘transform the nature of the claim’ into a patent-eligible application.” *Alice*, 134 S. Ct. at 2355 (citing *Mayo*, 566 U.S. at 79, 78). In other words, the second step is to “search for an ‘inventive concept’—*i.e.*, an element or combination of elements that is ‘sufficient to ensure that the patent in practice amounts to significantly more than a patent upon the [ineligible concept] itself.’” *Id.* (citing *Mayo*, 566 U.S. at 72–73).

In rejecting independent claims 1, 11, and 21, and dependent claims 2–10, 12–20, and 22–30 under 35 U.S.C. § 101, the Examiner finds these claims are directed to

the abstract idea of merely reading data out of memory based on how the data is stored which is an idea of itself on a par with organizing information through mathematical correlations, [discussed in] *Digitech . . .*, obtaining and comparing intangible data, [discussed in] *CyberSource . . .*, and using categories to organize, store and transmit information, [discussed in] *Cyberfone*.

Final Act. 7 (citing *Digitech Image Techs., LLC v. Elecs. for Imaging, Inc.*, 758 F.3d 1344 (Fed. Cir. 2014); *CyberSource Corp. v. Retail Decisions, Inc.*, 654 F.3d 1366 (Fed. Cir. 2011); and *Cyberfone Sys., LLC v. CNN Interactive Grp., Inc.*, 558 F. App’x 988 (Fed. Cir. 2014)); *see also* Ans. 41.

The Examiner also finds “the additional elements [in the claims] do not amount to significantly more” because these “additional elements are the banks of memory,” and “general purpose computer components” that “perform the basic functions of a computer (in this case, organizing information in memory and reading data from memory).” Final Act. 7–8.

Appellants argue all claims together (Reply Br. 1–4; App. Br. 6). We select claim 1 as representative. Claims 2–30 stand or fall with claim 1 (*see* 37 C.F.R. § 41.37(c)(1)(iv)).

Appellants contend the claims are not abstract because “the claimed invention improves the operation of the processor” as evidenced by paragraphs 28 and 30 in Appellants’ Specification, describing how “[w]ith the claimed invention you can operate in conventional linear memory mode and two-dimensional matrix mode.” App. Br. 6 (citing Spec. ¶¶ 28, 30); Reply Br. 4. Appellants assert the claimed invention is patentable for reasons similar to those articulated in *Visual Memory*, where “the Federal Circuit expressly relied upon the applicant’s own assertions of improved [computer memory system] operation within the specification” to determine that *Visual Memory’s* claims are not abstract. Reply Br. 4 (citing *Visual Memory LLC v. NVIDIA Corp.*, 867 F.3d 1253 (Fed. Cir. 2017)).

We appreciate the analogy based on *Visual Memory*. However, Appellants’ arguments are not commensurate with the scope of claim 1 because claim 1 is broadly worded and does not include necessary limitations that improve the processor’s operation. Likewise, Appellants have not demonstrated their claims are directed to an improvement in processor’s or computer’s operation. For example, the Federal Circuit held that *Visual Memory’s* claims “are directed to a technological improvement:

an enhanced computer memory system” because (1) the claimed “programmable operational characteristics . . . are configurable based on the type of processor—instead of ‘on a process that qualifies as an ‘abstract idea’ for which computers are invoked merely as a tool’”; and (2) *Visual Memory’s* “specification discusses the advantages offered by the technological improvement.” *Id.* (citing *Enfish*, 822 F.3d at 1336).

In contrast to *Visual Memory’s* claims, Appellants’ claim 1 is directed to a generic method that reads the same rows in successive memory banks, or successive rows in the same memory bank depending on a video’s resolution. *See* Claim 1. For example, paragraphs 28 and 30 of Appellants’ Specification (*see* App. Br. 6 and Reply Br. 4) describe “[s]torage on the main memory may be selectively implemented non-linearly [two-dimensionally] or linearly,” but do not describe reading the *same rows in successive memory banks* or *successive rows in a same memory bank*, as claimed. *See* Spec. ¶¶ 28, 30. Paragraphs 28–32 also do not mention the claimed reading the same or successive rows of memory bank(s), and do not indicate that reading the same or successive memory rows would correspond to a “conventional linear memory mode” or “two-dimensional matrix mode” (*see* App. Br. 6). As such, we find Appellants’ claim 1 is not directed to an “improvement of processor operation” for “operat[ing] in conventional linear memory mode and two-dimensional matrix mode” as advocated by Appellants. App. Br. 6 (citing Spec. ¶¶ 28, 30); Reply Br. 4.

Further review of Appellants’ Specification indicates that reading the same or successive memory rows is described in paragraphs 85 and 92. *See* Spec. ¶¶ 84–85, 92, and 95 (describing an “external memory subsystem [that] supports two different methods for logic address to physical address

mapping,” the two different methods being a “Row Bank Control (RBC) mode” for reading the same rows in successive banks of memory, and a “bank row control (BRC) mode” for reading successive rows in the same bank of memory). Appellants’ claim 1, however, is still not directed to a processor operation as described in paragraphs 84–85, 92, and 95 of the Specification. Particularly, the Specification describes *reading a video in different modes* (i.e., in RBC and BRC modes). See Spec. ¶ 95, Fig. 11. In contrast, Appellants’ claim 1 does not recite or require *reading a video in different modes*. Rather, claim 1 merely recites different modes of reading memory “rows” (i.e., “reading the same rows in successive banks of memory” and “reading successive rows in the same bank of memory”), without requiring those “rows” to be the claimed “video.”⁴ That is, the claimed “reading” steps *are not required to read “the video.”*⁵ See Supp. App. Br. 2–3 (Claims App’x).

⁴ Claim 21, an apparatus claim, similarly recites modes of reading memory “rows” (i.e., “reading the same rows in successive banks of the memory” and “reading successive rows in the same bank of memory”), without requiring those read memory “rows” to be the claimed “video in said memory . . . in a first resolution or second resolution.” See Supp. App. Br. 4 (Claims App’x).

⁵ Independent claims 1, 11, and 21 could be amended to indicate that the claimed “reading the same rows in successive banks of memory” and “reading successive rows in the same bank of memory” *are reading portions of the video*. Such amendment would make claims 1, 11, and 21 directed to the improvements in processor operation described at paragraphs 84–95 in Appellants’ Specification and, as such, would overcome the Examiner’s § 101 rejection for reasons stated in *Visual Memory* and *Thales*. See *Visual Memory*, 867 F.3d at 1253, 1259 (holding that the claims are not directed to an abstract idea, and instead are directed to a technological improvement: an enhanced computer memory system); and *Thales Visionix Inc. v. United States*, 850 F.3d 1343, 1348–49 (Fed. Cir. 2017) (holding that “claims

Thus, we agree with the Examiner’s conclusion the claims are directed to an abstract idea because they are directed to generic data manipulation, including organizing, storing, and reading data from memory—which are abstract ideas similar to data manipulation techniques identified in *Cyberfone*, *CyberSource*, *Digitech*, *Content Extraction*, and *Electric Power Group*. Ans. 41; Final Act. 3, 7; see *Cyberfone*, 558 F. App’x at 988, 992; *CyberSource*, 654 F.3d at 1372–73; *Digitech*, 758 F.3d at 1344, 1351 (employing mathematical algorithms to manipulate existing information); *Content Extraction & Transmission LLC v. Wells Fargo Bank, Nat’l Ass’n*, 776 F.3d 1343, 1345, 1347 (Fed. Cir. 2014) (finding a “method of processing information from a diversity of types of hard copy documents” is “drawn to the abstract idea of 1) collecting data, 2) recognizing certain data within the collected data set, and 3) storing that recognized data in a memory”); and *Electric Power Grp., LLC v. Alstom S.A.*, 830 F.3d 1350, 1354–55 (Fed. Cir. 2016) (finding “gathering and analyzing information of a specified content, then displaying the results,” and “selecting information, by content or source, for collection, analysis, and display” are “abstract ideas that use computers as tools”).

In fact, none of the steps and elements recited in Appellants’ claims provide any description or explanation as to how the claimed reading of memory “rows” and “banks” are intended to provide: (1) a “solution . . . necessarily rooted in computer technology in order to overcome a problem specifically arising in the realm of computer networks,” as explained by the Federal Circuit in *DDR Holdings*, 773 F.3d 1245, 1257 (Fed. Cir. 2014); (2)

directed to a new and useful technique for using sensors to more efficiently track an object on a moving platform” are patent eligible under *Alice* step 1).

“a specific improvement to the way computers operate,” as explained in *Enfish*, 822 F.3d at 1336; or (3) an “unconventional technological solution . . . to a technological problem” that “improve[s] the performance of the system itself,” as explained in *Amdocs (Israel) Ltd. v. Openet Telecom, Inc.*, 841 F.3d 1288, 1300, 1302 (Fed. Cir. 2016). As recognized by the Examiner, the claimed “determination of whether to read data [from memory] in one manner or another” does not indicate improvements in processor’s operation or memory-reading techniques. Ans. 41; Final Act. 3.

Accordingly, we agree with the Examiner claims 1–30 are directed to an abstract idea.

We also agree with the Examiner claim 1 does not amount to significantly more than the abstract idea because the claimed generic computer components (e.g., banks of memory) perform conventional computing functions (e.g., rows of memory banks are read). Final Act. 7–8. As discussed *supra*, we are not persuaded Appellants’ claim 1 improves the operation of a processor. “[T]he use of generic computer elements like a microprocessor” to perform conventional computer functions “do not alone transform an otherwise abstract idea into patent-eligible subject matter.” (*FairWarning IP, LLC v. Iatric Sys., Inc.*, 839 F.3d 1089, 1096 (Fed. Cir. 2016) (citing *DDR Holdings*, 773 F.3d at 1256)).

Because we agree with the Examiner’s analysis and find Appellants’ arguments insufficient to show error, we sustain the rejection of claims 1–30 under 35 U.S.C. § 101.⁶

⁶ In the event of any further prosecution, we suggest the Examiner evaluate claims 1 and 11 for compliance with 35 U.S.C. § 112 (pre-AIA), first paragraph, e.g., whether claims 1 and 11 each recite a single “means” which

§ 103(a) Rejections of Claims 1–30

With respect to claim 1, the Examiner finds Kaku’s digital camera (10) determines whether recorded video is in a first (higher) resolution or second (lower) resolution before reading banks of a memory (SDRAM 38). Final Act. 12–13 (citing Kaku 5:21–50); Ans. 44–45. Particularly, the Examiner finds Kaku determines whether video is “high-resolution YUV data” or “low-resolution YUV data.” Final Act. 12–13. We do not agree.

We agree with Appellants that Kaku does not teach or suggest “determining whether video is in a first [higher] resolution or second [lower] resolution,” as recited in claim 1. Reply Br. 5–6. As Appellants explain, there is “nothing in the [Kaku] reference that decides whether or not the video is in the first resolution or the second resolution” because Kaku’s video is always in the same resolution. Reply Br. 5–6. Particularly, Kaku teaches video (“a real-time motion image (through-image)”—captured “[w]hen [a] camera mode is selected”—is “thinned out by the thinning-out circuit 24, thereby converted into YUV data (*low resolution YUV data*). . . . and the pixel data constituting the *low-resolution YUV data* is intermittently

is non-enabling for the scope of the claims. Claims 1 and 11 each recite a single “step” (“determining”), followed by conditional (“if”) limitations. See MPEP § 2164.08(a). See also *In re Hyatt*, 708 F.2d 712, 714–15 (Fed. Cir. 1983) (A single means claim which covered every conceivable means for achieving the stated purpose was held non-enabling for the scope of the claim because the specification disclosed at most only those means known to the inventor); *Ex parte Rodriguez*, Appeal No. 2008-000693 (BPAI October 1, 2009) (precedential) (discussing functional claiming and scope of enablement); see also *Ex parte Schulhauser*, Appeal No. 2013-007847 (PTAB April 28, 2016) (precedential) (discussing conditional limitations).

outputted.” See Kaku 2:52–62 (emphasis added) and Abstract; see also Kaku 5:37–50. Thus, Kaku’s *video* is always in *low resolution*. App. Br. 8; Reply Br. 5.

In contrast, Kaku’s “*high-resolution YUV data*”—captured when a “shutter button” is pressed—is a “*still image*,” not a video. See Kaku 5:20–36 (emphasis added); see also Kaku 6:23–32 (“When the shutter button 54 is operated by the operator. . . the high-resolution YUV data outputted from the signal processor circuit 22 is . . . written to the bank A of the SDRAM”), 7:30–44 (“if the operator operates the shutter button, a still picture of the subject at the operation is recorded. . . This still image display is sustained while the shutter button is held pressed.”)

Thus, Kaku does not determine whether the video data is higher resolution or lower resolution, and does not “suggest[] any way or technique to distinguish between high and low resolution video”; rather, Kaku “simply distinguishes between high resolution still pictures . . . and video.” Reply Br. 5.

The Examiner also has not shown that the additional teachings of Kumar, Endresen, and Yang make up for the above-noted deficiencies of Kaku. Thus, for the reasons set forth above, we do not sustain the Examiner’s rejection of independent claim 1 and claims 2–30 argued therewith (App. Br. 7).

CONCLUSION

On the record before us, we conclude Appellants have not demonstrated the Examiner erred in rejecting claims 1–30 under

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35 U.S.C. § 101, but have demonstrated the Examiner erred in rejecting claims 1–30 under 35 U.S.C. § 103(a).

DECISION

As such, we AFFIRM the Examiner’s final rejection of claims 1–30 under 35 U.S.C. § 101. However, we REVERSE the Examiner’s final rejection of claims 1–30 under 35 U.S.C. § 103(a).

Because we have affirmed at least one ground of rejection with respect to each claim on appeal, we affirm the Examiner’s decision rejecting claims 1, 3–16, and 18–33. *See* 37 C.F.R. § 41.50(a)(1).

No time period for taking any subsequent action in connection with this appeal may be extended under 37 C.F.R. § 1.136(a)(1)(iv).

AFFIRMED