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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/459,797	06/12/2003	Mark M. Leather	00100.02.0053	4148
	7590 12/14/2004		EXAMINER	
Christopher J. Reckamp Vedder, Price, Kaufman & Kammholz 222 North LaSalle Street Chicago, IL 60601			HSU, JONI	
			ART UNIT	PAPER NUMBER
			2676	

DATE MAILED: 12/14/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

PTO-90C (Rev. 10/03)

Office Action Summary	Application No. 10/459,797	Applicant(s) LEATHER ET AL.	
	Examiner Joni Hsu	Art Unit 2676	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1) ☐ Responsive to communication(s) filed on ____.

2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.

3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4) ☒ Claim(s) 1-24 is/are pending in the application.

4a) Of the above claim(s) ____ is/are withdrawn from consideration.

5) ☐ Claim(s) ____ is/are allowed.

6) ☒ Claim(s) 1-24 is/are rejected.

7) ☒ Claim(s) 9 and 24 is/are objected to.

8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

9) ☐ The specification is objected to by the Examiner.

10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a) ☐ All b) ☐ Some * c) ☐ None of:

1. ☐ Certified copies of the priority documents have been received.

2. ☐ Certified copies of the priority documents have been received in Application No. ____.

3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)

2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
 Paper No(s)/Mail Date ____.

4) ☐ Interview Summary (PTO-413)
 Paper No(s)/Mail Date. ____.

5) ☐ Notice of Informal Patent Application (PTO-152)

6) ☐ Other: ____.

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DETAILED ACTION

Claim Objections

1. Claim 9 objected to because of the following informalities: In line 6 on page 17, the claim states “two graphics pipeline” where it should state “two graphics pipelines”. Appropriate correction is required.
2. Claim 24 objected to because of the following informalities: In lines 14-15 on page 20, the claim states “set of tiles *or* the repeating tile pattern” where it should state “set of tiles *of* the repeating tile pattern”. In line 18 on page 20, the claim states “*receive* transmit and receive” where it should state “transmit and receive”. Appropriate correction is required.

Claim Rejections - 35 USC § 112

3. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.
4. Claims 9, 12, and 13 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 9 recites the limitation "the first pipeline" and “the second pipeline”. There is insufficient antecedent basis for this limitation in the claim.

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Claim 12 recites the limitation "the pixel data". There is insufficient antecedent basis for this limitation in the claim.

Claim 13 recites the limitation "the front end circuitry" and "the back end circuitry".
There is insufficient antecedent basis for this limitation in the claim.

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented 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. Patentability shall not be negated by the manner in which the invention was made.

6. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

7. Claims 1-8, 10-18, and 20-23 are rejected under 35 U.S.C. 103(a) as being unpatentable over Migdal (US006762763B1) in view of Heirich (US006753878B1), further in view of Duffy (US005179640A).

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8. With regard to Claim 1, Migdal describes a graphics processing circuit, comprising a graphics pipeline (Col. 1, line 66-Col. 2, line 17) operative to process data in a corresponding set of tiles, the graphics pipeline operative to process data in a dedicated tile (Col. 8, lines 20-23).

However, Migdal does not teach that there are at least two graphics pipelines and each graphics pipeline processes data in a dedicated tile. However, Heirich describes multiple graphics pipelines (22, 24, Figure 1; Col. 5, lines 31-33) and each graphics pipeline processes data in a dedicated part of the image (PI, Col. 6, lines 1-6).

It would have been obvious to one of ordinary skill in this art at the time of invention by applicant to modify the device of Migdal so that there are at least two graphics pipelines and each graphics pipeline processes data in a dedicated tile as suggested by Heirich. Heirich suggests that it is advantageous to use multiple graphics pipelines because each pipeline can work on a different process or part of the image without waiting for the other processes to finish first (Col. 2, lines 24-39), so using multiple graphics pipelines speeds up the processing operation.

However, Migdal and Heirich do not teach a repeating tile pattern, wherein the repeating tile pattern includes a horizontally and vertically repeating pattern of square regions. However, Duffy describes a repeating tile pattern, wherein the repeating tile pattern includes a horizontally and vertically repeating pattern of square regions (Col. 3, line 67-Col. 4, line 4; Col. 4, lines 31-32; Col. 5, lines 17-20).

It would have been obvious to one of ordinary skill in this art at the time of invention by applicant to modify the devices of Migdal and Heirich to include a repeating tile pattern, wherein the repeating tile pattern includes a horizontally and vertically repeating pattern of square regions

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