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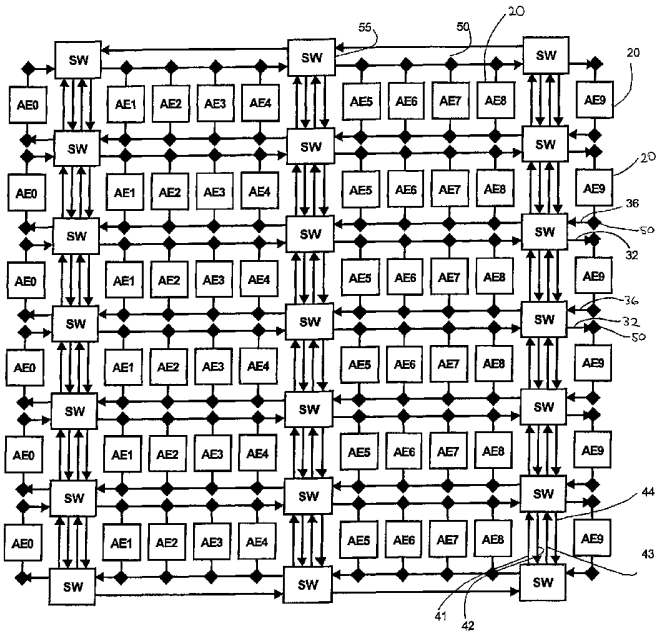
[Continued on next page]

(54) Title: PROCESSOR ARRAY



(57) Abstract: An array of processing elements can incorporate a degree of redundancy. Specifically, the array includes one or more spare, or redundant, rows of array elements, in addition to the number required to implement the intended function or functions of the device. If a defect occurs in one of the processors in the device, then the entire row which includes that defective processor is not used, and is replaced by a spare row.

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For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

INTERNATIONAL SEARCH REPORT

Inter ıal Application No
PCT/GB 03/02772

A. CLASSIFICATION OF SUBJECT MATTER
IPC 7 G06F15/80

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)
IPC 7 G06F

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)
EPO-Internal, INSPEC

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category °	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	US 5 253 308 A (JOHNSON WILLIAM K) 12 October 1993 (1993-10-12)	1,5
Y	column 12, line 6 - line 21; figure 2a	2-4
Y	POPLI S P ET AL: "A reconfigurable VLSI array for reliability and yield enhancement" SYSTOLIC ARRAYS, 1988., PROCEEDINGS OF THE INTERNATIONAL CONFERENCE ON SAN DIEGO, CA, USA 25-27 MAY 1988, WASHINGTON, DC, USA,IEEE COMPUT. SOC. PR, US, 25 May 1988 (1988-05-25), pages 631-642, XP010033160 ISBN: 0-8186-8860-2 page 635, line 1 - line 12	2-4

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[X] Further documents are listed in the continuation of box C.

[X] Patent family members are listed in annex.

° Special categories of cited documents :

"A" document defining the general state of the art which is not considered to be of particular relevance

"E" earlier document but published on or after the international filing date

"L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)

"O" document referring to an oral disclosure, use, exhibition or other means

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"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone

"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art.

"&" document member of the same patent family

Date of the actual completion of the international search	Date of mailing of the international search report
30 November 2004	09. 12. 2004

Name and mailing address of the ISA	Authorized officer
European Patent Office, P.B. 5818 Patentlaan 2 NL - 2280 HV Rijswijk Tel. (+31-70) 340-2040, Tx. 31 651 epo nl, Fax: (+31-70) 340-3016	Michel, T

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INTERNATIONAL SEARCH REPORT

Inter l Application No
PCT/GB 03/02772

C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

Category °	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	JOHN L K ET AL: "A DYNAMICALLY RECONFIGURABLE INTERCONNECT FOR ARRAY PROCESSORS" IEEE TRANSACTIONS ON VERY LARGE SCALE INTEGRATION (VLSI) SYSTEMS, IEEE INC. NEW YORK, US, vol. 6, no. 1, 1 March 1998 (1998-03-01), pages 150-157, XP000739209 ISSN: 1063-8210 page 153, left-hand column, line 23 - right-hand column, line 12	1-5
A	WO 01/02960 A (COMMISSARIAT ENERGIE ATOMIQUE ; CLERMIDY FABIEN (FR); THIERRY COLLETTE) 11 January 2001 (2001-01-11) the whole document	1-5
A	SHIGEI N ET AL: "ON EFFICIENT SPARE ARRANGEMENTS AND AN ALGORITHM WITH RELOCATING SPARES FOR RECONFIGURING PROCESSOR ARRAYS" IEICE TRANSACTIONS ON FUNDAMENTALS OF ELECTRONICS, COMMUNICATIONS AND COMPUTER SCIENCES, INSTITUTE OF ELECTRONICS INFORMATION AND COMM. ENG. TOKYO, JP, vol. E80-A, no. 6, 1 June 1997 (1997-06-01), pages 988-995, XP000740592 ISSN: 0916-8508 the whole document	1-5
X	WO 02/50624 A (CLAYDON ANNE PATRICIA ; CLAYDON ANTHONY PETER JOHN (GB); PICOCHIP DESI) 27 June 2002 (2002-06-27) page 7, line 16 - page 11, line 18; figures 1-4	6-8
A	SCHMIDT U ET AL: "DATAWAVE: A SINGLE-CHIP MULTIPROCESSOR FOR VIDEO APPLICATIONS" IEEE MICRO, IEEE INC. NEW YORK, US, vol. 11, no. 3, 1 June 1991 (1991-06-01), pages 22-25,88, XP000237234 ISSN: 0272-1732 page 23, left-hand column, line 24 - page 24, left-hand column, line 8; figure 1	6-8
A	WO 91/11770 A (CELLWARE KFT) 8 August 1991 (1991-08-08) the whole document	6-8

INTERNATIONAL SEARCH REPORT

In tional application No.
PCT/GB 03/02772

Box I Observations where certain claims were found unsearchable (Continuation of item 1 of first sheet)

This International Search Report has not been established in respect of certain claims under Article 17(2)(a) for the following reasons:

1. ☐ Claims Nos.:
because they relate to subject matter not required to be searched by this Authority, namely:

2. ☐ Claims Nos.:
because they relate to parts of the International Application that do not comply with the prescribed requirements to such an extent that no meaningful International Search can be carried out, specifically:

3. ☐ Claims Nos.:
because they are dependent claims and are not drafted in accordance with the second and third sentences of Rule 6.4(a).

Box II Observations where unity of invention is lacking (Continuation of item 2 of first sheet)

This International Searching Authority found multiple inventions in this international application, as follows:

see additional sheet

1. ☒ As all required additional search fees were timely paid by the applicant, this International Search Report covers all searchable claims.

2. ☐ As all searchable claims could be searched without effort justifying an additional fee, this Authority did not invite payment of any additional fee.

3. ☐ As only some of the required additional search fees were timely paid by the applicant, this International Search Report covers only those claims for which fees were paid, specifically claims Nos.:

4. ☐ No required additional search fees were timely paid by the applicant. Consequently, this International Search Report is restricted to the invention first mentioned in the claims; it is covered by claims Nos.:

Remark on Protest

☐ The additional search fees were accompanied by the applicant's protest.

☒ No protest accompanied the payment of additional search fees.

FURTHER INFORMATION CONTINUED FROM PCT/ISA/ 210

This International Searching Authority found multiple (groups of) inventions in this international application, as follows:

1. claims: 1-5

   A method of replacing a faulty processing element in a processor array

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2. claims: 6-8

   Array processor comprising pairs of horizontal and vertical buses interconnecting switches for routing selectable data

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INTERNATIONAL SEARCH REPORT

Inter nal Application No
PCT/GB 03/02772

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