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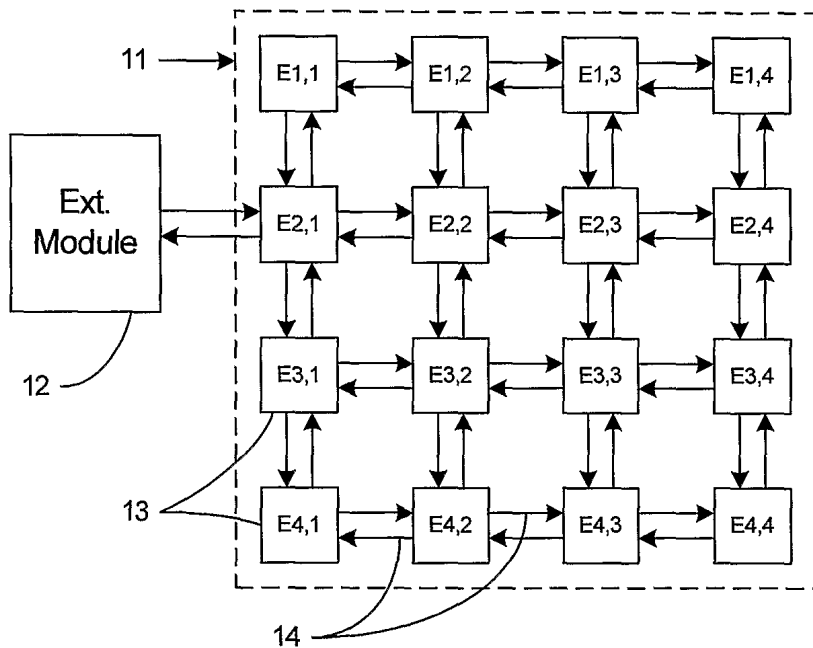
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**Declarations under Rule 4.17:**  
— as to applicant's entitlement to apply for and be granted a patent (Rule 4.17(ii))  
— as to the applicant's entitlement to claim the priority of the earlier application (Rule 4.17(iii))  
— of inventorship (Rule 4.17(iv))

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(54) Title: ARRAY OF DATA PROCESSING ELEMENTS WITH VARIABLE PRECISION INTERCONNECT



(57) Abstract: Systems and methods for processing data using an array (11) of data processing elements (13) that are coupled together with a variable precision interconnect (14). One embodiment comprises data processing elements coupled by variable precision interconnects to form a row-column array (11). The interconnects (14) and/or data processing elements (13) may be synchronous or asynchronous. The data processing elements (13) may operate in a fixed manner, or they may be programmable, and selectable data processing elements (13) in the array may be bypassed. The interconnects (14) and data processing elements (13) may be configured to handle data in a digit-serial manner, with tags (25, 26) for each digit identifying whether the digit is the first and/or last digit in a data word. The data processing elements may be coupled to a system bus (54, 55) that

enables communication of data between the data processing elements and external devices and allows control information to be communicated to and from the data processing elements.

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## INTERNATIONAL SEARCH REPORT

International application No.

PCT/US 06/15034

## A. CLASSIFICATION OF SUBJECT MATTER

IPC(8): G06F 15/00 (2007.01)

USPC: 712/11

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)  
USPC: 712/11Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched  
USPC: 712/10, 11, 16, 18; 710/5, 20, 65 (view text search terms below)

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

PubWEST(PGPB,USPT,EPAB,JPAB; PLUR=YES; DialogPRO(Engineering); Google Scholar

Search Terms: array of data processing elements, coupled together, variable precision interconnect, row-column array, synchronous, asynchronous, operate fixed, programmable, elements array bypassed, configured handle data digit-serial, tags etc.

## C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	US 2004/0246503 A1 (SILVERBROOK) 09 December 2004 (09.12.2004) entire document, (especially Abstract, FIG.3A and para [0029] , [0037], [0487] , [0953], [1599], [2436], [0953] and [3068])	1-20
A	US 2004/0054870 A1 (KIRSCH) 18 March 2004 (18.03.2004)	1-20
A	US 5,274,832 A (KHAN) 28 December 1993 (28.12.1993)	1-20
A	KUNG, Ling-Pei. 'Obtaining Performance and Programmability Using Reconfigurable Hardware for Media Processing', (PhD thesis), February 2002. [retrieved on 2007-07-23]. Retrieved from the Internet: <URL: <a href="http://web.media.mit.edu/~vmb/papers/kungphd.pdf">http://web.media.mit.edu/~vmb/papers/kungphd.pdf</a> >	1-20

 Further documents are listed in the continuation of Box C.

\* Special categories of cited documents:

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

"P" document published prior to the international filing date but later than the priority date claimed

"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention

"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

"&amp;" document member of the same patent family

Date of the actual completion of the international search

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