



United States Patent [19]

[11] Patent Number: 6,098,178

Moretti et al.

[45] Date of Patent: Aug. 1, 2000

[54] TIME SYNCHRONIZATION ALGORITHM FOR MASSIVELY PARALLEL PROCESSOR SYSTEMS

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[57] ABSTRACT

[21] Appl. No.: 09/090,224

A time synchronized multi-processor system and a method for determining the absolute time when an event occurs in the system are described. The system has a plurality of processor elements, a system clock for generating a periodic time signal which is received by each of the processor elements, event reports generated by at least one of the processor elements, a system controller for reading the event reports, and a time board for generating an interrupt signal which causes the system controller to read the event report and to determine the absolute time of the event. The method for determining the absolute time when the event occurs in the system comprises the steps of providing a plurality of processor elements, providing a system clock for generating a time signal, detecting an event and providing at least one processor element with a signal representative of the event, generating an event report with the processor(s) and periodically generating a second or interrupt signal using a time board for causing a system controller board to search for any such event report, read the event report, and determine the absolute time of day of any event in the event report.

[22] Filed: May 22, 1998

[51] Int. Cl.⁷ G06F 1/04

[52] U.S. Cl. 713/500; 713/502

[58] Field of Search 713/400, 500, 713/502, 600

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14 Claims, 2 Drawing Sheets

