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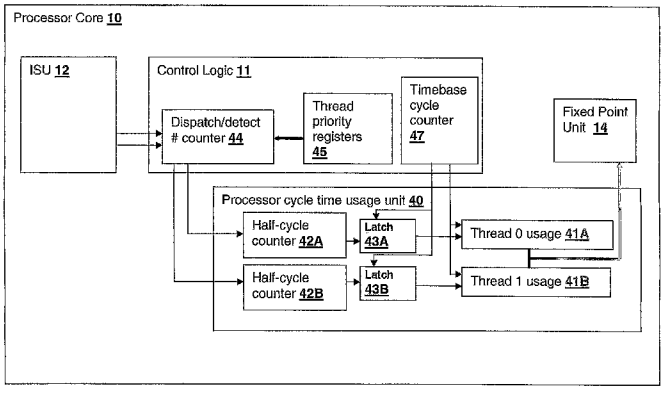
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(54) Title: ACCOUNTING METHOD AND LOGIC FOR DETERMINING PER-THREAD PROCESSOR RESOURCE UTILIZATION IN A SIMULTANEOUS MULTI-THREADED (SMT) PROCESSOR



(57) Abstract: An accounting method and logic for determining per-thread processor resource utilization in a simultaneous multi-threaded (SMT) processor provides a mechanism for accounting for processor resource usage by programs and threads within programs. Relative resource use is determined by detecting instruction dispatches for multiple threads active within the processor, which may include idle threads that are still occupying processor resources. If instructions are dispatched for all threads or no threads, the processor cycle is accounted equally to all threads. Alternatively if no threads are in a dispatch state, the accounting may be made using a prior state, or in conformity with ratios of the threads' priority levels. If only one thread is dispatching, that thread is accounted the entire processor cycle. If multiple threads are dispatching, but less than all threads are dispatching (in processors supporting more than two threads), the processor cycle is billed evenly across the dispatching threads. Multiple dispatches may be detected for the threads and a fractional resource usage determined for each thread and the counters may be updated in accordance with their fractional usage.

WO 2004/095282 A1

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