Title (en)

METHOD AND APPARATUS FOR PROCESSOR PIPELINE SEGMENTATION AND RE-ASSEMBLY

Title (de)

VERFAHREN UND VORRICHTUNG ZUM ZERLEGEN UND ZUSAMMENFÜGEN VON PROZESSORPIPELINE

Title (fr)

PROCEDE ET APPAREIL DE SEGMENTATION ET DE REASSEMBLAGE D'UN PROCESSEUR PIPELINE

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Application

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Abstract (en)

[origin: WO0070483A2] An improved method and apparatus for implementing instructions in a pipelined central processing unit (CPU) or user-customizable microprocessor. In a first aspect of the invention, an improved method of controlling the operation of the pipeline in situations where one stage has been stalled or interrupted is disclosed. In one embodiment, a method of pipeline segmentation ("tearing") is disclosed where the later, non-stalled stages of the pipeline are permitted to continue despite the stall of the earlier stage. Similarly, a method which permits instructions present at earlier stages in the pipeline to be re-assembled ("catch-up") to later stalled stages is also described. A method of synthesizing a processor design incorporating the aforementioned segmentation and re-assembly methods, and a computer system capable of implementing this synthesis method, are also described.

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