DATA PROCESSING SYSTEM AND METHOD FOR COMPLETING OUT-OF-ORDER INSTRUCTIONS

ABSTRACT

During operation of a pipelined data processing system (100), an interruptible instruction table (238) is used to store target identifiers (224) associated with instructions which may result in speculative execution. During operation of the interruptible instruction table, a pointer, referred to as a completing instruction buffer entry pointer, points to a bottom of the interruptible instruction table if that table includes any instruction. An entry at the bottom of the interruptible instruction table is a next instruction to complete. This entry includes a target identifier, referred to as a non-speculative-non-interruptible TID, may be used to release resources held for all prior executed instructions. The data processing system determines the value of the non-speculative-non-interruptible TID to ensure that order determination is preserved and provides a true speculative execution point.

Figure 1.