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PROJECT STRETCH  
LINK COMPUTER MEMO NO. 7

Subject: Sensing for Overflow in One of the Count One  
Registers for a 64 Bit Word Length

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Let us suppose that the programmer arbitrarily divides each memory word into four cells in which he wishes to count (See Link Memo #6), and he wishes to sense when any of the four cells is full.

A method for doing this could be to have a 64 bit register with a compare circuit for the "one" side of each bit and to load in the 64 bit register a word with a one in the 63rd, 47th, 31st, and 15th position. (64 bit word is numbered 0 through 63.) If when inserting a one or upon reading out of the memory the data word, a one is found in any of the four bit positions in which the ones have been inserted in the compare register, a signal could be generated indicating that the cell count had overflowed into the overflow position.

(This effectively makes the register 1/2 of the size of the number of bits: that is, the register instead of being 16 bits in length would be effectively 15 bits in length, with the highest ordered bit the overflow position.)

This same scheme could be used to sense for a branch in either the program, during a Table Look-Up instruction, or in the indirect address chain for a Table Look-Up instruction with indirect addressing.

WAH/jh

  
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