

METHOD AND SYSTEM FOR SELECTING AN
OPTIMAL REARRANGEMENT SEQUENCE FOR
A CROSS-CONNECT COMMUNICATIONS MATRIX

ABSTRACT OF THE DISCLOSURE

A method and system for determining the minimum number of rearrangements for connecting an input gate to an output gate through a rearrangeably blocked communications matrix represent the communications matrix by a square matrix having a first dimension that represents the input stage switches of the communication matrix, and a second dimension that represents the output stage switches of the communications matrix, and wherein the square matrix has cells each representing an intersection of the first dimension with the second dimension and indicating a possible center stage switch connection through of the communications matrix. The method and system identify a blocked center stage switch of the communications matrix in terms of the first dimension and the second dimension and identify a pair of center stage switches, where one of which does not have the same output stage switch as the blocked center stage switch, and the other of which does not have the same input stage switch as the blocked center stage switch. In parallel, the number of rearrangement steps necessary for a rearrangement sequence through the communications matrix that uses the first center stage switch and, then, the number of rearrangement steps for a rearrangement sequence that uses the other center stage switch are determined. The method and system terminate these number determining functions upon first determining the rearrangement sequence requiring the smaller number of rearrangement steps.

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