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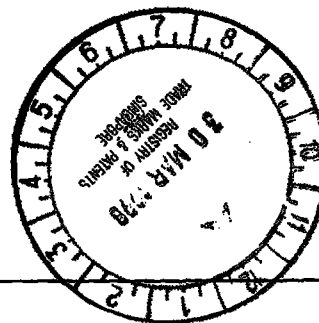
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(54) Title: ROUTE FINDING IN COMMUNICATIONS NETWORKS

(57) Abstract

A method of determining a restoration route (or an additional route) in a fully or partially meshed communications network of nodes, comprising setting, at a node which initially determines itself to be the slave end node for an existing route, a timeout for receiving a number of forward route-finder signatures from which it will select the signature representing the potential restoration route having the shortest length and return a route confirmation signature; switching, if no route-finder signatures have been received by the expiry of the timeout, to act as master end node for the existing route and send reverse route-finder signatures to its neighbouring nodes; switching, upon receipt of a reverse route-finder signature at a node which initially determines itself to be the master end node for an existing route, to act as slave end node, and send a corresponding return signature. Where a slave end node receives a backtrack signature indicating that the potential restoration route no longer has sufficient capacity, the node will switch to act as master end node. Where a forward route-finder signature is received after a node has sent a reverse route-finder signature, a priority route confirmation signature is sent. The route-finder signatures have a count field to indicate the direction of travel and the number of times that the sending node has switched to act as master end node, forward signatures have counts 1,3, etc., and reverse signatures have counts 2,4, etc.. Where a node has sent a forward route-finder signature, received a reverse route-finder signature, sent a confirmation signature, and subsequently receives a priority confirmation signature, then unless a backtrack signature is received two restoration routes will be established and the nodes will select the better one.

