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(54) METHOD OF OPTIMIZING A ROUTING IN A COMMUNICATIONS NETWORK

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(57) **ABSTRACT**

A computer-implemented method optimizes a routing of data traffic in a communications network by using a quantum concept processor. A set of potential short communication paths among possible communication paths between respective origin nodes and respective destination nodes of captured traffic demands is specified. The edges within the set of potential short communication paths are assigned a respective usage capacity limit. Fractional capacity usages of the edges are calculated based on respective usage capacity limits of the edges. The calculated fractional capacity usages are formulated as terms of a quadratic stress function. An optimized routing is determined by using a quantum concept processor, thereby selecting for each traffic demand one short communication path from the set of potential short communication paths such that the quadratic stress function is minimized.