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(54) **DEVICES AND METHODS FOR  
PRIVACY-PRESERVING ROUTING IN  
COMMUNICATION NETWORKS**

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**ABSTRACT**

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Devices and methods for routing data packets in a communication network from a source node to a destination node via one or more intermediate routing nodes in a privacy-preserving manner are disclosed. The source node is configured to concatenate a first routing vector element including a first bit pattern with an initial routing vector defining a bit string, encrypt the concatenation using a selected first encryption key, and replace a portion of the encrypted initial routing vector at a first position by the encrypted first routing vector element. Moreover, the source node is configured to concatenate a second routing vector element, including a second bit pattern and routing information of the destination node, with the modified routing vector, encrypt the concatenation using a selected second encryption key, and replace a portion of the encrypted modified routing vector at a second position by the encrypted second routing vector element.

(FIG. 1)

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