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(54) **COMPUTER-IMPLEMENTED SYSTEM AND METHOD FOR CONTROLLING PROCESSING STEPS OF A DISTRIBUTED SYSTEM**

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(57) **ABSTRACT**

A method of controlling and coordinating of processing steps in a distributed system can be implemented by an initiator node of a cyclically-ordered set of nodes participating in a blockchain network (e.g., Bitcoin blockchain). The method includes generating a private key and cryptographic shares thereof for the nodes of the set and distributing them. A locking value is determined based on the shares and a transaction is arranged to transmit control of a resource responsive to supply of a corresponding unlocking value. A circuit of transactions amongst the nodes each arranged to transmit control of a resource responsive to supply of an unlocking value corresponding to a locking value determined based on the share distributed to a first node of one of two adjacent nodes and a value received from another node immediately previous to it is prepared. The initiator node may belong to a cyclically-ordered set of initiator nodes.