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(54) **Title:** SYSTEMS AND METHODS FOR FEDERATED LEARNING USING DISTRIBUTED MESSAGING WITH ENTITLEMENTS FOR ANONYMOUS COMPUTATION AND SECURE DELIVERY OF MODEL

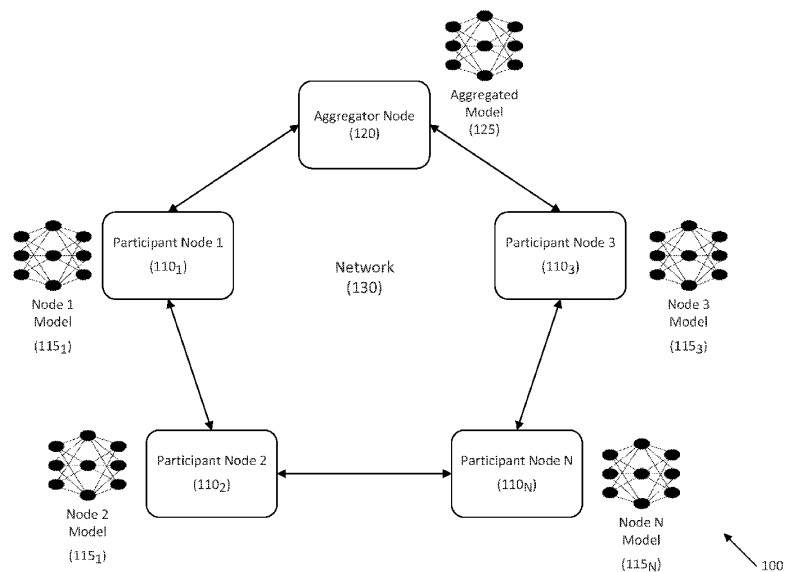


FIGURE 1

(57) **Abstract:** A method may include an aggregator node in a distributed computer network: generating an aggregator node public/private key pair; communicating the aggregator node public key to participant nodes; receiving, from each participant node, a message comprising a local machine learning (ML) model encrypted with a participant node private key and the aggregator node public key, and a participant node public key encrypted with the aggregator node public key; decrypting the local ML models and the participant node public keys using the aggregator node public key; decrypting the local ML models using the participant node public keys; generating an aggregated ML model based on the local ML models; encrypting, with each participant node public key, the aggregated ML model; and communicating the encrypted ML models to all participant nodes. Each participant node decrypts one of the encrypted ML models

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and modifies its local ML model with the aggregated ML model.