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(54) **Title:** SECURELY EXECUTING SMART CONTRACT OPERATIONS IN A TRUSTED EXECUTION ENVIRONMENT

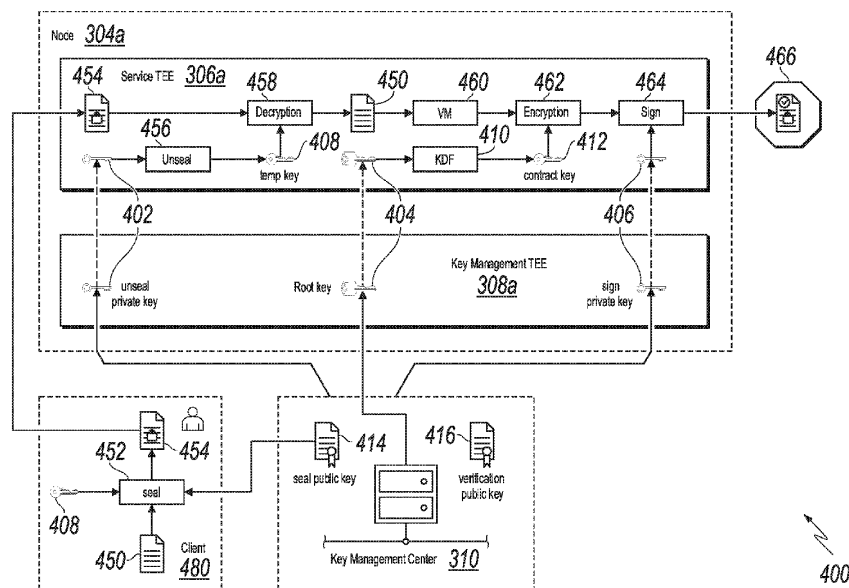


FIG. 4

(57) **Abstract:** Disclosed herein are methods, systems, and apparatus, including computer programs encoded on computer storage media, for securely executing smart contract operations in a trusted execution environment (TEE). One of the methods includes receiving, by a blockchain node participating in a blockchain network, a request to execute one or more software instructions in a service TEE hosted by the blockchain node, wherein the request is encrypted by a public key associated with the service TEE; decrypting the request with a first private key associated with the service TEE, wherein the first private key is paired with the public key; in response to decrypting the request, executing the one or more software instructions to produce an execution result; encrypting the execution result with a client encryption key associated with the service TEE to produce an encrypted result; and signing the encrypted result using a second private key associated with the TEE to produce a signed encrypted result.

[Continued on next page]

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