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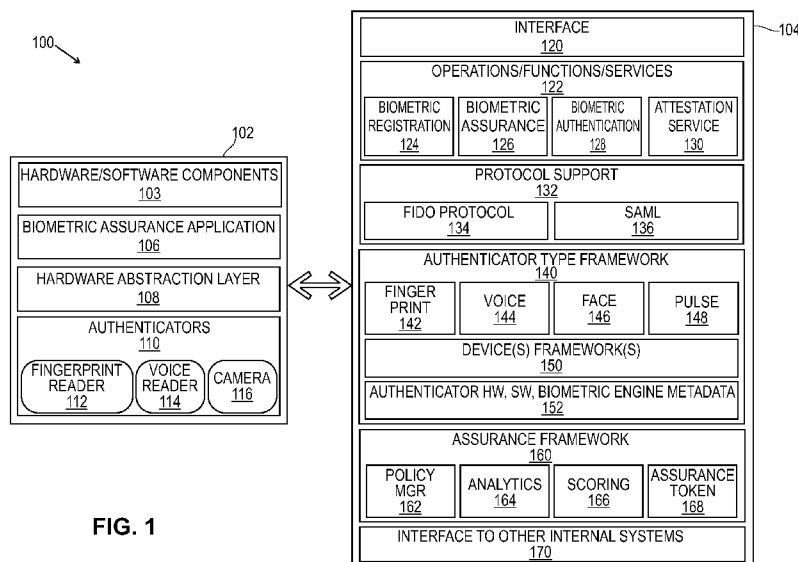


FIG. 1

(57) Abstract: Multi -factor authentication techniques are described that use secure push authentication technology for transactions. An embodiment includes receiving, by an assurance platform operating as an authentication service platform, a user authentication request and transaction data from an access control server (ACS), determining an authentication rule, generating a user validation request message, transmitting the user validation request message to a user mobile device, and receiving user authentication data. The assurance platform then validates the user authentication data, transmits a device authentication request, receives a device authentication response signed with a private key of the user, and authenticates the user based on the device authentication response and private key.