

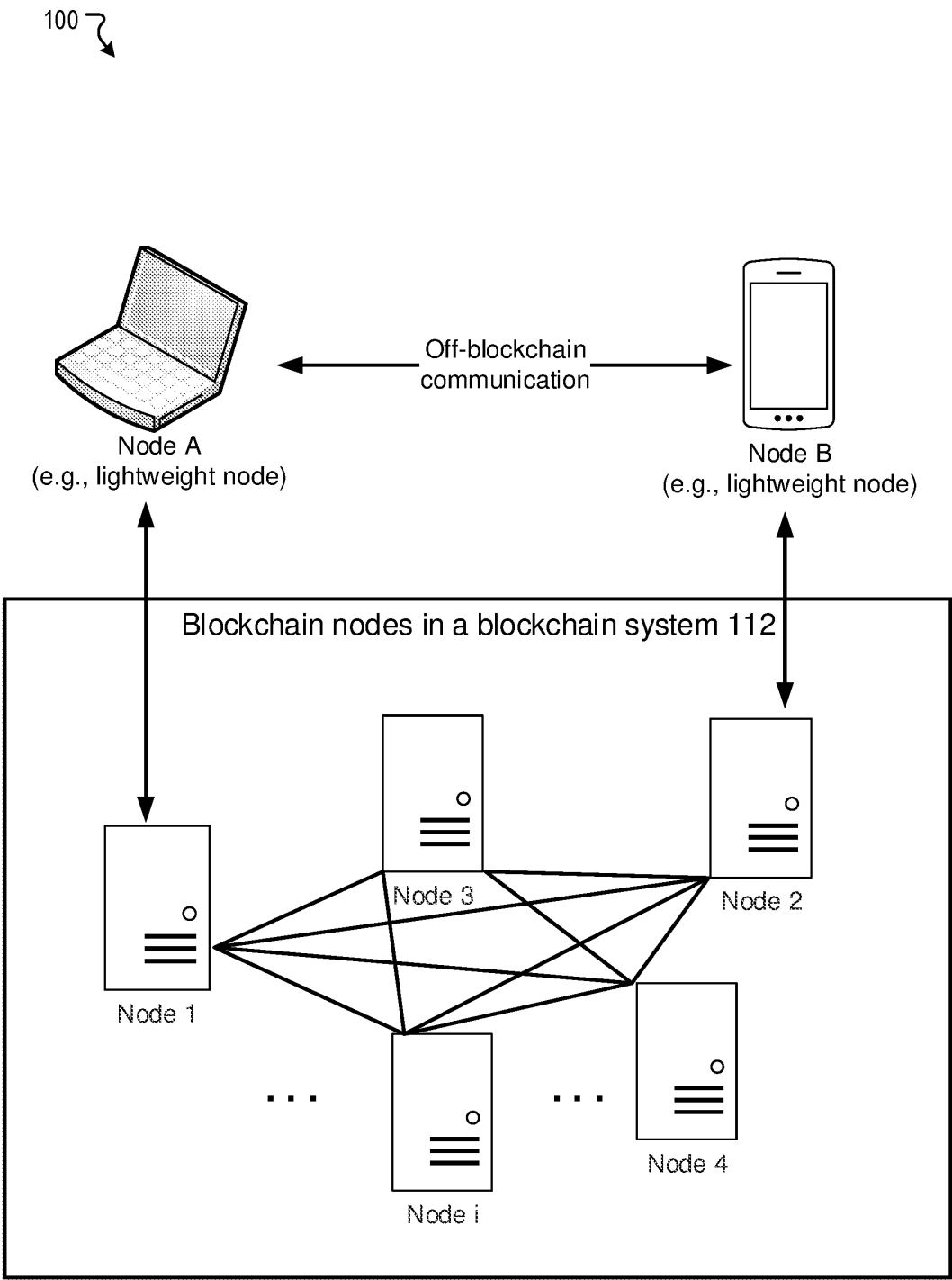


FIG.1

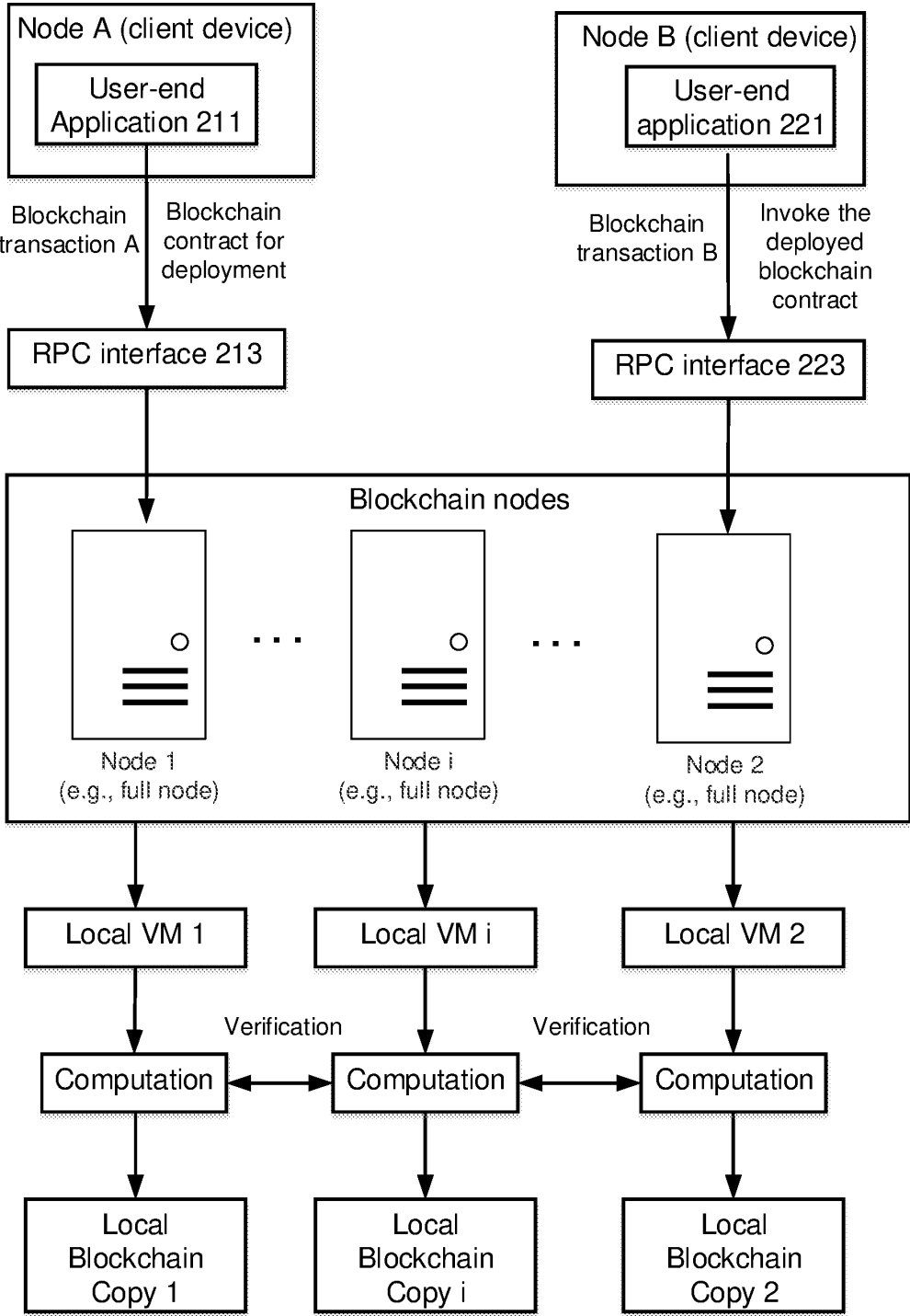


FIG.2

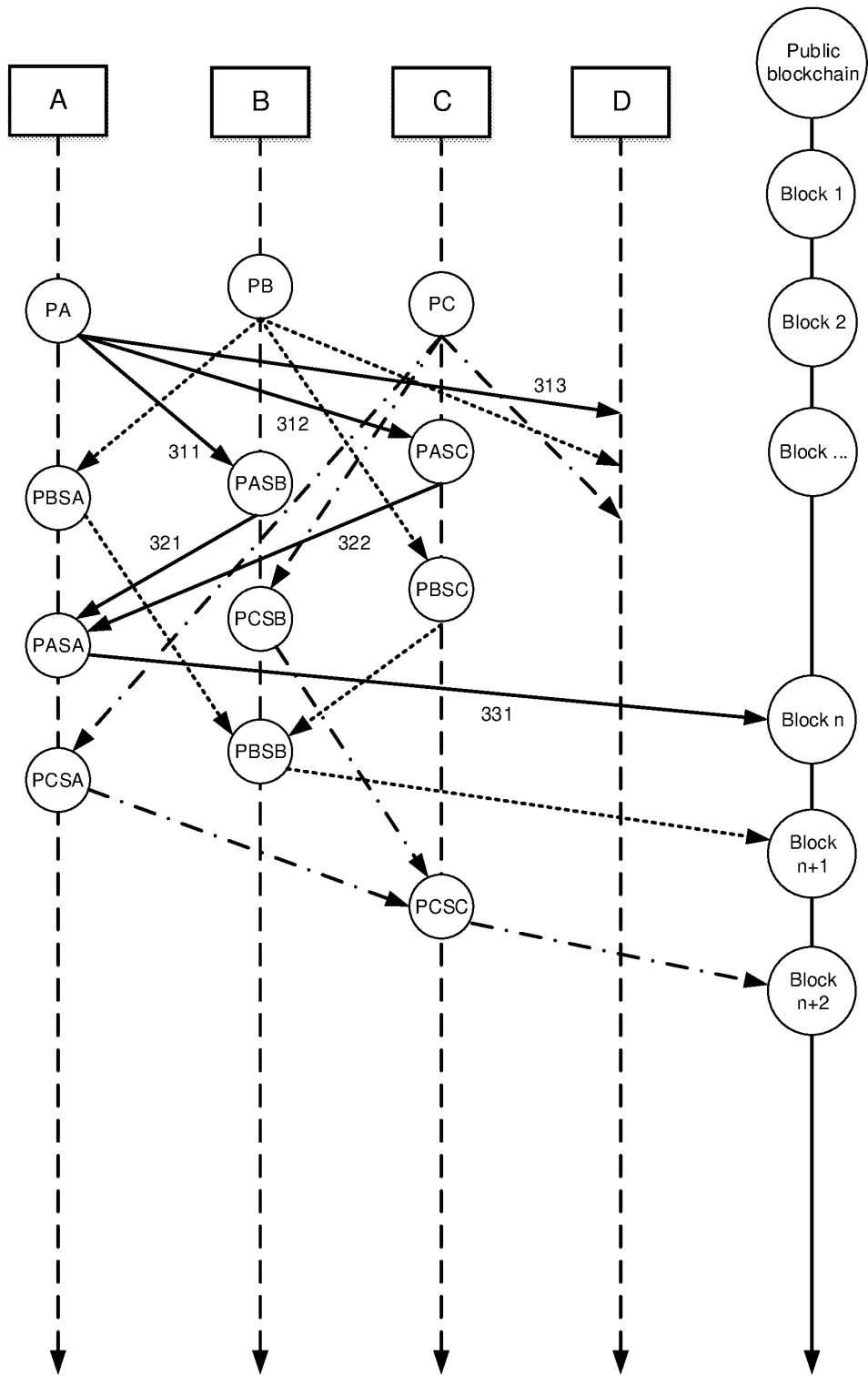


FIG.3

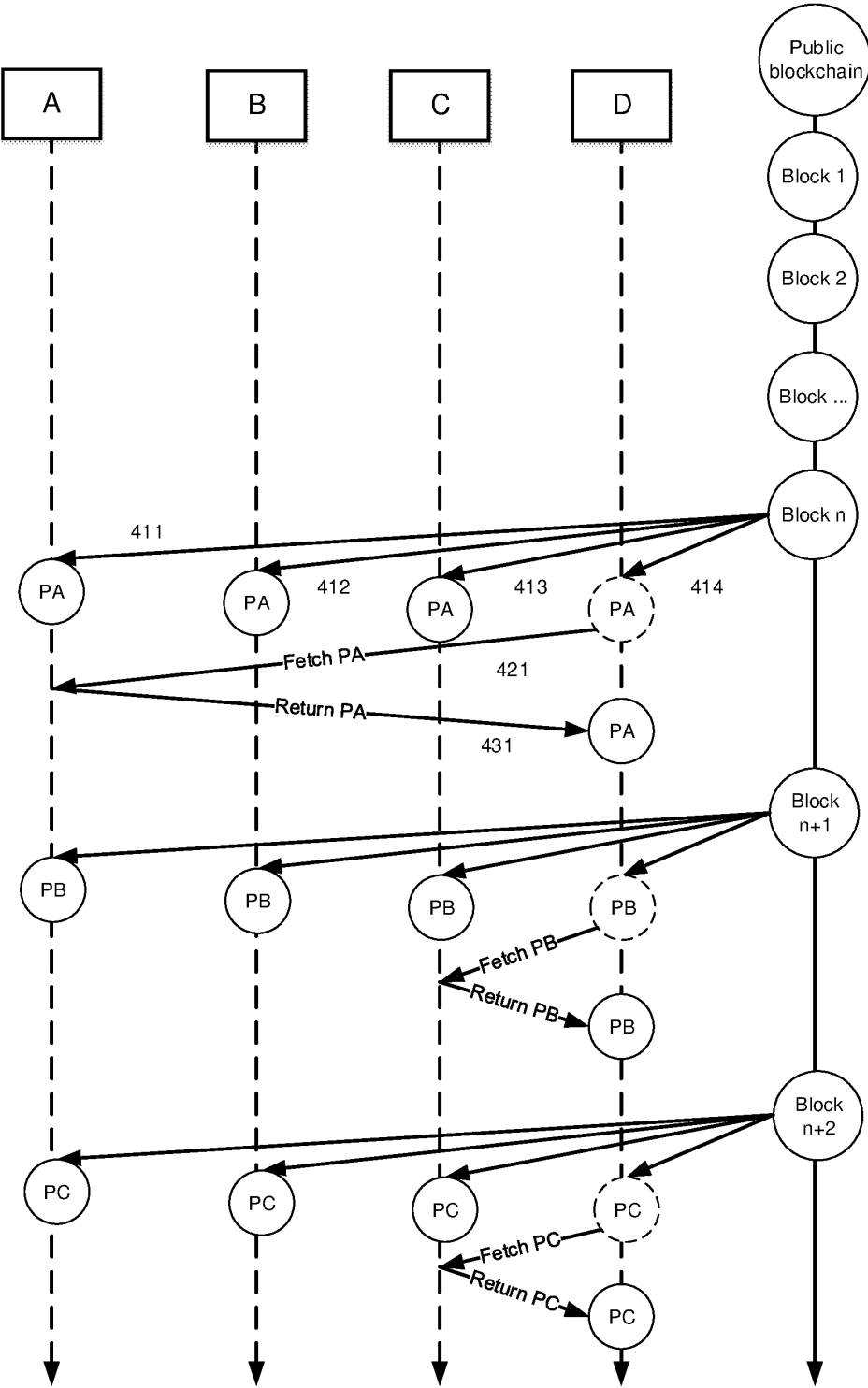


FIG.4

510 ↪

511: transmitting, at a first blockchain node of a number (N) of blockchain nodes that are involved in a private transaction, the private transaction to each of a plurality of second blockchain nodes of the N blockchain nodes, wherein N is at least four



512: obtaining, at the first blockchain node, at least (N-F) signatures certifying the private transaction respectively from at least (N-F) blockchain nodes of the first and second blockchain nodes, wherein F is a largest integer no more than $(N-1)/2$



513: submitting, at the first blockchain node, a hash value of the private transaction in association with the at least (N-F) signatures to one or more blockchain nodes of a public blockchain for adding into the public blockchain

FIG.5

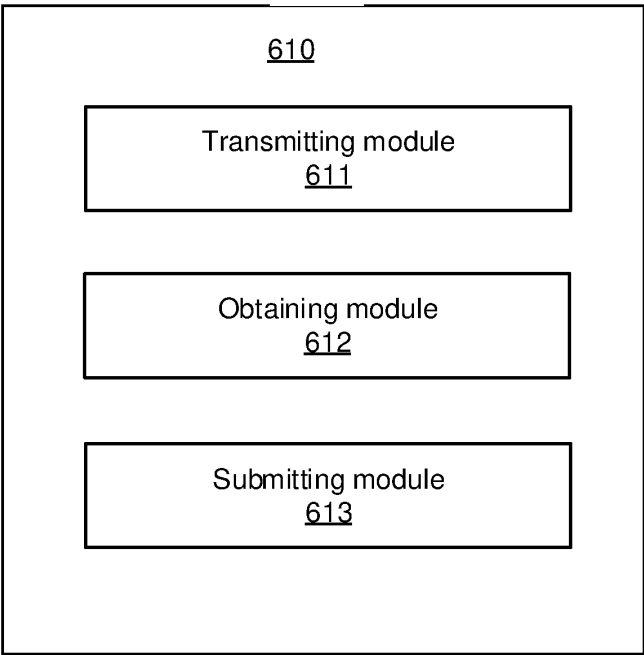


FIG.6

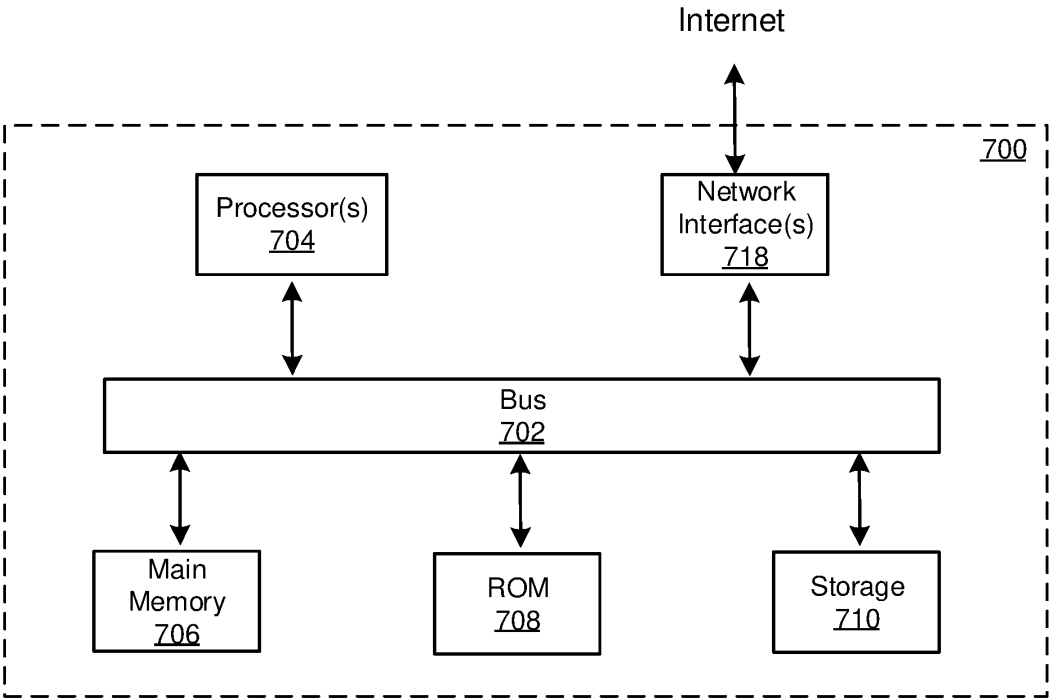


FIG.7