ABSTRACT

Cloud Service plays a vital role in developing the global communication networks. Cloud Service network has gained a lot of attention recently as a solution to mitigate the limitations of terrestrial networks because it has less stability and coverage. There are lot of inconveniences in it, such as low data processing capacity, storage, and limited security. Illegal access became the challenging one. Data processing capacity is minimal, storage and security are constrained due to Cloud physical limits in terms of available power and area, and the data may be exposed to alteration or contamination by intruders. Since Cloud Service has become more crucial in the development of global communication networks, there have been worries regarding its security. In this project, a Cloud Service network is suggested using blockchain technology and the QKD protocol, which is based on authentication and privacy protection. An architecture consisting of both traditional and limited devices linked to the blockchain through a wireless heterogeneous network has been built to achieve this goal. Registration, authentication, and revocation are used to carry out the communication. The satellite will send the acquired data to the terrestrial base station, which will record all key parameters on the distributed blockchain and delete any rogue node certificates from the blockchain. The proposed Cloud-based Blockchain and QKD system offers a high degree of security for future 6G and beyond networks, the Internet of Things, self-driving vehicles, and other rapidly evolving applications. Cloud Service plays a vital role in developing the global communication networks. Cloud Service network has gained a lot of attention recently as a solution to mitigate the limitations of terrestrial networks because it has less stability and coverage. There are lot of inconveniences in it, such as low data processing capacity, storage, and limited security. Illegal access became the challenging one. In this project, a Cloud Service network is suggested using blockchain technology and the QKD protocol, which is based on authentication and privacy protection.