

Blockchain Based Proxy Re-Encryption for Secure Data Sharing

Gunjal Aditya Ashok¹, Chikane Mayur Sakharam², Jadhav Shreyash Ashok³, Prof Ghodake G. K.⁴

Students, Department of Computer Engineering^{1,2,3}

Professor, Department of Computer Engineering⁴

Samarth College of Engineering and Management, Belhe, Junnar, Pune, Maharashtra, India

(AICTE Affiliated)

adityagunjalgil@gmail.com, mayurchikane121@gmail.com

shreyashjadhav533@gmail.com, gitaghodakecomp@gmail.com

Abstract: *This paper proposes a solution to secure data sharing within the Internet of Things (IoT) by combining Proxy Re-Encryption (PRE) and Blockchain. In IoT networks, data must often be shared across multiple devices and users, raising concerns over data privacy and security. Proxy Re-Encryption enables controlled data sharing without disclosing original information, while Blockchain technology offers an immutable, transparent ledger for tracking data transactions. Together, these technologies ensure data integrity, privacy, and efficient access control, making them suitable for modern IoT applications*

Keywords: Access control, Blockchain, Data Security, Proxy Re-Encryption(PRE), Internet of Things (IoT), Data Sharing, Security, Connected Device, Secure Data Sharing, Cryptographic Keys