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**Robert S Owor\*** ([robert.owor@asurams.edu](mailto:robert.owor@asurams.edu)), Department of Mathematics and CS, Albany, GA 31705, and **Zephyrinus C Okonkwo**. *A Block Chain Mathematical Algorithm for Secure Data Authentication, Storage, Transmission, Reception and Distribution.*

The goal of this paper is to present our initial findings on the relationship between Block Chain technology and elliptical curve cryptography on the one hand and its application to cyber security access control and authentication protocols on the other. We examine elliptical curve cryptography and the principles of Block Chain technology and how they can be applied to the improvement of secure data authentication, storage, reception, transmission and distribution using block chain mathematical algorithms. We next critically evaluate the current state and limitations of data encryption and decryption, authentication and access control protocols. We then introduce and discuss a modified Generalized Block Chain Mathematical algorithm and the potential application of this algorithm to addressing key problem areas in secure data authentication, storage, transmission, reception, and distribution. (Received September 20, 2016)