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(21) International Application Number: PCT/SG98/00003 (22) International Filing Date: 16 January 1998 (16.01.98) (71) Applicant (for all designated States except US): INSTITUTE OF SYSTEMS SCIENCE [SG/SG]; National University of Singapore, Heng Mui Keng Terrace, Kent Ridge, Singapore 119597 (SG). (72) Inventors; and (75) Inventors/Applicants (for US only): HU, Jian [CN/SG]; BLK 302 #11-531, Clementi Avenue 4, Singapore 120302 (SG). BAO, Feng [CN/SG]; BLK 351 #04-57, Clementi Avenue 2, Singapore 120351 (SG). DENG, Huijie [SG/SG]; 57 West Coast Lane, Singapore 127787 (SG). (74) Agent: GREENE-KELLY, James, Patrick; Lloyd Wise, Tanjong Pagar, P.O. Box 636, Singapore 910816 (SG).		(81) Designated States: AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CU, CZ, DE, DK, EE, ES, FI, GB, GE, GH, HU, ID, IL, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, UA, UG, US, UZ, VN, YU, ZW, ARIPO patent (GH, GM, KE, LS, MW, SD, SZ, UG, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, CH, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, ML, MR, NE, SN, TD, TG). Published <i>With international search report.</i>

(54) Title: A METHOD OF DATA STORAGE AND APPARATUS THEREFOR**(57) Abstract**

A method and apparatus for implementing a digital valuables depository system, for public or corporation users to store and to retrieve valuable digital information electronically is described. The apparatus is the electronic analogy to the physical safe boxes provided by banks whereby customers can keep their valuable belongings. The digital valuable depository service is provided by a Service Provider (SP). To make use of the services, a user first opens a Digital Safe account with the SP. The user can then deposit digital valuables into, as well as retrieve, copy and delete them from its account, all being carried out in an authentic and secure manner. To store a digital valuable, the SP first encodes it into N parts based on an encoding algorithm, and then stores the N parts into one or more data storage devices. To retrieve or copy a digital valuable which has been stored previously, the SP reads the N parts from corresponding storage devices, and recovers the digital valuable from the N parts based on a decoding algorithm. The encoding and decoding algorithms are selected such that the original digital valuable is recovered correctly even if some of the N parts are lost or corrupted. To avoid storage error/corruption accumulation, the system periodically checks the N parts of every stored digital valuables and recovers/corrects lost/corrupted parts when they are detected.

