

**(12) United States Patent**
Halliday et al.**(10) Patent No.: US 6,834,342 B2**
(45) Date of Patent: Dec. 21, 2004**(54) METHOD AND SYSTEM FOR SECURE COMMUNICATION OVER UNSTABLE PUBLIC CONNECTIONS****(75) Inventors:** David C. Halliday, Sunnyvale, CA (US); David W. Lauderback, Pleasanton, CA (US); Mounir Hahad, San Jose, CA (US); Michael A. S. Potts, Palo Alto, CA (US)**(73) Assignee:** EECAD, Inc., Santa Clara, CA (US)**(*) Notice:** Subject to any disclaimer, the term of this patent is extended or adjusted under 35 U.S.C. 154(b) by 625 days.**(21) Appl. No.:** 09/932,436**(22) Filed:** Aug. 16, 2001**(65) Prior Publication Data**

US 2002/0083345 A1 Jun. 27, 2002

Related U.S. Application Data**(60)** Provisional application No. 60/226,150, filed on Aug. 16, 2000.**(51) Int. Cl.⁷** G06F 01/24**(52) U.S. Cl.** 713/168; 713/200; 713/201**(58) Field of Search** 713/159, 200, 713/201**(56) References Cited**

U.S. PATENT DOCUMENTS

4,200,770 A	4/1980	Hellman et al.	
5,548,646 A	8/1996	Aziz et al.	
5,570,209 A	* 10/1996	Usui et al.	349/5
5,590,199 A	* 12/1996	Krajewski, Jr. et al.	713/159
5,606,668 A	* 2/1997	Shwed	713/201
5,805,803 A	9/1998	Birrell et al.	
5,918,022 A	6/1999	Batz et al.	
6,061,797 A	5/2000	Jade et al.	
6,061,798 A	5/2000	Coley et al.	

* cited by examiner

Primary Examiner—Thomas R. Peeso*(74) Attorney, Agent, or Firm*—Burns, Doane, Swecker & Mathis LLP**(57) ABSTRACT**

Methods and apparatus are disclosed which provide a system for secure and reliable communication between client computers residing on separate private networks but connected via a public network such as the Internet. The communications described herein are designed to function even if a persistent link can not be established between the two computers. Further, the systems and apparatus described herein are designed to traverse any locally installed gateways or firewalls to obtain access to a remote destination.

19 Claims, 11 Drawing Sheets