



US007992209B1

(12) **United States Patent**  
**Menoher et al.**

(10) **Patent No.:** **US 7,992,209 B1**  
(45) **Date of Patent:** **Aug. 2, 2011**

(54) **BILATERAL COMMUNICATION USING  
MULTIPLE ONE-WAY DATA LINKS**

(75) Inventors: **Jeffrey Charles Menoher**, Norwalk, CT  
(US); **James Hope**, Greenwich, CT  
(US); **Ronald Mraz**, South Salem, NY  
(US)

(73) Assignee: **Owl Computing Technologies, Inc.**,  
Ridgefield, CT (US)

(\*) Notice: Subject to any disclaimer, the term of this  
patent is extended or adjusted under 35  
U.S.C. 154(b) by 957 days.

(21) Appl. No.: **11/879,968**

(22) Filed: **Jul. 19, 2007**

(51) **Int. Cl.**  
**G06F 21/00** (2006.01)

(52) **U.S. Cl.** ..... **726/26; 726/16; 726/27**

(58) **Field of Classification Search** ..... **713/151-152**  
See application file for complete search history.

(56) **References Cited**

**U.S. PATENT DOCUMENTS**

4,672,601 A	6/1987	Ablay	370/277
5,282,200 A	1/1994	Dempsey et al.	370/245
5,450,493 A	9/1995	Maher	
5,703,562 A	12/1997	Nilsen	
5,769,527 A	6/1998	Taylor et al.	362/85
5,983,332 A	11/1999	Watkins	711/202
6,101,321 A	8/2000	Cok et al.	
6,262,993 B1	7/2001	Kirmse	370/463
6,317,831 B1*	11/2001	King	713/171
6,370,621 B1	4/2002	Keller	
6,393,529 B1	5/2002	Keller	
6,490,661 B1	12/2002	Keller et al.	
6,546,422 B1	4/2003	Isoyama et al.	709/225
6,631,401 B1	10/2003	Keller et al.	
6,665,268 B1	12/2003	Sato et al.	370/242

6,711,263 B1	3/2004	Nordenstam et al.	
6,728,213 B1	4/2004	Tzeng et al.	370/235
6,792,432 B1	9/2004	Kodavalla et al.	707/103 R
6,807,166 B1	10/2004	Ohura	370/352
6,976,087 B1	12/2005	Westfall et al.	
6,988,148 B1	1/2006	Sheth	709/245
7,016,085 B2	3/2006	Gonzalez et al.	358/405
7,095,739 B2	8/2006	Mamillapalli et al.	370/390

(Continued)

**FOREIGN PATENT DOCUMENTS**

WO WO 2004/105297 A2 12/2005

**OTHER PUBLICATIONS**

"Veto Uni-directional Network Bridge and Data Pump Applications  
White Paper", UNB and DPA White Paper by Tenix Datagate Pty Ltd,  
2002, pp. 1-6.

(Continued)

*Primary Examiner* — Minh Dinh  
*Assistant Examiner* — Venkat Perungavoor

(74) *Attorney, Agent, or Firm* — Amster, Rothstein &  
Ebenstein LLP

(57) **ABSTRACT**

A bilateral data transfer system comprising a first node, a second node, a first one-way link for unidirectional transfer of first data from the first node to the second node, and a second one-way link for unidirectional transfer of second data from the second node to the first node, wherein the unidirectional transfer of the first data across the first one-way link and the unidirectional transfer of the second data across the second one-way link are independently administered by the bilateral data transfer system. Under such bilateral data transfer system, each of the one-way data links may be subject to separately administered security restrictions and data filtering processes. Hence, it enables secure bilateral communications across different network security domains.

**23 Claims, 2 Drawing Sheets**

