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(54) **METHOD AND SYSTEM FOR MODIFYING COMMUNICATION FLOWS AT A PORT LEVEL**

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(52) **U.S. Cl.** **370/235**; 370/230; 370/231; 370/392; 370/401
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See application file for complete search history.

(56) **References Cited**

U.S. PATENT DOCUMENTS

3,919,479	A	11/1975	Moon et al.
4,230,990	A	10/1980	Lert, Jr. et al.
4,449,249	A	5/1984	Price
4,450,531	A	5/1984	Kenyon
4,454,594	A	6/1984	Heffron et al.
4,677,455	A	6/1987	Okajima
4,677,466	A	6/1987	Lert, Jr. et al.
4,739,398	A	4/1988	Thomas et al.
4,843,562	A	6/1989	Kenyon et al.
4,918,730	A	4/1990	Schulze
5,210,820	A	5/1993	Kenyon
5,247,688	A	9/1993	Ishigami
5,283,819	A	2/1994	Glick
5,327,521	A	7/1994	Savic et al.
5,437,050	A	7/1995	Lamb et al.
5,442,645	A	8/1995	Ugon
5,504,518	A	4/1996	Ellis
5,581,658	A	12/1996	O'Hagan et al.
5,588,119	A	12/1996	Vincent
5,612,729	A	3/1997	Ellis et al.

(Continued)

FOREIGN PATENT DOCUMENTS

EP 0349106 A1 1/1990

(Continued)

OTHER PUBLICATIONS

Baum, L., et al., "A Maximization Technique Occurring in the Statistical Analysis of Probabilistic Functions of Markov Chains," *The Annals of Mathematical Statistics*, vol. 41, No. 1, pp. 164-171, 1970.

(Continued)

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(57) **ABSTRACT**

A flow management system for modifying a communication flow from a port at a source IP address to a port at a destination IP address, the modifying being independent of communication flows at other ports at the source IP address and communication flows at other ports at the destination IP address. The system monitors a communication flow between a source port at a source IP address to a destination port at a destination IP address and determines whether a source IP address and destination IP address are participating in a media provider service. The system analyzes the communication flow content and modifies the communication flow from a specific source port to a specific destination port based on the content and whether the source and destination IP addresses are part of a media provider service.

21 Claims, 10 Drawing Sheets