

Exhibit H



(12) **United States Patent**
Posey, Jr.

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(54) **SYSTEM AND METHOD FOR PACKET CLASSIFICATION**

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(*) Notice: Subject to any disclaimer, the term of this patent is extended or adjusted under 35 U.S.C. 154(b) by 615 days.

This patent is subject to a terminal disclaimer.

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Related U.S. Application Data

(63) Continuation of application No. 10/138,760, filed on May 3, 2002, now Pat. No. 7,184,444, which is a continuation-in-part of application No. 09/698,666, filed on Oct. 27, 2000, now Pat. No. 6,665,495.

(51) **Int. Cl.**

- H04L 12/28** (2006.01)
- H04L 12/56** (2006.01)
- H04L 1/00** (2006.01)
- H04L 12/26** (2006.01)
- H04L 12/54** (2006.01)
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- G06F 15/16** (2006.01)

(52) **U.S. Cl.** 370/395.31; 370/395.43; 370/392; 370/395.1; 370/252; 370/398; 370/422; 370/428; 709/224; 709/249

(58) **Field of Classification Search** 370/395.31, 370/395.43, 392, 395, 252, 389, 393, 395.1, 370/398, 395.6, 422, 428; 709/224, 249

See application file for complete search history.

(56) **References Cited**

U.S. PATENT DOCUMENTS

5,253,248 A 10/1993 Dravida et al.

(Continued)

FOREIGN PATENT DOCUMENTS

EP 0849916 A2 6/1998

(Continued)

OTHER PUBLICATIONS

Borgonovo et al. Unslotted deflection routing in all-optical networks; Global Telecommunications Conference, 1993, including a Communication Theory Mini-Conference. Technical Program Conference Record, IEEE in Houston. GLOBECOM '93., IEEE, Nov. 29-Dec. 2, 1993.

(Continued)

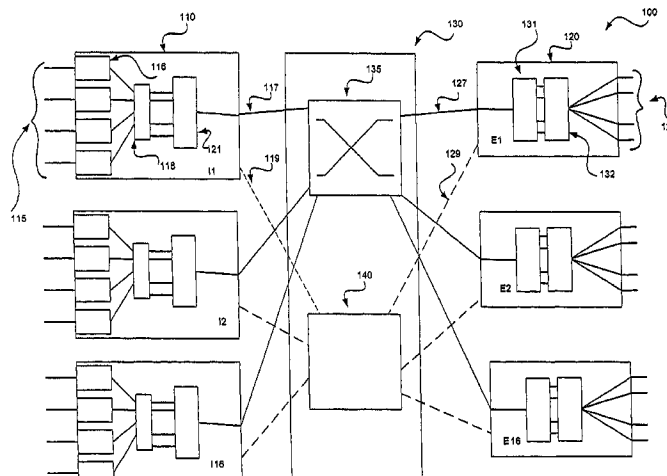
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(57) **ABSTRACT**

The present invention provides method for data packet processing in a telecommunications system. The method of the present invention can include the steps of (i) determining a set of classification parameters for a data packet at an ingress edge unit, wherein the classification parameters include a packet destination, (ii) communicating the data packet to an egress edge unit and (iii) routing the data packet to a destination egress port at the egress edge unit according to the classification parameters determined at the ingress edge unit. In one embodiment of the present invention, the classification parameters can include a destination egress edge unit, a destination egress port at the destination egress edge unit, and quality of service parameter for proper processing of the data packet.

21 Claims, 8 Drawing Sheets



US 8,116,315 B2

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U.S. PATENT DOCUMENTS

5,303,078	A	4/1994	Brackett et al.	
5,327,552	A	7/1994	Liew	
5,351,146	A	9/1994	Chan et al.	
5,416,769	A	5/1995	Karol	
5,469,284	A	11/1995	Haas	
5,477,530	A	12/1995	Ahmadi et al.	
5,486,943	A	1/1996	Sasayama et al.	
5,546,391	A *	8/1996	Hochschild et al.	370/413
5,617,413	A	4/1997	Monacos	
5,734,486	A	3/1998	Guillemot et al.	
5,737,106	A	4/1998	Sansonetti et al.	
5,757,526	A	5/1998	Shiragaki et al.	
5,848,055	A	12/1998	Fedyk et al.	
5,978,359	A	11/1999	Caldara et al.	
6,005,698	A	12/1999	Huber et al.	
6,023,456	A	2/2000	Chapman	
6,052,726	A	4/2000	Fontenot	
6,320,858	B1 *	11/2001	King et al.	370/390
6,345,040	B1	2/2002	Stephens et al.	
6,501,869	B1	12/2002	Athale	
6,567,408	B1	5/2003	Lee	
6,674,754	B1	1/2004	Ofek	
6,721,315	B1	4/2004	Xiong et al.	
6,763,192	B1	7/2004	Jagannathan	
6,782,201	B2	8/2004	Yamamoto et al.	
6,819,870	B1	11/2004	Ge et al.	
6,834,310	B2	12/2004	Munger et al.	
6,859,579	B2	2/2005	Shiozawa et al.	
6,907,001	B1 *	6/2005	Nakayama et al.	370/230
6,928,244	B1	8/2005	Goldstein et al.	
6,975,638	B1 *	12/2005	Chen et al.	370/412
7,068,871	B2	6/2006	Sugama et al.	
2001/0043562	A1 *	11/2001	Hrastar et al.	370/227
2002/0015551	A1	2/2002	Tsuyama et al.	
2002/0048066	A1	4/2002	Antoniades et al.	
2002/0080446	A1	6/2002	Derventzis et al.	
2002/0101869	A1	8/2002	Garcia-Luna-Aceves	
2003/0030866	A1	2/2003	Yoo	
2003/0063348	A1	4/2003	Posey	
2003/0067653	A1	4/2003	Aicklen	
2004/0151171	A1	8/2004	Lee et al.	
2009/0067434	A1 *	3/2009	Brueckheimer et al.	370/395.1

FOREIGN PATENT DOCUMENTS

WO	WO 95/30318	A2	11/1995
WO	WO 00/42811	A1	7/2000

OTHER PUBLICATIONS

Chevalier et al. "A new packet routing strategy for ultra-fast photonic networks", Dept. of Electron & Electr. Eng., Strathclyde Univ., Glasgow; This paper appears in: Global Telecommunications Con-

ference, 1998, GLOBECOM '93., "The Bridge to Global Integratio", 1998.

Bannister et al., "A performance model of deflection routing in multibuffer networks with non-uniform traffic Networking," IEEE/ACM Transactions on vol. 3, issue 5, pp. 509-520, Oct. 1995.

Hunter, David K., "Buffering in optical packet switches", *Jrnl. Of Lightwave Technology*, vol. 16:12, pp. 2081-2094, Dec. 1998.

Borgonovo et al. "On the design of optical deflection-routing networks", *INFOCOM '94. Networking for Global Communications. 13th Proceedings IEEE*, Publication Date: Jun. 12-16, 1994, pp. 120-129, vol. 1, Meeting Date: Jun. 12, 1194-Jun. 16, 1994.

Li et al., "Deflection Routing in Slotted Self-Routing Networks with Arbitrary Topology," *IEEE Jrnl. On Selected Areas in Communications*, vol. 22:9, pp. 1812-1822, Nov. 2004.

International Search Report for PCT/US01/51237, Mar. 20, 2003.

Kanna, et al., "A High Bandwidth Space-Time-Wavelength Multiplexed Optical Switching Network", Proceedings of the IEEE INFOCOM '97, Los Alamitos, CA, Apr. 7-12, 1997.

McKeown, et al., "Tiny Tera: A Packet Switch Core", IEEE Micro, IEEE Inc., New York, vol. 17, No. 1, pp. 26-33, Jan. 1997.

Soeren Lykke Danielsen, et al., "WDM Packet Switch Architectures and Analysis of the Influence of Tuneable Wavelength Converters on the Performance", Jun. 1998.

Soeren L. Danielsen, et al., IEEE Photonics Technology Letters, vol. 10, No. 6, "Optical Packet Switched Network Layer Without Optical Buffers", unknown.

John M. Senior, et al., SPIE—The International Society of Optical Engineering, *All-Optical Networking: Architecture, Control and Management Issues* vol. 3531, pp. 455-464, Nov. 3-5, 1998.

M.C. Chia, et al., Part of SPIE Conference on All-Optical Networking: Architecture, Control and Management Issues, "Performance of Feedback and Feedforward Arrayed—Waveguide Gratings-Based Optical Packet Switches with WDM Inputs/Outputs", Nov. 1998.

G. Depovere, et al., Philips Research Laboratories, "A Flexible Cross-Connect Network Using Multiple Object Carriers" all pages, unknown.

John M. Senior, et al., SPIE—The International Society for Optical Engineering, "All-Optical Networking 1999: Architecture, Control, and Management Issues" vol. 3843, pp. 111-119, Sep. 19-21, 1999.

Jonathan S. Turner, Journal of High Speed Networks 8 (1999) 3-16 IOS Press, "Terabit Burst Switching", pp. 3-16, 1999.

Ken-ichi Sato, IEEE Journal on Selected Areas in Communications, vol. 12, No. 1, Jan. 1994 "Network Performance and Integrity Enhancement with Optical Path Layer Technologies", pp. 159-170, Jan. 1994.

F. Callegati, et al., Optical Fiber Technology 4, 1996 "Architecture and Performance of a Broadcast and Select Photonic Switch", pp. 266-284, 1998.

* cited by examiner

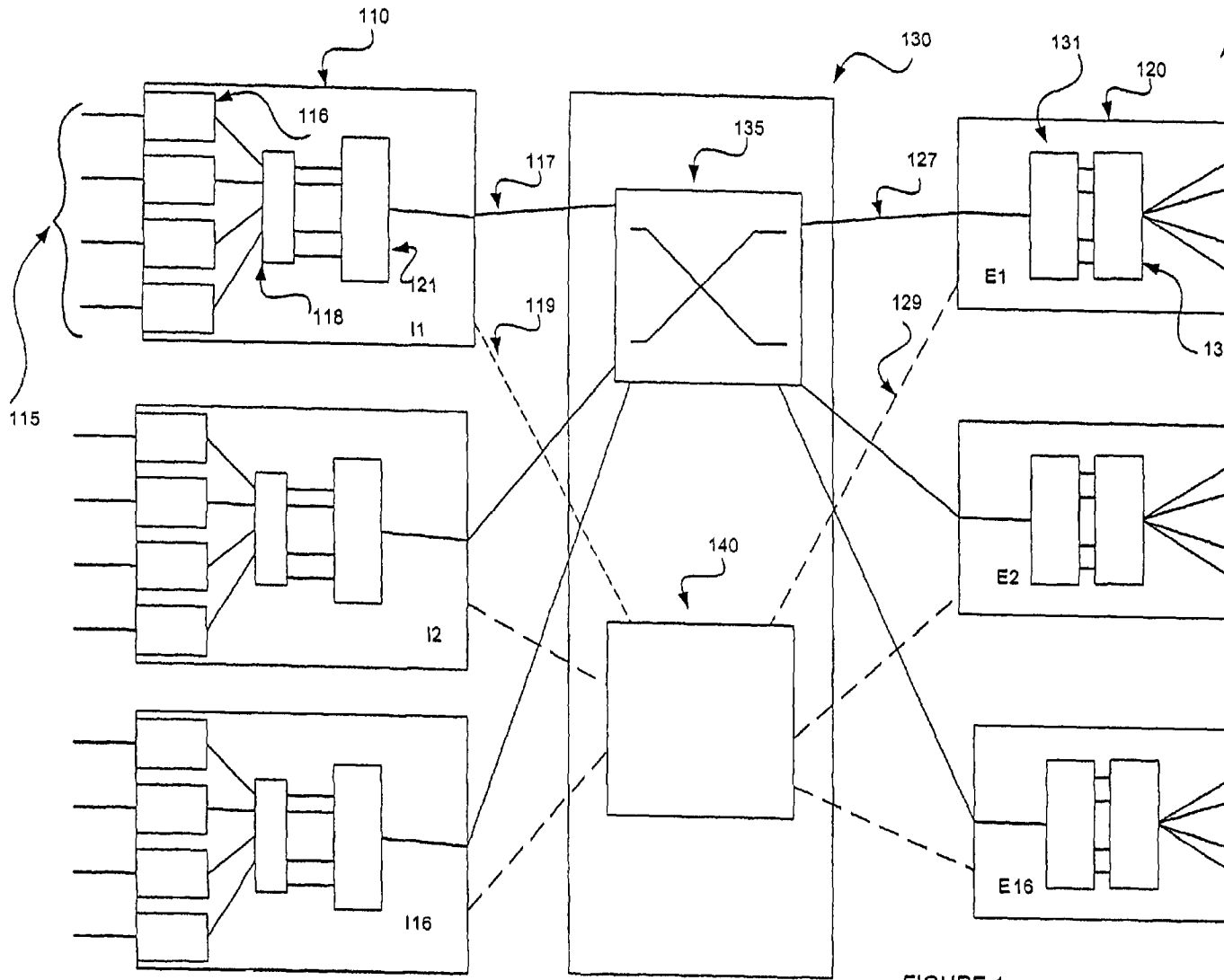


FIGURE 1

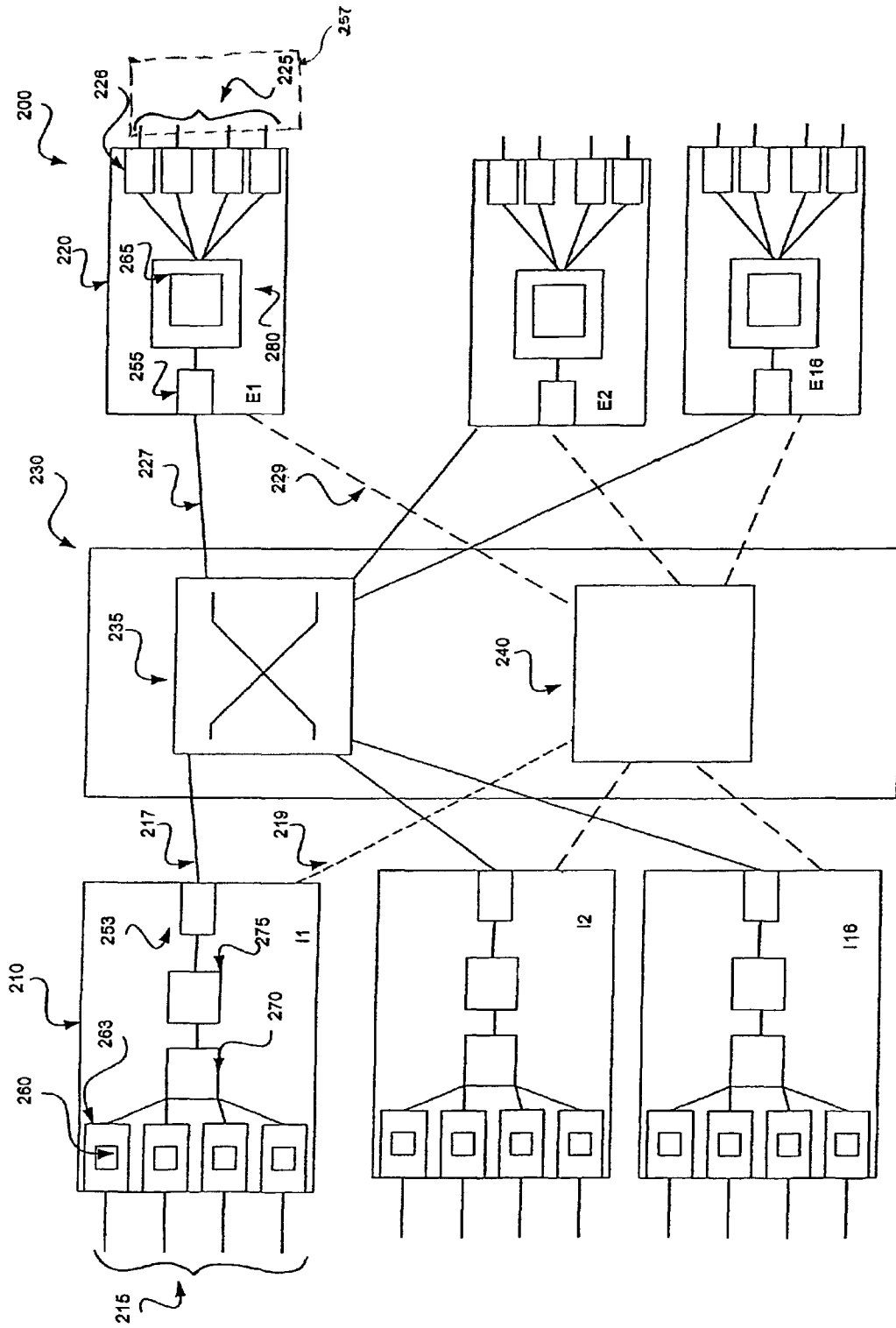


FIGURE 2

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