

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

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(54) **METHOD AND APPARATUS FOR PROVIDING REAL-TIME CALL PROCESSING SERVICES IN AN INTELLIGENT NETWORK**

5,463,682 A 10/1995 Fisher et al.
5,475,817 A 12/1995 Waldo et al.
5,537,466 A 7/1996 Taylor et al.
5,551,035 A 8/1996 Arnold et al.

(List continued on next page.)

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FOREIGN PATENT DOCUMENTS

WO 00/23898 4/2000
WO 00/24182 4/2000

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(58) **Field of Search** 370/201, 219, 370/220, 585, 522; 379/201, 219, 220, 266, 207, 230; 709/224, 218, 226, 223, 249

(56) **References Cited**

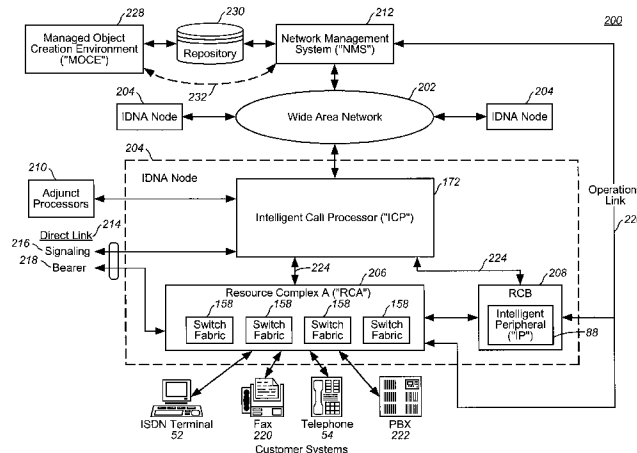
U.S. PATENT DOCUMENTS

4,713,806 A 12/1987 Oberlander
5,157,390 A 10/1992 Yoshie et al.
5,323,452 A 6/1994 Dickman et al.
5,335,268 A 8/1994 Kelly, Jr. et al.
5,450,480 A 9/1995 Man et al.

(57) ABSTRACT

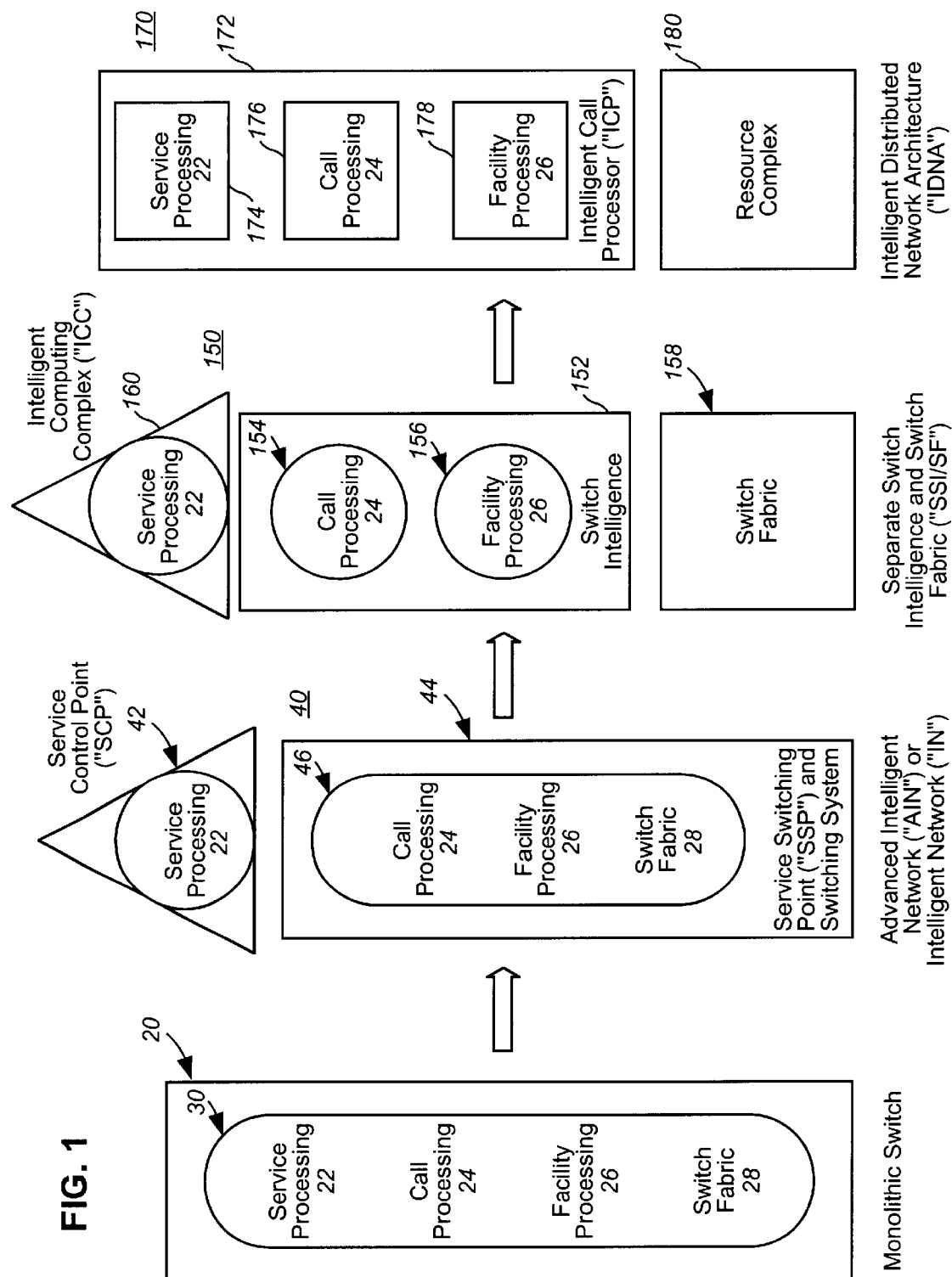
System and methodology for providing real-time call processing services received at a switch in an intelligent network having one or more service nodes having originating switches for receiving a call event. The system includes a platform-independent communication system for enabling communication between object instances executing at service nodes in the intelligent network. An operating system agent object instance executing in an execution environment associated with an originating switch communicates call origination information corresponding to a call event received at the switch to one or more object instances executing in an execution environment provided at a service node in the network; the object instances including a line object instance for maintaining the state of a communications line associated with a call origination, and, a service object implementing methods for performing a service according to a customer request. A first database storage device accessible by the service object provides call routing information according to a customer's subscription. A second database storage device is accessible by the service object to provide a corresponding terminating switch location address at a node in the network for the call based on the retrieved call routing information. The platform-independent communication system communicates call routing commands between the service object and at least the line object instance, for enabling call connection between originating and terminating switches independent of their location in the network.

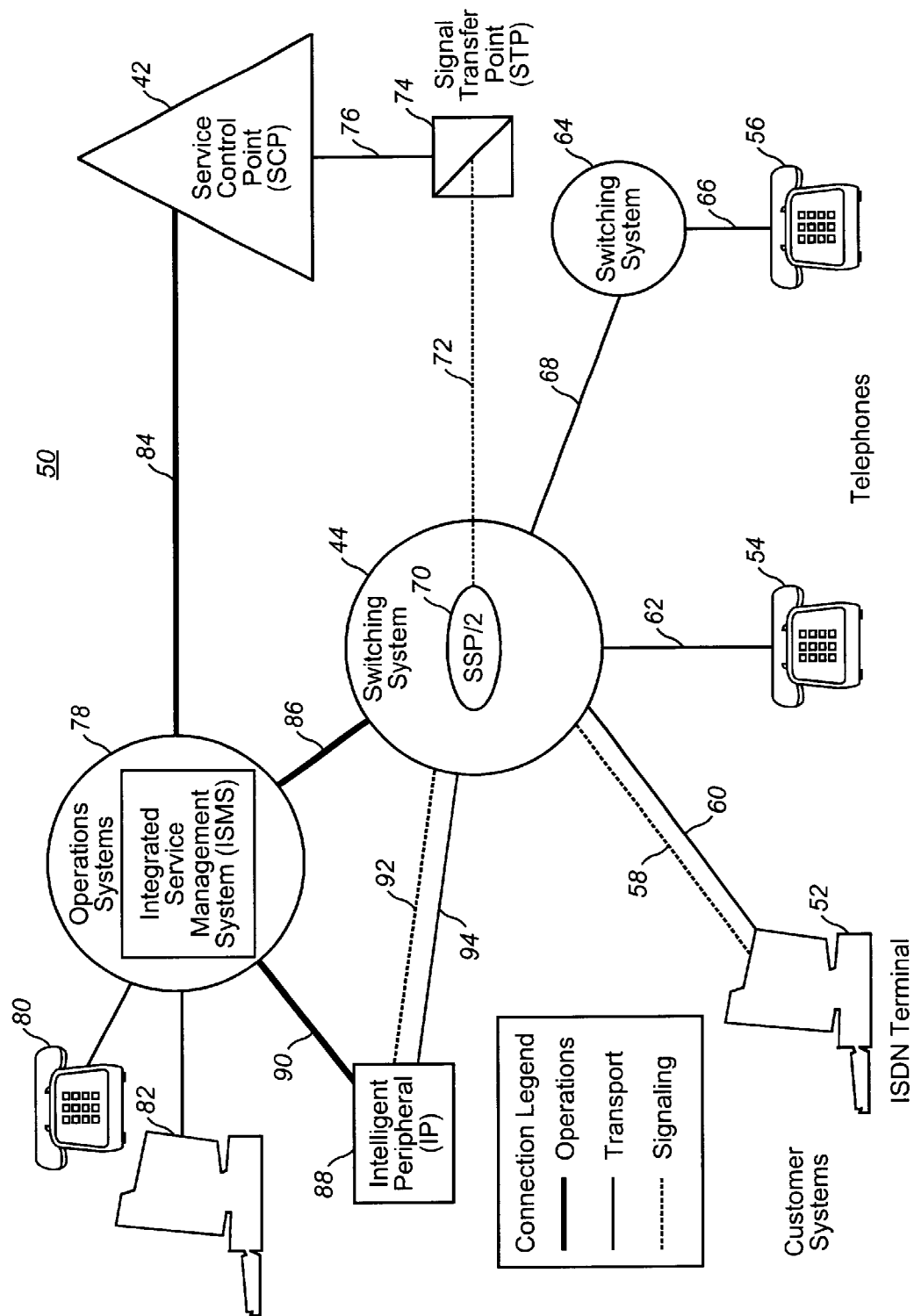
16 Claims, 22 Drawing Sheets



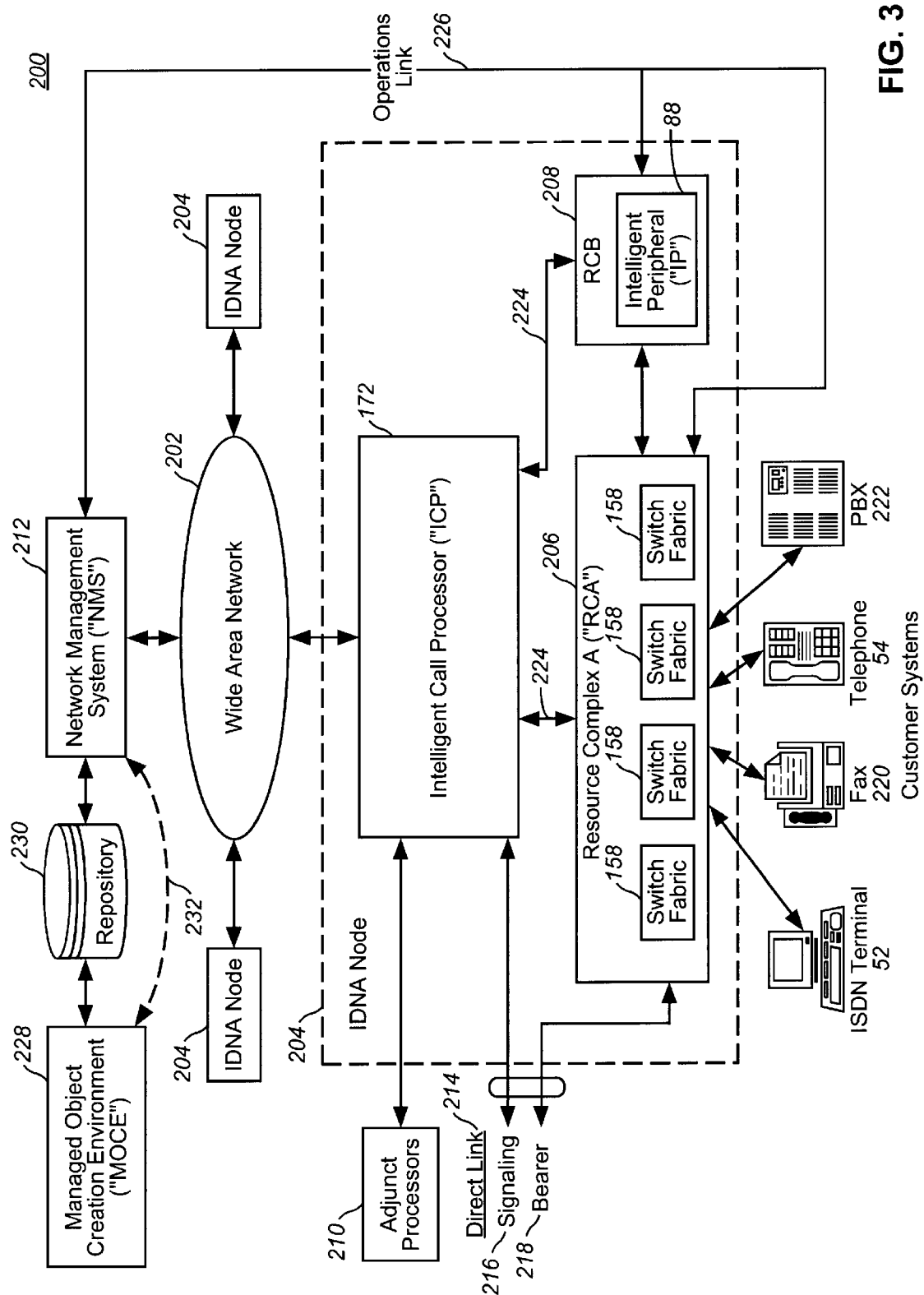
U.S. PATENT DOCUMENTS

5,619,557 A	4/1997	Van Berkum	5,881,134 A	3/1999	Foster et al.
5,644,629 A	7/1997	Chow	5,898,839 A	4/1999	Berteau
5,664,102 A	9/1997	Faynberg	5,907,607 A	5/1999	Waters et al.
5,742,668 A	4/1998	Pepe et al.	5,915,008 A	6/1999	Dulman
5,754,939 A	5/1998	Herz et al.	5,940,616 A	8/1999	Wang
5,799,153 A	8/1998	Blau et al.	5,958,016 A	9/1999	Chang et al.
5,825,865 A	10/1998	Oberlander et al.	5,966,434 A	10/1999	Schafer
5,826,268 A	10/1998	Shaefer et al.	5,999,965 A	12/1999	Kelly
5,838,970 A	11/1998	Thomas	6,041,109 A	3/2000	Waller et al.
5,867,498 A	2/1999	Giltman et al.	6,041,117 A	3/2000	Androski





(Prior Art)



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