



US006862622B2

(12) **United States Patent**
Jorgensen

(10) **Patent No.:** **US 6,862,622 B2**
(45) **Date of Patent:** ***Mar. 1, 2005**

(54) **TRANSMISSION CONTROL PROTOCOL/
INTERNET PROTOCOL (TCP/IP)
PACKET-CENTRIC WIRELESS POINT TO
MULTI-POINT (PTMP) TRANSMISSION
SYSTEM ARCHITECTURE**

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(*) Notice: This patent issued on a continued prosecution application filed under 37 CFR 1.53(d), and is subject to the twenty year patent term provisions of 35 U.S.C. 154(a)(2).

Subject to any disclaimer, the term of this patent is extended or adjusted under 35 U.S.C. 154(b) by 536 days.

(21) Appl. No.: **09/349,477**

(22) Filed: **Jul. 9, 1999**

(65) **Prior Publication Data**

US 2002/0099854 A1 Jul. 25, 2002

Related U.S. Application Data

(60) Provisional application No. 60/092,452, filed on Jul. 10, 1998.

(51) **Int. Cl.**⁷ **G06F 15/173**

(52) **U.S. Cl.** **709/226; 709/229; 709/223;**
370/338; 370/351

(58) **Field of Search** **709/104, 229,**
709/217-219, 250, 226, 223; 370/351, 328,
338

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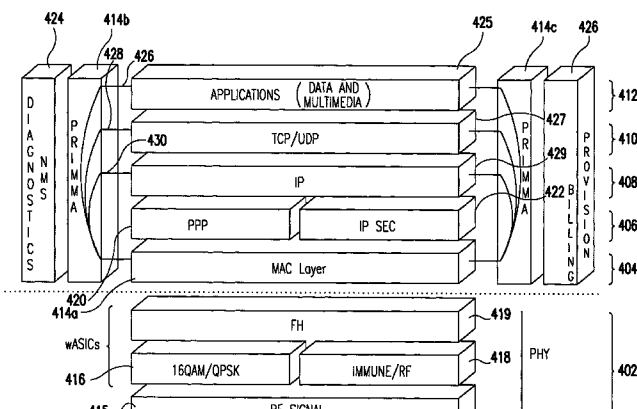
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ABSTRACT

A packet-centric wireless point to multi-point telecommunications system includes: a wireless base station communicating via a packet-centric protocol to a first data network; one or more host workstations communicating via the packet-centric protocol to the first data network; one or more subscriber customer premise equipment (CPE) stations coupled with the wireless base station over a shared bandwidth via the packet-centric protocol over a wireless medium; and one or more subscriber workstations coupled via the packet-centric protocol to each of the subscriber CPE stations over a second network. The packet-centric protocol can be transmission control protocol/internet protocol (TCP/IP). The packet-centric protocol can be a user datagram protocol/internet protocol (UDP/IP). The system can include a resource allocation means for allocating shared bandwidth among the subscriber CPE stations. The resource allocation is performed to optimize end-user quality of service (QoS). The wireless communication medium can include at least one of: a radio frequency (RF) communications medium; a cable communications medium; and a satellite communications medium. The wireless communication medium can further include a telecommunications access method including at least one of: a time division multiple access (TDMA) access method; a time division multiple access/time division duplex (TDMA/TDD) access method; a code division multiple access (CDMA) access method; and a frequency division multiple access (FDMA) access method.

The first data network includes at least one of: a wireline network; a wireless network; a local area network (LAN); and a wide area network (WAN). The second network includes at least one of: a wireline network; a wireless network; a local area network (LAN); and a wide area network (WAN).

22 Claims, 41 Drawing Sheets



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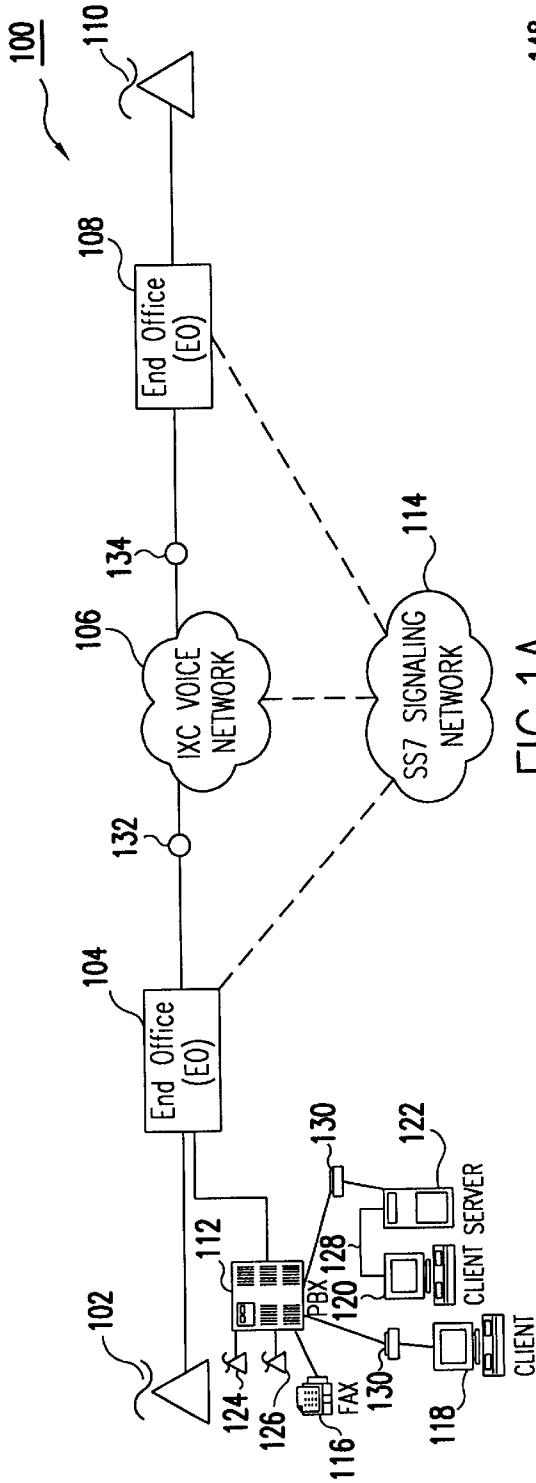


FIG. 1A

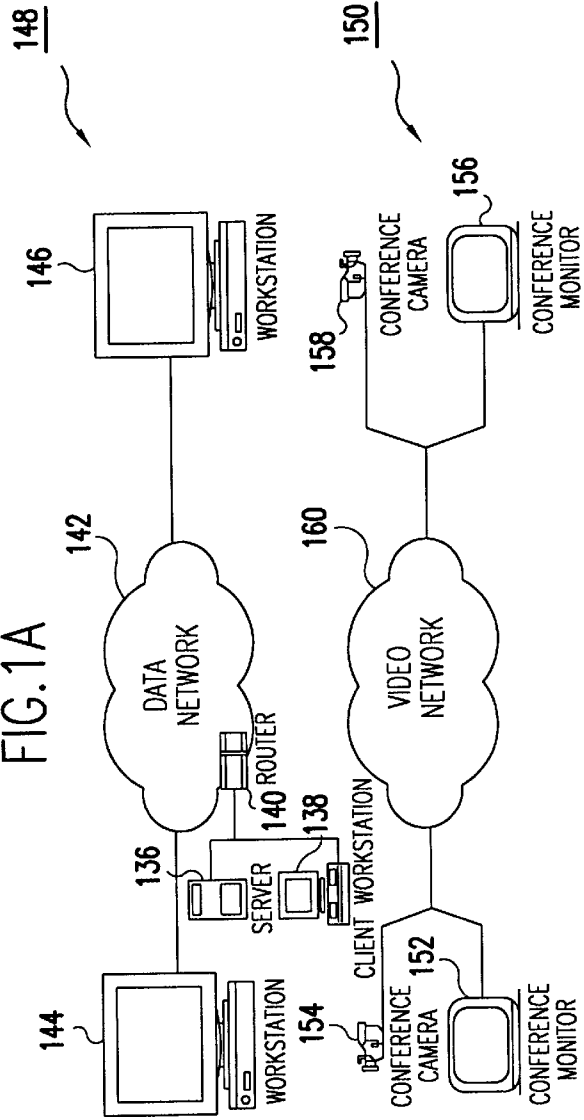


FIG. 1B

FIG. 1C

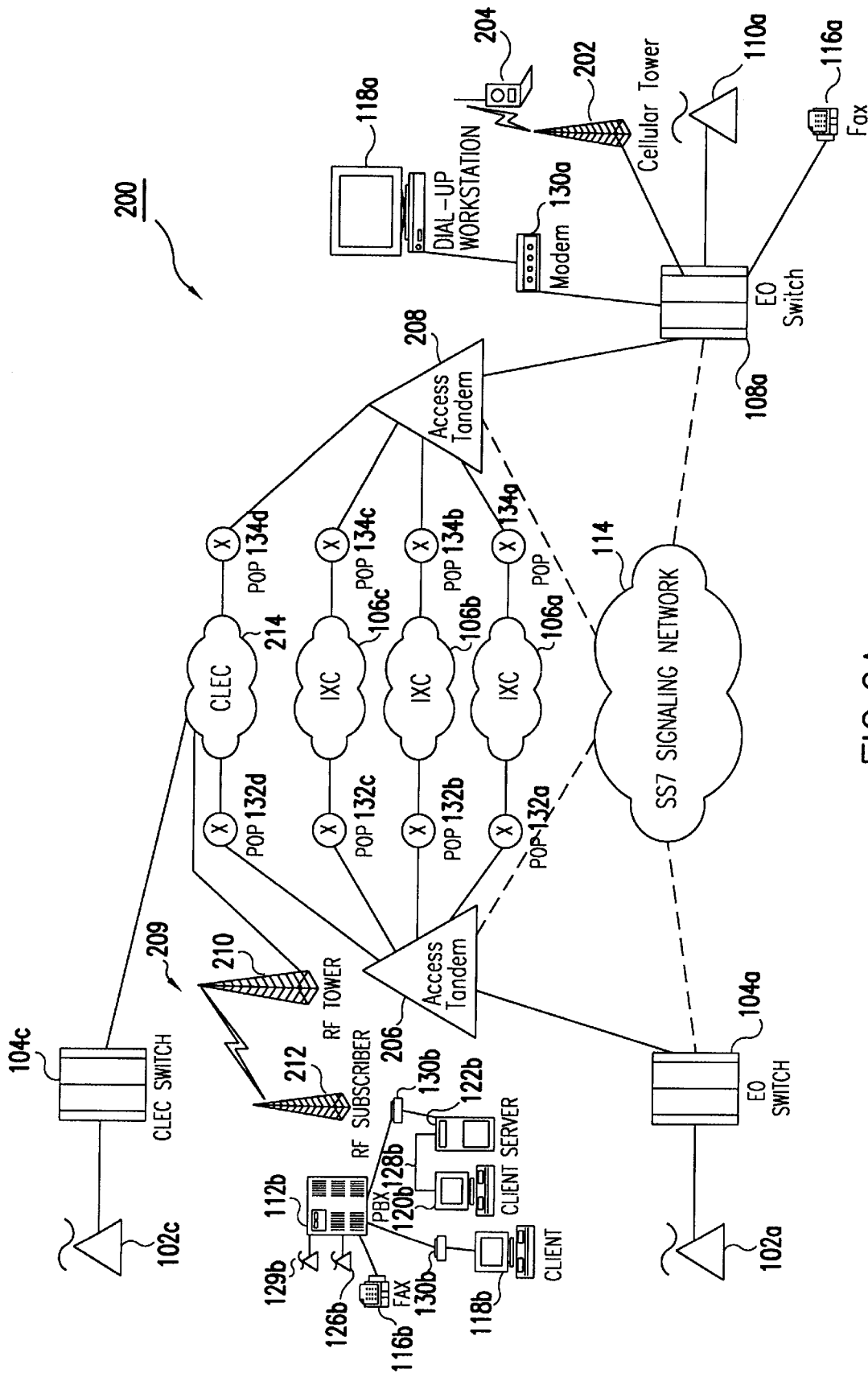


FIG. 2A

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