[54] NETWORK ADDRESS MANAGEMENT FOR A WIRED NETWORK SUPPORTING WIRELESS COMMUNICATION TO A PLURALITY OF MOBILE USERS

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[58] Field of Search 370/60, 85.1, 85.2, 370/85.3, 85.7, 85.13, 94.1, 94.3, 95.1; 340/825.5, 825.51; 455/39, 68, 53.1, 54.1, 54.2, 55.1, 56.1

[56] References Cited

U.S. PATENT DOCUMENTS

4,644,461	2/1987	Jennings	364/200
4,665,519	5/1987	Kirchner et al.	370/94.1
4,706,081	11/1987	Hart et al.	340/825.03
4,750,109	6/1988	Kita	364/200
4,807,222	2/1989	Amitay	370/85.12
4,809,257	2/1989	Gantenbein et al.	370/4
4,893,307	1/1990	McKay et al.	370/94.1
4,914,652	4/1990	Nguyen	370/85.5
5,014,345	5/1991	Comroe et al.	455/54
5,029,183	7/1991	Tymes	375/1
5,040,175	8/1991	Tuch et al.	370/94.1
5,068,916	11/1991	Harrison et al.	455/39

FOREIGN PATENT DOCUMENTS

0182417	5/1986	European Pat. Off. .
0328100	8/1989	European Pat. Off. .
WO88/07794	10/1988	PCT Int'l Appl. .

OTHER PUBLICATIONS

IEEE Transactions On Communications, vol. 38, No. 8, Aug. 1990, New York, pp. 1272-1280; D. J. Goodwin: "Cellular Packet Communications".

10th Conference On Local Computer Networks, Oct. 1985, New York, US pp. 149-157 W. M. Loucks et al.:

"Implementation Of A Dynamic Address Assignment Protocol In A Local Area Network".

Data Communications, vol. 16, No. 12, Nov. 1987, New York US, pp. 209-225; D. Retz: "TCP/IP: DOD suite marches into the business world".

"Internet Protocol DARPA Internet Program Protocol Specification", Sep. 1981, Information Sciences Institute, University of Southern CA, Marina del Rey, Calif. 90291.

"Infrared Microbroadcasting Network For In-House Data Communication", F. Gfeller, IBM Technical Disclosure Bulletin, vol. 24, No. 8, Jan. 1982.

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[57] ABSTRACT

Apparatus and method for managing bidirectional transmission of information between a wired network and at least one mobile communication unit (10) in wireless communication with the wired network. The wired network is of the type wherein users of the network are each assigned a unique network address such as in, for example, a TCP/IP network. In accordance with the invention there is provided a local gateway (16) coupled between a wireless LAN and the wired network for communication with a mobile communication unit. There is also provided a global gateway (18) coupled to the local gateway and to remote users of the network. The global gateway functions to maintain a plurality of network addresses and, in response to a request for an assignment of a network address from the mobile communication unit, assigns one of the plurality of network addresses to the requesting mobile communication unit. The global gateway also buffers and routes data received from a remote user, the data being directed to an addresss corresponding to the assigned network address, to the mobile communication unit having the assigned address.
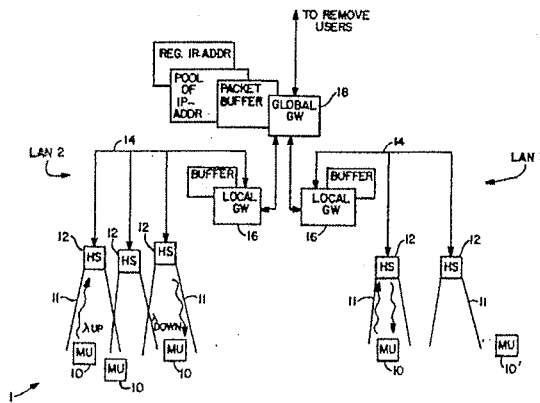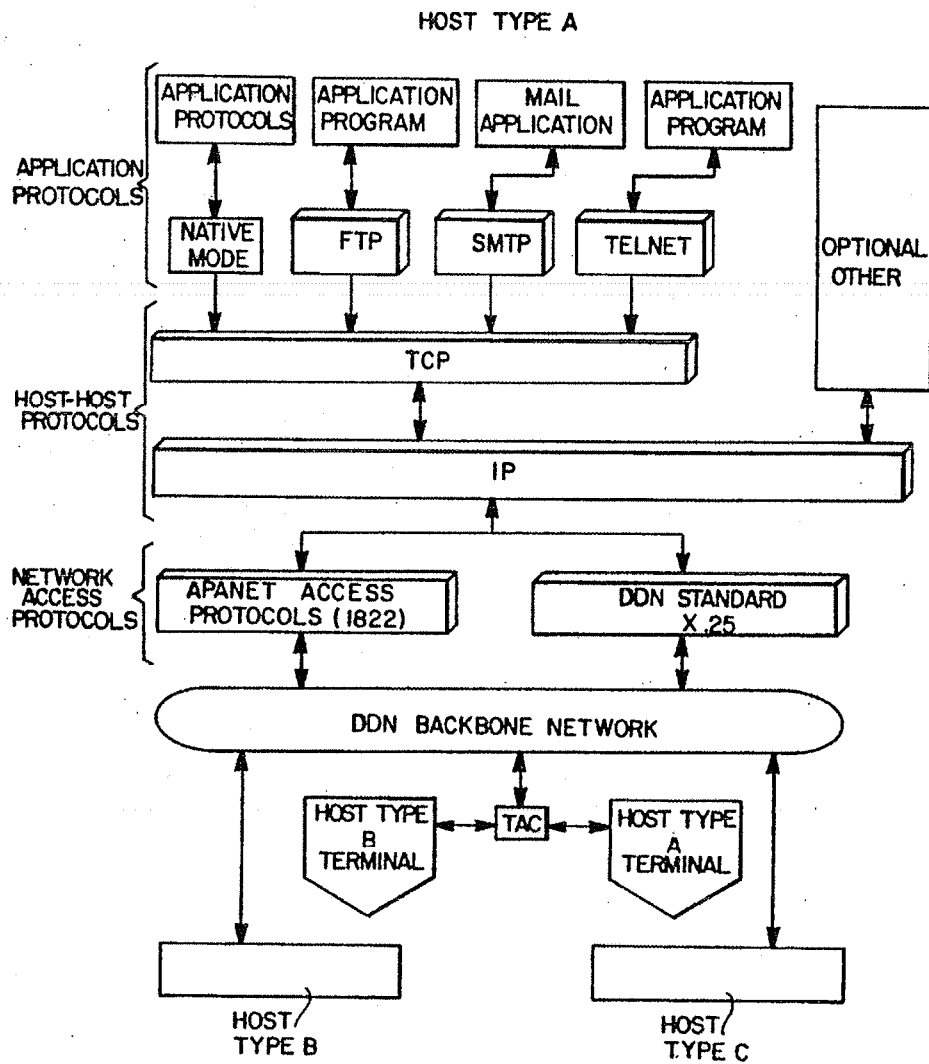
20 Claims, 5 Drawing Sheets
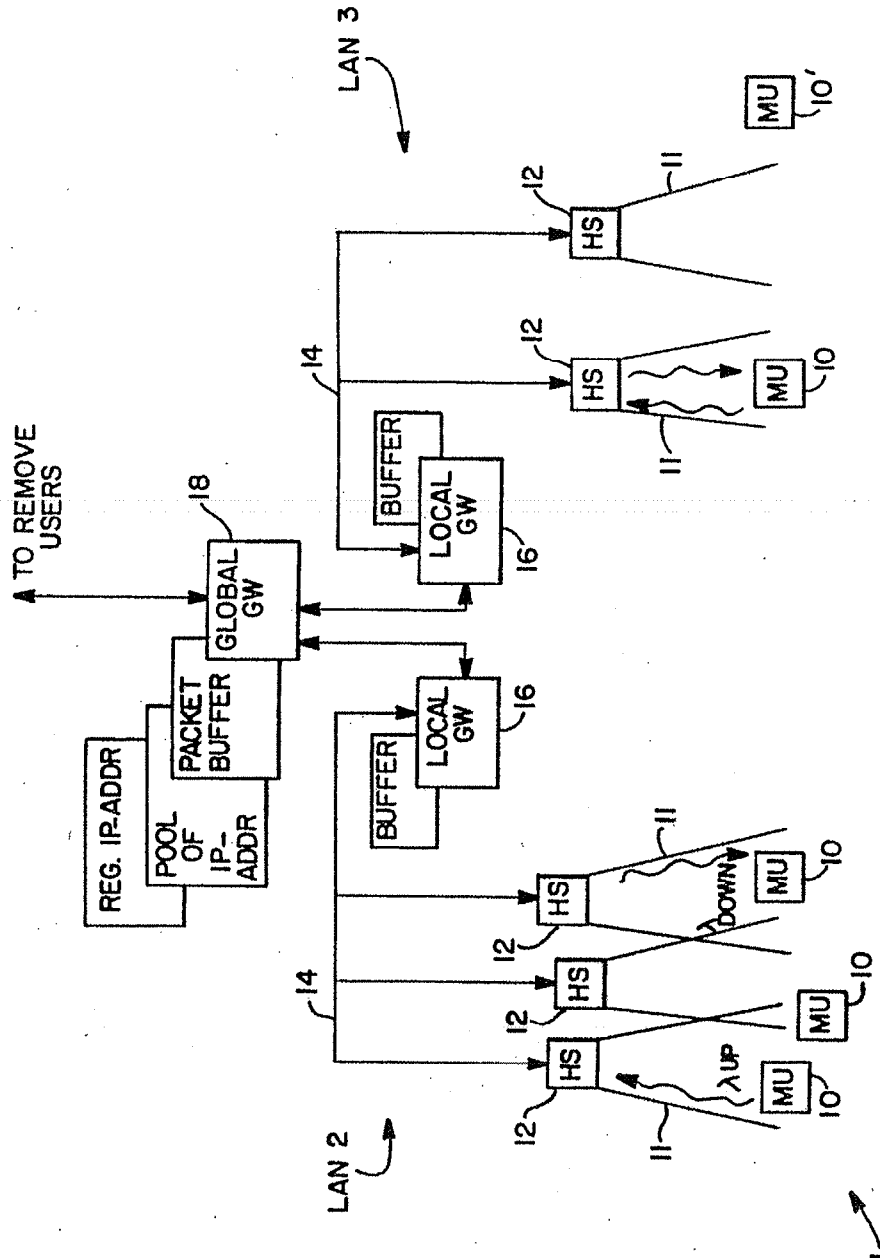
FIG. 1
(PRIOR ART)

HOST TYPE A

FIG. 2

FIG. 3

START

TRANSMIT WIRELESS
MESSAGE REQUESTING
SERVICE, ID

RESUME
WITH PRIOR
IP-ADDR
?

YES

FORWARD BUFFERED
PACKETS, IF ANY,
FROM GLOBAL
GATEWAY 18 TO
MOBILE UNIT 10

NO

ASSIGN PSEUDO-
IP ADDRESS TO
MOBILE UNIT 10

TRANSMIT
ASSIGNED
PSEUDO-IP
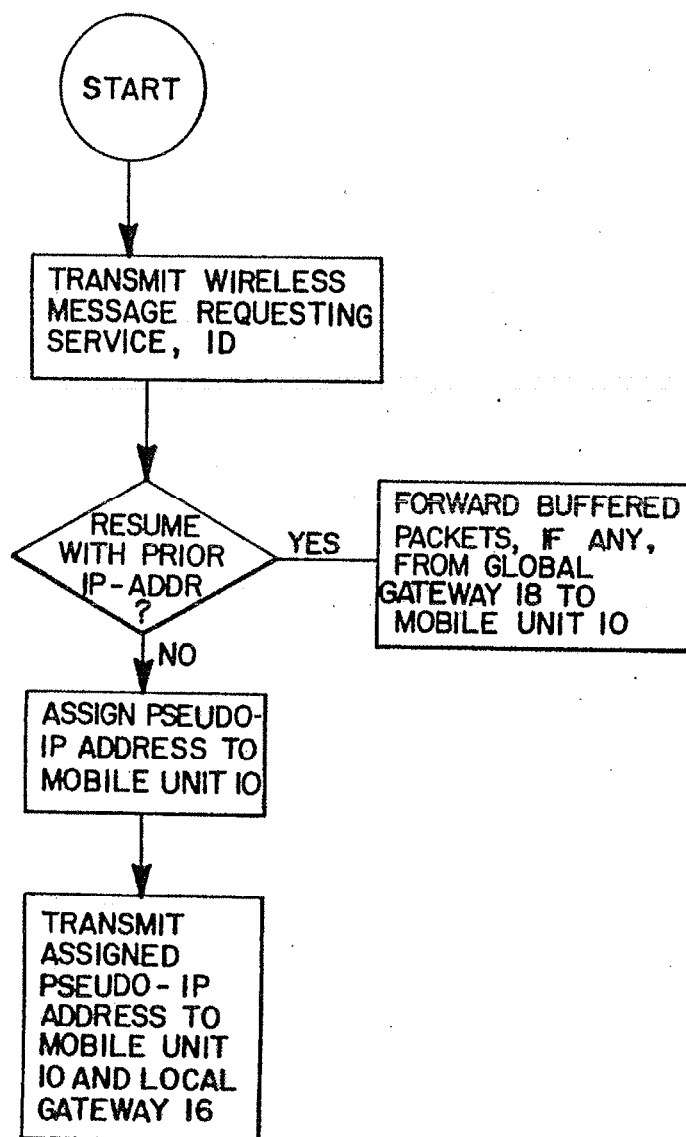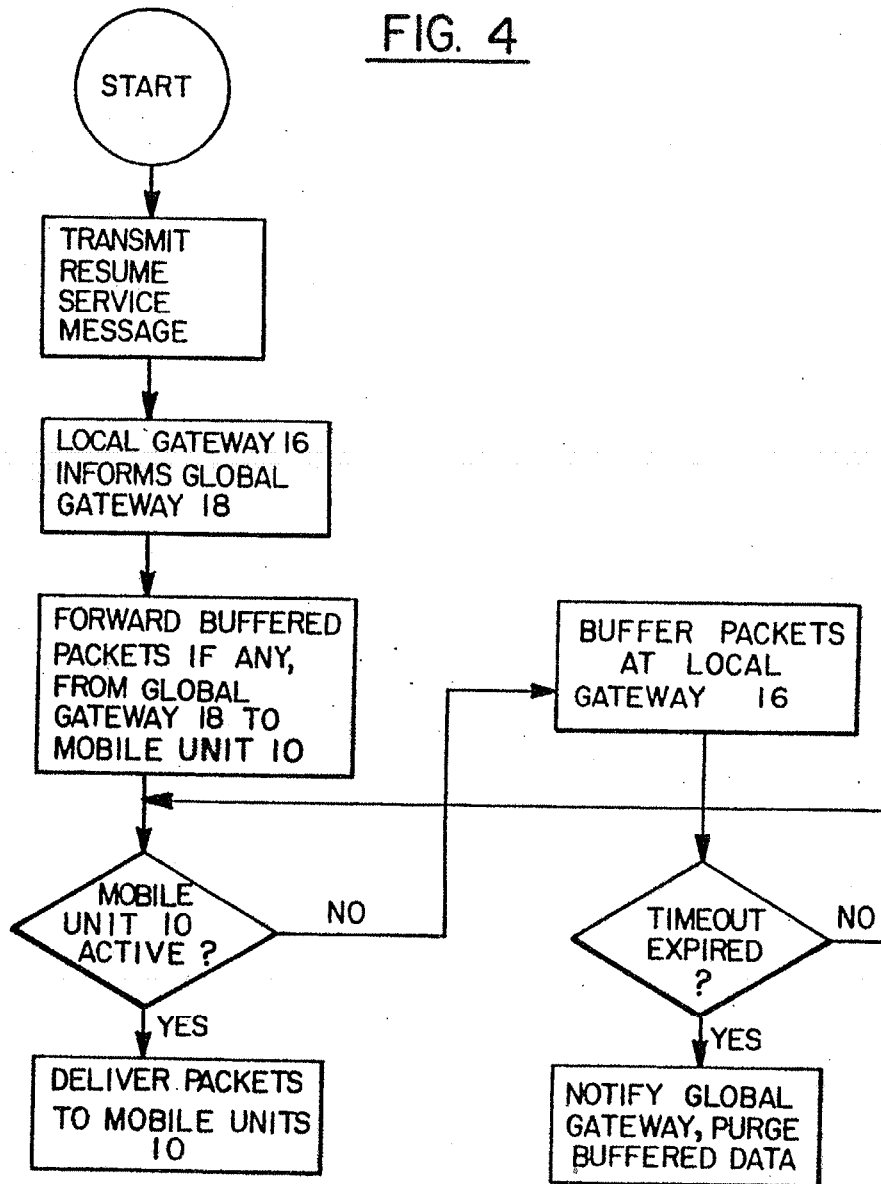ADDRESS TO
MOBILE UNIT
10 AND LOCAL
GATEWAY 16

FIG. 4

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