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

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(45) **Date of Patent:** **Jul. 6, 2004**

(54) **METHOD, SYSTEM, AND COMPUTER PROGRAM PRODUCT FOR PROVIDING VOICE OVER THE INTERNET COMMUNICATION**

|             |        |                      |           |
|-------------|--------|----------------------|-----------|
| 5,870,464 A | 2/1999 | Brewster et al. .... | 379/219   |
| 5,892,822 A | 4/1999 | Gottlieb et al. .... | 379/220   |
| 5,897,613 A | 4/1999 | Chan .....           | 704/210   |
| 5,900,000 A | 5/1999 | Korenshtein .....    | 707/200   |
| 5,940,479 A | 8/1999 | Guy et al. ....      | 379/93.01 |

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(List continued on next page.)

**FOREIGN PATENT DOCUMENTS**

|    |                |        |       |            |
|----|----------------|--------|-------|------------|
| WO | WO 97/14238 A1 | 4/1997 | ..... | H04L/12/46 |
| WO | WO 97/23078 A1 | 6/1997 | ..... | H04L/12/56 |
| WO | WO 97/27692 A1 | 7/1997 | ..... | H04L/12/56 |
| WO | WO 97/28628 A1 | 8/1997 | ..... | H04L/12/56 |

(73) Assignee: **Array Telecom Corporation**, Herndon, VA (US)

**OTHER PUBLICATIONS**

Held, G., *Voice Over Data Networks*, McGraw-Hill Series, Copyright 1998.

(\* ) Notice: Subject to any disclaimer, the term of this patent is extended or adjusted under 35 U.S.C. 154(b) by 0 days.

(List continued on next page.)

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(22) Filed: **Sep. 10, 1999**

(57) **ABSTRACT**

(51) **Int. Cl.**<sup>7</sup> ..... **H04L 12/66**

(52) **U.S. Cl.** ..... **370/352; 370/401; 379/121.04**

(58) **Field of Search** ..... 370/352, 354, 370/356, 389, 395.52, 493, 400, 401, 399, 409, 410, 402, 395.61; 709/229, 223, 203, 204, 227, 248, 220, 230; 707/204, 501; 379/93.02, 133, 93.03, 93.01, 112.01, 114.01, 121.06, 121.04; 713/184; 714/4, 16, 3, 48, 13

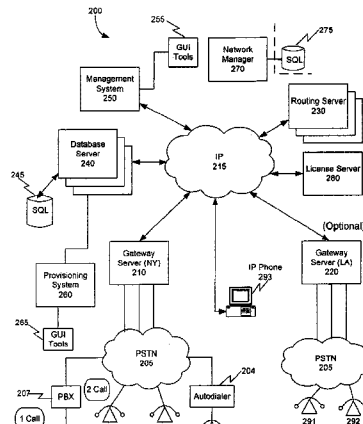
A method, system, and computer program product that provides voice over the Internet communication. A Voice over the Internet (VoIP) system includes a gateway server that handles calls received from a public switched telephone network and a packet-switched network, a routing server, and a database server. Messages can be sent between the gateway server, routing server, and database server over the packet-switched network. A provisioning system is coupled to the database server. A management system is also coupled to the gateway server, routing server, database server, and management system over the packet-switched network. A network manager automatically queries a client database to determine an update, and sends a message representative of the update to at least one of the gateway server, routing server, database server, and management system over the packet-switched network. A licensing server supports licensing of the VoIP system.

(56) **References Cited**

**U.S. PATENT DOCUMENTS**

|             |        |                      |         |
|-------------|--------|----------------------|---------|
| 5,621,727 A | 4/1997 | Vaudreuil .....      | 370/60  |
| 5,742,596 A | 4/1998 | Baratz et al. ....   | 370/356 |
| 5,757,871 A | 5/1998 | Furukawa et al. .... | 375/372 |
| 5,790,538 A | 8/1998 | Sugar .....          | 370/352 |
| 5,790,543 A | 8/1998 | Cloutier .....       | 370/395 |
| 5,805,602 A | 9/1998 | Cloutier et al. .... | 370/516 |
| 5,812,840 A | 9/1998 | Shwartz .....        | 395/604 |

**6 Claims, 7 Drawing Sheets**



U.S. PATENT DOCUMENTS

|           |      |        |                           |         |
|-----------|------|--------|---------------------------|---------|
| 5,940,827 | A    | 8/1999 | Hapner et al. ....        | 707/8   |
| 5,940,829 | A    | 8/1999 | Tsuiki et al. ....        | 707/10  |
| 5,940,832 | A    | 8/1999 | Hamada et al. ....        | 707/100 |
| 5,953,405 | A    | 9/1999 | Miloslavsky ....          | 379/265 |
| 6,233,618 | B1 * | 5/2001 | Shannon ....              | 709/229 |
| 6,374,295 | B2 * | 4/2002 | Farrow et al. ....        | 709/223 |
| 6,426,955 | B1 * | 7/2002 | Gossett Dalton et al. ... | 370/401 |

OTHER PUBLICATIONS

McConnell, B., *How to Build an Internet PBX* (Apr. 1997), <<http://www.hellodirect.net/tutorial/ip-phone.htm>, 10 pages.

Prosize, J., *Programming Windows 95 with MFC, Part VII: The Document/View Architecture*, 40 pages, Copyright 1995.

Sheldon, T., *Encyclopedia of Networking*, McGraw-Hill, 1998, Table of Contents, pp. 503-543, 959-968 and 1047-1050.

Anquetil, L-P. et al., "Media Gateway Control Protocol And Voice Over IP Gateways," *Alcatel Telecommunications Review*, pp. 151-157 (Apr.-Jun. 1999).

*Array Series 3000 Users Manual*, Array Telecom Corp, Entire Manual (Aug. 27, 1999).

*ctvoice IP Telephony*, Product Brochure, Comdial, 6 Pages (Copy obtained Aug. 1999).

*ctvoice System User's Manual*, Comdial, Entire Manual (Jun. 1998).

Yang, C., *INETPhone: Telephone Services and Servers on Internet*, at <http://www.ds.internic.net/rfc/rfc.1789.txt>, 6 pages, (Apr. 1995).

\* cited by examiner

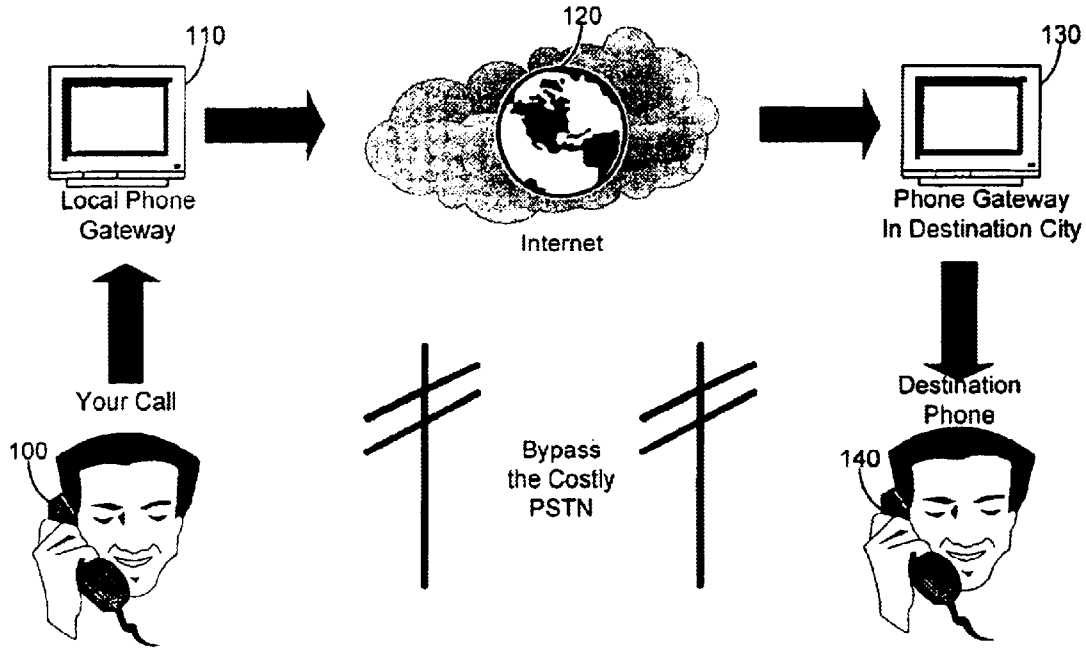


FIG. 1A

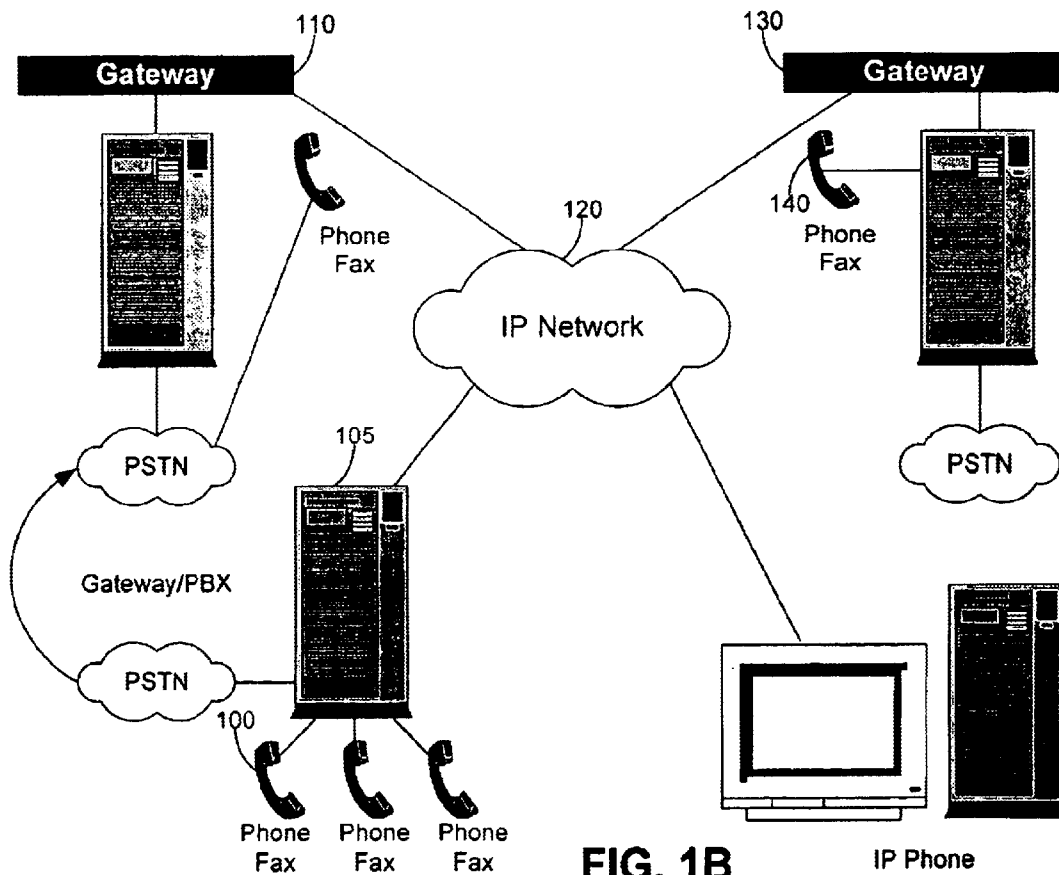


FIG. 1B

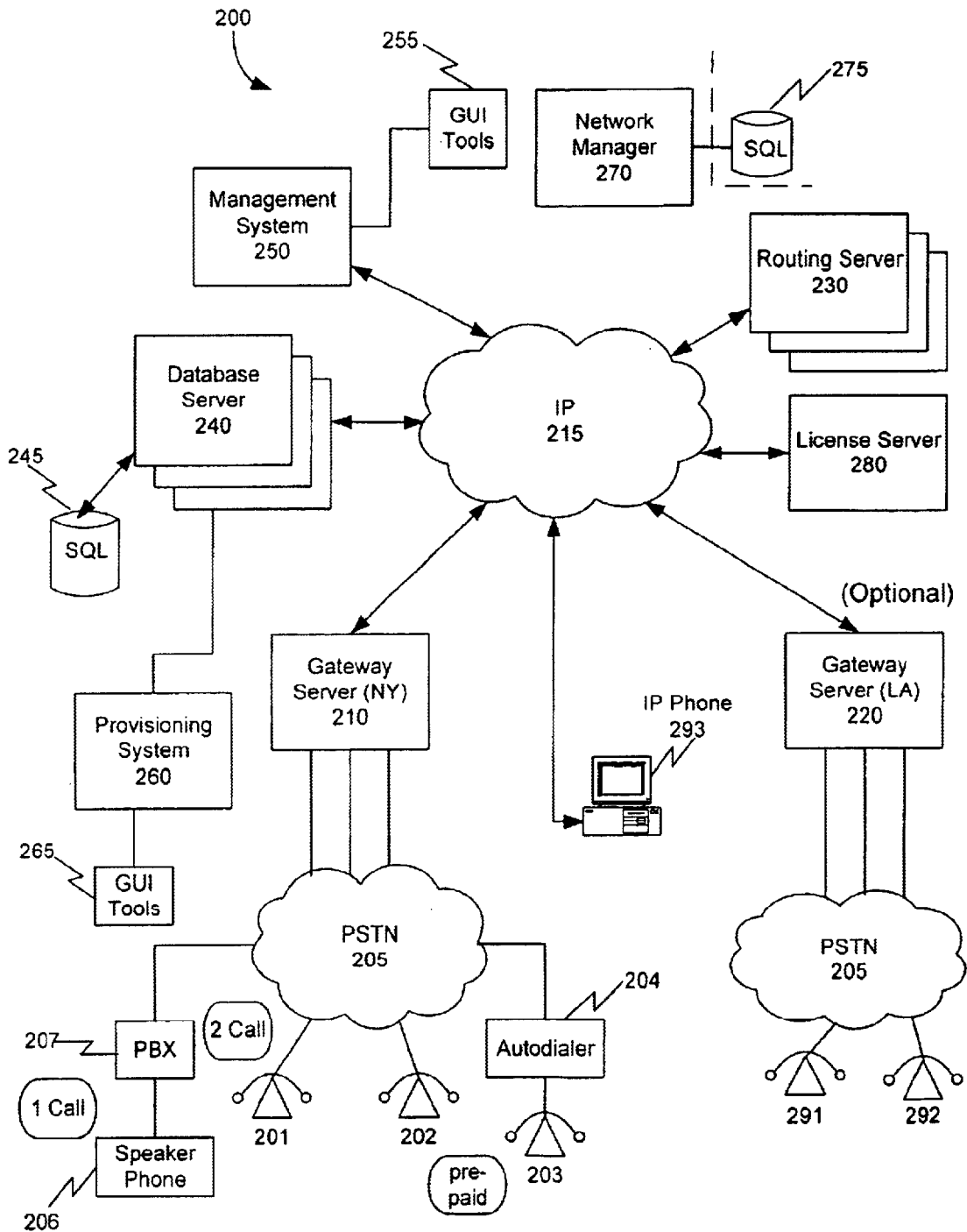
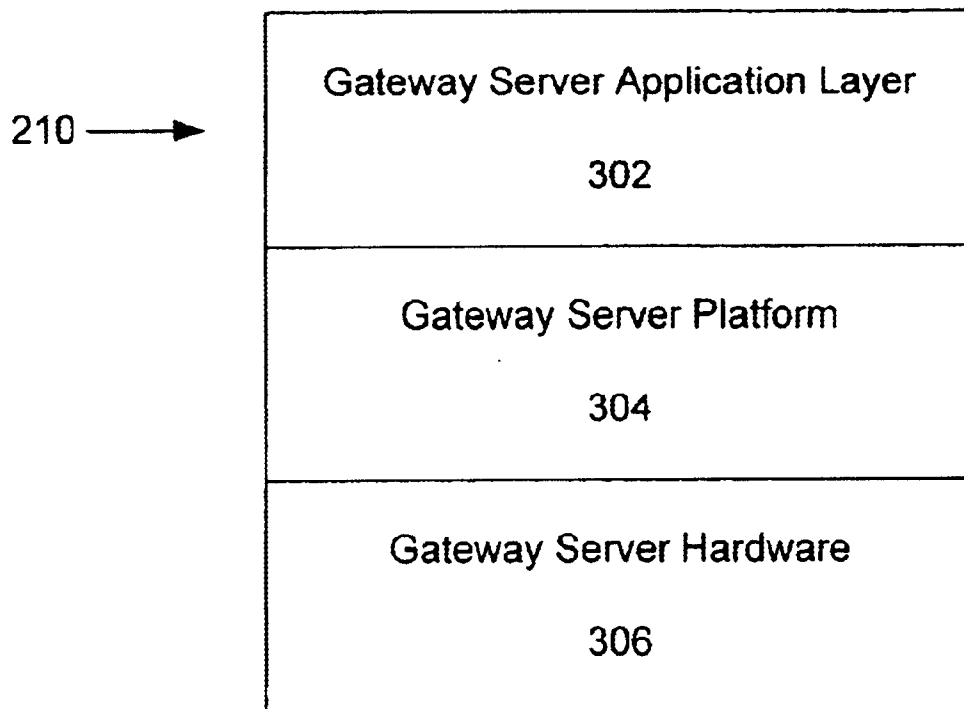


FIG. 2



**FIG. 3A**

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