



# United States Patent [19]

[11] Patent Number: **5,754,946**

Cameron et al.

[45] Date of Patent: **May 19, 1998**

[54] **NATIONWIDE COMMUNICATION SYSTEM**

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[73] Assignee: **Mobile Telecommunication Technologies**, Jackson, Miss.

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[21] Appl. No.: **124,219**

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*Attorney, Agent, or Firm*—Finnegan, Henderson, Farabow, Garrett & Dunner, L.L.P.

[22] Filed: **Sep. 21, 1993**

[57] **ABSTRACT**

**Related U.S. Application Data**

A two-way communication system for communication between a system network and a mobile unit. The system network includes a plurality of base transmitters and base receivers included in the network. The base transmitters are divided into zonal assignments and broadcast in simulcast using multi-carrier modulation techniques. The system network controls the base transmitters to broadcast in simulcast during both systemwide and zonal time intervals. The system network dynamically alters zone boundaries to maximize information throughput. The system also uses a mobile unit which receives messages from the network and transmits messages to the network. The mobile unit includes a switch that allows a user to request the network to retransmit a received message that contains errors.

[63] Continuation-in-part of Ser. No. 973,918, Nov. 12, 1992, Pat. No. 5,590,403.

[51] Int. Cl.<sup>6</sup> ..... **H04B 7/00**

[52] U.S. Cl. .... **455/38.1; 455/517; 455/67.7; 340/825.44**

[58] **Field of Search** ..... 455/33.1, 54.1, 455/54.2, 56.1, 69, 88, 422, 423, 424, 425, 517, 524, 32.1, 38.1, 38.4, 67.1, 67.7; 370/95.3, 235, 236, 252, 522; 340/825.44, 311.1

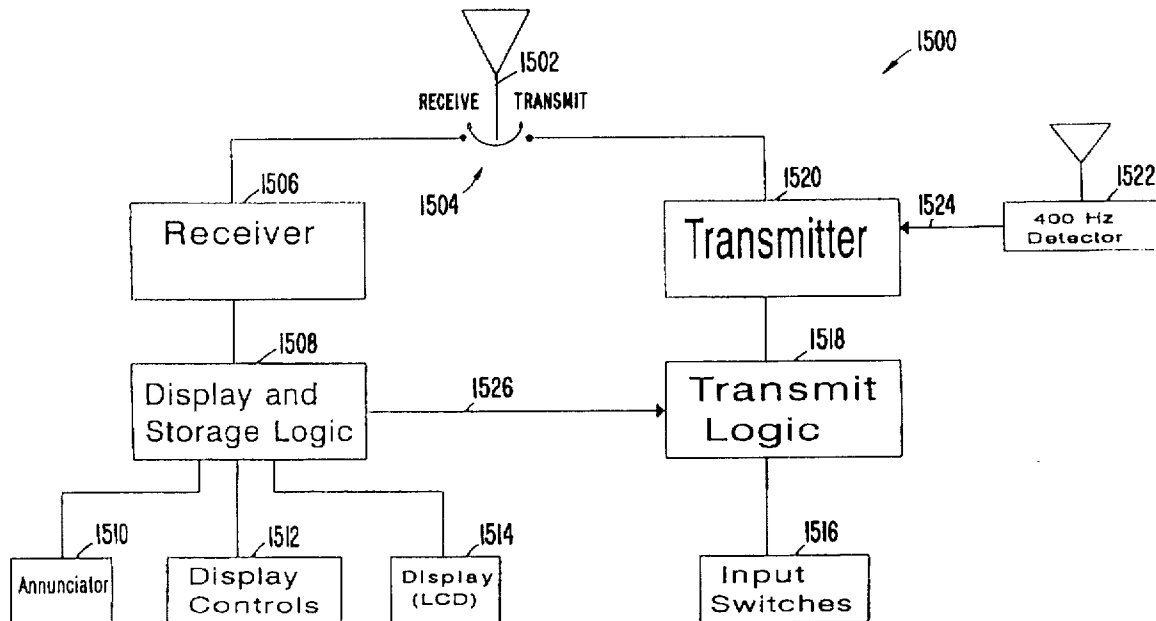
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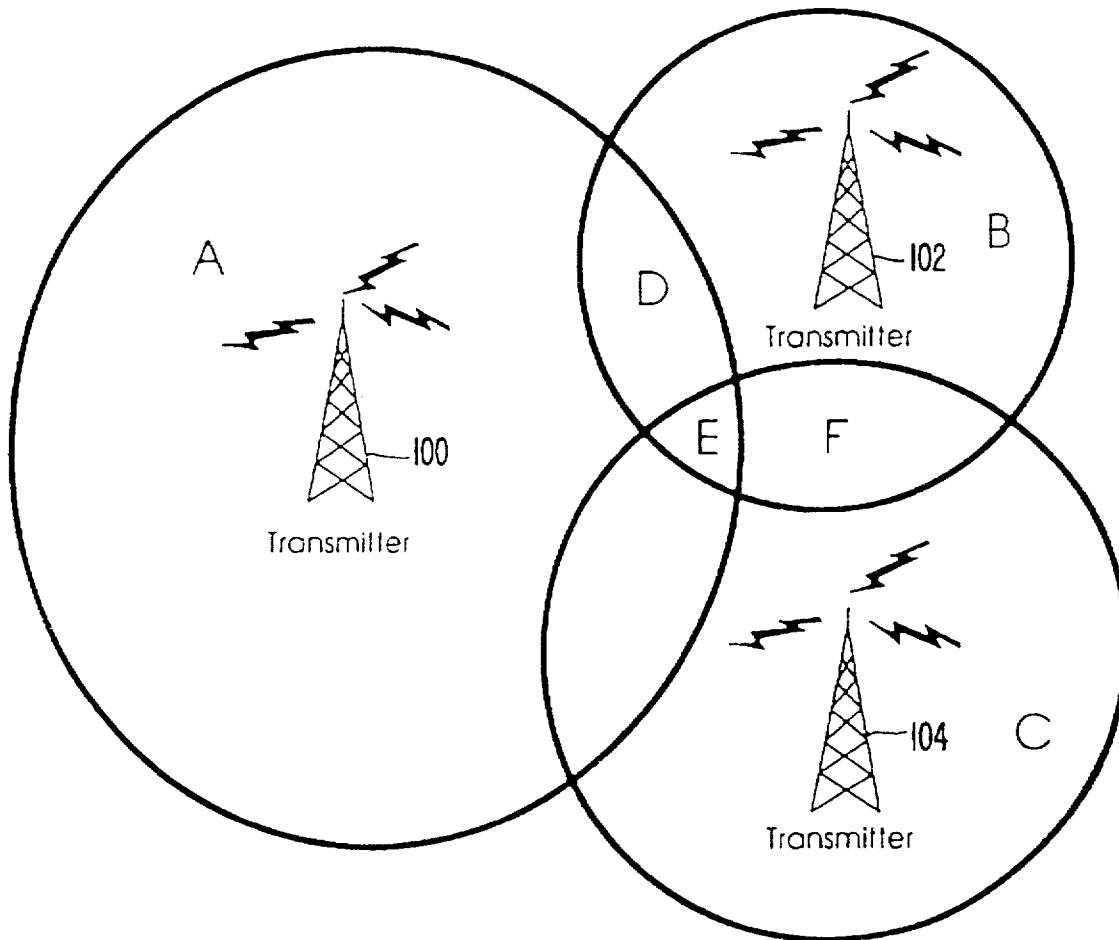
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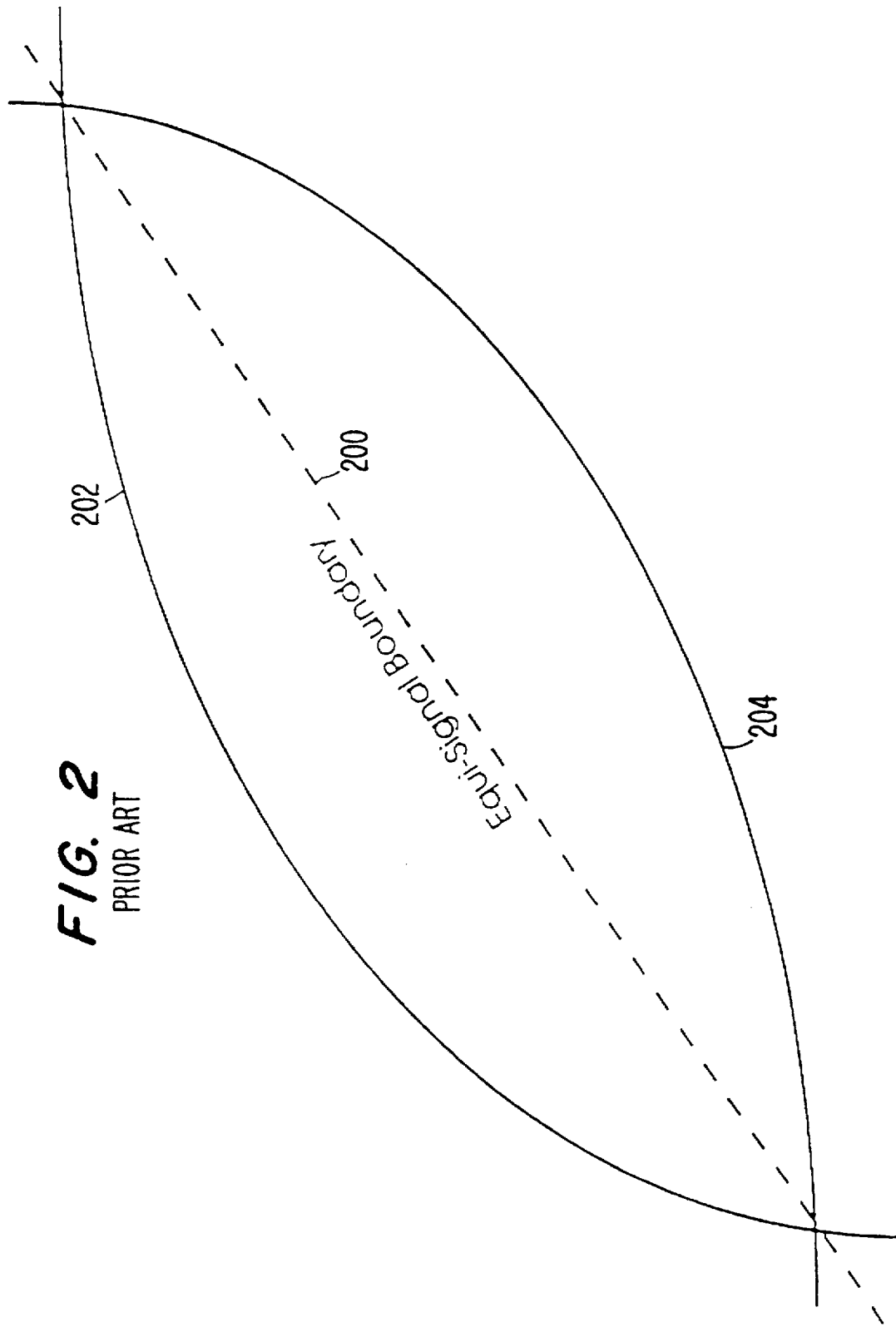
**9 Claims, 30 Drawing Sheets**

## Mobile Transceiver

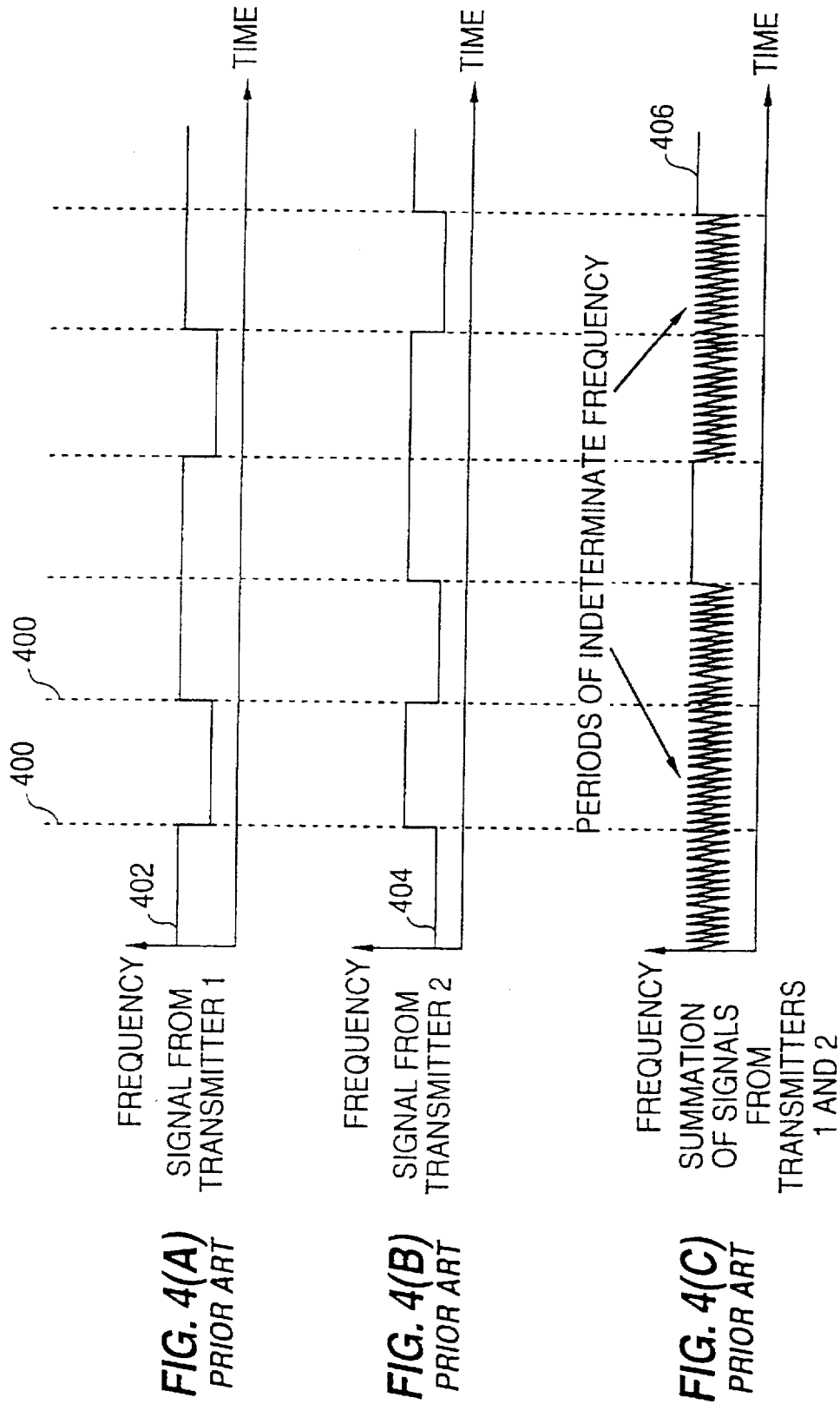


**FIG. 1**  
PRIOR ART









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