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(54) **ENHANCED CELLULAR COMMUNICATION SYSTEM**

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(57) **ABSTRACT**

A cellular network comprises a plurality of mobile stations and a plurality of base stations. The base stations are located so that each base station has a zone of effective coverage which does not overlap with the zones of effective coverage of adjacent base stations leaving zones of reduced coverage between the base stations. When a sender station which is outside the zone of effective coverage of a particular base station wishes to send a message to that base station, the message is relayed by another mobile station to the destination base station. The relaying station may be located within the zone of effective coverage, or in the zone of reduced coverage of the destination base station. The sender station, the destination station and the relaying station(s) can all be mobile stations located in zones of reduced coverage. In the zones of reduced coverage, resources such as transmission power, transmission time-slots and frequency channels are utilized on a reduced basis, effectively sharing the resources between the stations.

21 Claims, 7 Drawing Sheets

