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(54) Title: DYNAMIC CHANNEL ALLOCATION IN A CELLULAR TELEPHONE SYSTEM

(57) Abstract

A cellular communication system has a plurality of cells and a plurality of channels. The plurality of channels includes a plurality of measurable channels for which interference can be measured in both uplink and downlink directions and a plurality of unmeasured channels for which interference measurements are not made in both uplink and downlink directions. The measurable channels, designated probe channels, may be channels for use in a digital system. The unmeasured channels may be channels for use in an analog system, or broadcast channels. A method and apparatus for allocating the plurality of channels comprises initially organizing the plurality of channels into a plurality of channel groups, wherein each channel group includes at least one probe channel, and wherein at least one of the channel groups further includes at least one unmeasured channel. Then, each one of the cells performs an allocation routine comprising the steps of monitoring at least one of the channel groups by making and collecting uplink and downlink interference measurements only on the probe channel of each monitored channel group over a predetermined time period. Then, the collected uplink and downlink interference measurements are analyzed in accordance with an adaptive channel allocation strategy. Finally, a selected one of the monitored channel groups is allocated to the cell in dependence on the analyzed uplink and downlink interference measurements. In this manner, the unmeasured channels are also subjected to an adaptive channel allocation strategy.

