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(54) Title: ESTIMATING DOWNLINK INTERFERENCE IN A CELLULAR COMMUNICATIONS SYSTEM (57) Abstract <p>A method is disclosed whereby a cellular network's BA lists are modified so that the mobile terminals (12) in the network (10) can measure downlink interference on predetermined BCCH frequencies. These measurements can be made in all cells where the mobile terminals (12) are located and then reported back to the base station (20). The base station (20) maps the reported measurements to corresponding cells, and uses the mapping to produce a cell-to-cell interdependency matrix. For the preferred embodiment, the matrix describes the difference in path loss between cells. This path loss information can be used to derive downlink C/I or C/A ratios between cells (or combinations of those ratios) and thus an estimate of the downlink reference in the frequencies assigned to the same cells. Consequently, the downlink interference in the network can be taken into account when new frequencies are to be selected for each cell, which can be used to increase the overall quality of the network (in terms of the C/I).</p>		