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Title: **CELLULAR LEARNING AUTOMATA BASED DYNAMIC CHANNEL ASSIGNMENT ALGORITHMS**

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Abstract: A solution to channel assignment problem in cellular networks is self-organizing channel assignment algorithm with distributed control. In this paper, we propose three cellular learning automata based dynamic channel assignment algorithms. In the first two algorithms, no information about the status of channels in the whole network will be used by cells for channel assignment whereas in the third algorithm, the additional information regarding status of channels may be gathered and then used by cells in order to allocate channels. The simulation results show that by using the proposed channel assignment algorithms the micro-cellular network can self-organize itself. The simulation results also show that the additional information used by the third algorithm help the cellular learning automata to find an assignment which results in lower blocking probability of calls for the network.

Keywords: Cellular networks; channel assignment problem; dynamic channel assignment algorithm; learning automata; cellular learning automata; asynchronous cellular learning automata