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Algorithm and Software Based on Multilayer Perceptron Neural Networks for Estimating Channel Use in the Spectral Decision Stage in Cognitive Radio Networks

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Abstract : The use of the Multilayer Perceptron Neural Networks (MLPNN) technique is presented to estimate the future state of use of a licensed channel by primary users (PUs); this will be useful at the spectral decision stage in cognitive radio networks (CRN) to determine approximately in which time instants of future may secondary users (SUs) opportunistically use the spectral bandwidth to send data through the primary wireless network. To validate the results, sequences of occupancy data of channel were generated by simulation. The results show that the prediction percentage is greater than 60% in some of the tests carried out.

Keywords : cognitive radio, neural network, prediction, primary user
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