ABSTRACT

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This work proposes the use of a model to identify and classify failures in mobile networks (SMP) of 2nd and 3rd generation. The model was developed based on the features found in network event counters (Clear Codes) produced by the MSC (Mobile Switching Center), equipment responsible for making the connections of mobile subscribers to other subscribers. Clear Codes are collected from MSCs and organized in tables to compose the mass of data to be analyzed. The analysis of the mass of data starts by clustering data into groups using self-organizing maps. Each group is analyzed by an operation and maintenance expert that identifies the common characteristics of data and performs a classification according to the detected fault. Then, classification is incorporated into the model. The classification results in the model output are measured and evaluated to demonstrate the model's ability to identify and classify network failures.

Keywords: Mobile networks; Neural networks; Clustering; Classification.