

# Time-dependent KPI generation based on Copula

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## ABSTRACT

New generations of mobile networks are developed to serve the increasing user and devices connected to the networks. However, the management of these networks has a need of automation, due to the also growing complexity. Self-Organizing Network (SON) was conceived to fulfil the automation of network management, within which troubleshooting is located under Self- Healing (SH). The current tendency is the use of Artificial Intelligence (AI) algorithms that are trained using Machine Learning (ML). This training requires a considerable amount of data. Anyway, the reluctance of operators to sharing their data with the research community causes a scarcity of data representing degradations that can be used for the development and training of ML algorithms. In this paper a method to solve this data sample limitation is proposed. In the first place, the method divides the data into time categories to create models which preserve the time characteristics. Afterwards, it applies statistical copulas to adapt the models into new ones maintaining statistical relationships. Finally, the method returns synthetic data that can be an input for ML. As an example, the data from a real mobile network is processed.

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