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**GENERAL-PURPOSE TOOL FOR THE SIMULATION AND ANALYSIS OF MAINTENANCE****DATA**

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ABSTRACT

This paper covers general mathematical and simulation models for the reliability and availability analysis of repairable systems along with estimation methods and model selection criterion. A combined mathematical and simulation model is proposed, based on the trend-renewal process. This model is then integrated into a general-purpose tool, for automated modelling of repairable systems. Estimators for different performance measures of the systems are presented. Furthermore, a preliminary quantitative study is conducted on real data from the food industry together with a presentation of the implemented tool functionalities.

Keywords: repairable systems; trend-renewal process; simulation; reliability analysis; availability.