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## Methodology for Automated Processing of Virtual Test Results of Electronic Equipment Products

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**Abstract.** The problem to conduct virtual tests of products of electronic equipment is studied. The problem under consideration belongs to the class of state control problems involving the specification of classes of states, their attributes, and the composition of measured parameters that ensure observability of the specified classes, i.e., the uniqueness of the solution with a given reliability. The problematic issues of conducting virtual tests are analyzed. The problem statement is formulated for the development of a methodology for automated processing of virtual testing results, which makes it possible to make reasonable conclusions about the suitability of products with an indication of the reliability measure. A formal solution of the problem based on the theory of fuzzy sets is given, and an algorithm for the method of processing the results of virtual mechanical tests is proposed. An example of the implementation of the methodology for determining the strength of the structure is given. The criterion of model adequacy is determined, which allows reducing the testing error and creating a rational topology of virtual sensors placement. The obtained research results permits one to significantly accelerate the process of development and testing of electronic equipment, as well as to improve their quality and reliability.

**Keywords:** virtual tests, methodology, digital twin, reliability measure, membership function

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