VALIDATION OF SIMULATION MODELS

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ABSTRACT

One of the most difficult problems facing a real-world simulator is that of trying to determine whether a simulation model is an accurate representation of the actual system which is being studied. In this paper we present the results of a two-phase study to develop definitive qualitative and statistical procedures which actually can be used by a simulator in his validation efforts. The objective of the first phase was to develop a state-of-the-art survey of the qualitative considerations which come into play when attempting to validate a simulation model. Information for this survey was based not only on existing papers dealing with validation, but also on conversations with notable members of the academic and industrial communities who have had firsthand experience with validation. The second phase of our study sought to develop statistical procedures which can be used for comparing the output data from a simulation model and a corresponding real-world system (if the system exists). Although the existing validation literature states that such comparisons can be made, the manner in which this comparison could be carried out has not been explicitly stated.

Complete details of this paper may be found in Law [1, 2].

REFERENCES

1. Law, A.M., "Validation of Simulation Models, I: An Overview," Technical Report No. 78-14, Department of Industrial Engineering, University of Wisconsin (1978).

2. Law, A.M., "Validation of Simulation Models, II: Comparison of Real-World and Simulation Output Data," Technical Report No. 78-15, Department of Industrial Engineering, University of Wisconsin (1978).

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