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Nance is Professor and Head of the Department of Computer Science at Virginia Tech. His research in discrete simulation has included randum number generation, time flow mechanisms, the conceptual foundations of model representation, and heuristic procedures for the efficient execution of simulation models. He has also published papers in the area of performance evaluation and analysis of computer systems. The past chairman of the TIMS College of Simulation and Gaming, Dr. Nance is a member of the Winter Simulation Conference Board, departmental editor for simulation, gaming, and information systems of AIIE Transactions, and chairman of the external activities board of ACM.

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DOCUMENTATION OF SIMULATION MODELS: PROSPECTS AND PROBLEMS

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ABSTRACT

The need for standards to improve the management of computerized models used by the Federal Government is expressed in a recent report of the General Accounting Office. The National Bureau of Standards has supported work in exploring the procedures by which management standards can be developed, and has identified as a near-term feasible goal, the development of documentation standards for computer models in general and simulation models in particular.

A study of the feasibility of and methodology for simulation model documentation standards concludes that:

(1) Model documentation and specification should be accomplished through a top-down analysis,

(2) A language for model specification and description is required, and

(3) the description of model dymanics remains the major obstacle to simulation model description.

The study outlined the methodology for standards development as encompassing two phases - the research phase and a standards creation phase. Critiques of the conclusions in the proposed methodology were based on a wide range of expert opinion briefs in order to obtain a balanced perspective. Responses to questions dealing with the need for standards, the arguments against standards development, and the conclusions and suggestions reached in the study reveal a surprising consensus and some important points of disagreement.

This paper is being presented as an abstract so that late-developing considerations in both the Government's approach to modeling standards and research results and feedback may be presented at the Conference. It will also include a discussion of future considerations and policy issues with regard to simulation model documentation and its role within the broader issue of developing standards for the documentation of computer models.