

# Why it is important to discuss the Generic Features of a Discrete Event Simulation Software

**Sankar Sengupta**

Professor, Department of Industrial and Systems Engineering,  
Oakland University

## Abstract

The purpose of this technical paper is to present the generic features of a discrete event simulation software. The generic features represent the needs of a model builder during the translation of a problem statement into a simulation model. The generic features are software neutral and recognition of them helps a simulation model builder to migrate from one software to another easily. Some examples of the generic features related to model building include: entity generation scheme, resource management procedures, queue management procedures, manipulating the simulation clock, representation of system state and ways to terminate a simulation run. In addition, the features also include the important tasks of analyzing the input data to identify the best statistical distribution for each random element and generation of random variates from commonly used statistical distributions. The generic features also include a good source of random number generator as well as capabilities for statistical analyses of simulation results. Simulation is an evaluative and not a normative tool. The decision maker is often interested to find the best operating parameters of a system that requires use of optimization procedures. The DES software should have the added capability to include a search procedure that can operate on a simulation model to carry out this task.

## Keywords

Event, Simulation, Software, Simulation and Model.

## Biography

Sankar Sengupta is a Professor in the Department of Industrial and Systems Engineering at Oakland University. His research interests include: modeling and performance analysis of manufacturing and service systems including healthcare system, supply chain modeling and risk analysis, reliability modeling and novel applications of simulation. He has years of industrial experience and is actively involved with local industry. He has published in reputed journals and has made technical presentation both in national and international conferences.