

MATHNET: A REPRESENTATION AND ANALYSIS
TECHNIQUE FOR STOCHASTIC NETWORKS

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The methodology presented here was developed in response to the need for a simple way to perform time-cost tradeoff analysis of research and development programs. MATHNET has been adopted by members of the managerial community as an effective tool for such analyses. Its enthusiastic reception can be directly traced to its development history.

MATHNET was originally designed as a teaching aid for a seminar on the risk analysis of R & D projects. As a result it is extremely simple to learn. Persons familiar with PERT, or other network representation schemes, have learned MATHNET in the course of very short training sessions.

The extension of MATHNET's capabilities has been dictated by situations encountered by MATHEMATICA personnel in the course of conducting risk analyses of a wide class of programs. Most R & D projects, therefore, are representable by existing MATHNET symbology. The modular design of MATHNET provides for the easy addition of symbols to represent decision types not presently incorporated in the system.

MATHNET has already proven to be of great value in the risk analysis of several large-scale research and development programs. It is anticipated that MATHNET will have an impact on the analysis of programs requiring stochastic representations similar to the impact that PERT had on programs representable by deterministic networks.