

Scenarist Automated Scenario Generation System

Summary

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## Summary

The Scenarist is a knowledge-based system that assists the generation of military scenarios. The system is being developed by Vista Research Corporation under contract number DAAB07-89-C-P017 from the US Army Communications-Electronics Command (CECOM). Although the immediate application of the Scenarist will be the generation of "laydowns" of electronic equipment to assist the evaluation of electronic warfare system concepts, the scenarios produced by the system may be used in a variety of applications, including force planning; research, development, test and evaluation; operational planning and evaluation; and training and education.

The project to develop the Scenarist began on September 1, 1989; and will continue through August 31, 1991. An initial prototype has just been developed. During the rest of this year, work will center on testing, demonstration, and documentation.

The initial prototype of the Scenarist runs on an "80386" microcomputer. The system has been designed, however, to facilitate conversion to other computers, utilization of different databases, and interface with a broad class of other models that have a need for scenarios. It will allow the user the capability to create and modify the rules of the knowledge base. The system functions have been separated into "modules" to facilitate conversion of the system to other graphics workstations, databases, and applications. System features include interactive graphics terminal and keyboard input/output; utilization of geographic information derived from Defense Mapping Agency databases; and utilization of standardized force structure data. The output of the system is a detailed force laydown, displayed on a video terminal, on laser-printer hard copy, or on floppy-disk files for input to other systems.

The Scenarist is a knowledge-based system that will position military units and equipment according to rules that account for tactical doctrine, the mission and objectives of the friendly forces, the enemy threat, and geographic terrain features. The system begins by producing a "canonical" laydown of "generic" units. These canonical laydowns take into account tactical doctrine and the unit organization and equipment, but they do not account for the mission, enemy threat, or geographic features. The rules of the knowledge-based system then modify the canonical laydown to account for these factors.

The system user inputs certain basic scenario information, such as the location of the upper-echelon units, the location of the Forward Line of Own Troops (FLOT), and the nature of the mission and enemy threat. The system then applies the rules stored in a knowledge base to position the forces in accordance with this input. If desired, the user may override the rule-based positioning by using the system to position forces "manually." This feature enables the system to include scenario features other than those that are embodied solely in the rules of the knowledge base.

The completed System will be able to accept digital terrain data derived from Defense Mapping Agency databases.

The Scenarist system is being developed using a "rapid prototyping" approach, in which a series of

versions of the system are developed. Each version, or prototype, is reviewed and subsequently modified to produce an improved versions.