

# Electronic Proving Ground Successfully Launches 'Starship'

## Supporting the Testing of Developing Army Technologies

MIKE CAST

Innovative software developed by computer programmers at the Army's Electronic Proving Ground (EPG) at Fort Huachuca, Ariz., is saving manpower, resources, and money. It does this by remotely and efficiently controlling test instrumentation and receipt of data at numerous sites during exercises and tests of state-of-the-art military systems.

### "Starship"

For the past year-and-a-half, the EPG has been using an exercise or test simulation "engine" called Starship to help the Army conduct live and virtual tests of command, control, communications, computers, and intelligence equipment such as the Army's Enhanced Position Location Reporting System and the Unmanned Ground Vehicle (UGV).

Operating on a Windows NT platform, Starship allows EPG test officers to direct and monitor a variety of sophisticated test instrumentation for EPG. It not only allows for remote control of test instrumentation, but continually provides information about their status, alerting testers to problems if instrumentation is not functioning properly.

Three programmers at EPG worked jointly to develop the program, a Windows-type software that requires very little in the way of unique hardware, said Daniel Searls, chief of EPG's Test Support Branch.

*Cast is a public affairs specialist with the U.S. Army Developmental Test Command Public Affairs Office, Aberdeen Proving Ground, Md.*



*Starship was developed using a "plug and play" approach that makes it relatively simple to add new "controllable entities" such as test instrumentation and alarms, or alter them.*

*Daniel Searls, Chief of EPG's Test Support Branch*

"You can control anything you can define," Searls said, explaining that the program enables EPG to have "smart" test instrumentation. "Star-

ship has become a very valuable tool, not only for the testers, but for the people in the field," he said. "It offers another example of how to col-

lect more and better-quality data with fewer people.”

In addition to its role in supporting tests at EPG, Starship has been used to support UGV analysis and simulations via the Developmental Test Command's Virtual Proving Ground. It was used in that exercise to link various UGV components at Fort Huachuca, the Redstone Technical Test Center at Redstone Arsenal in Alabama, and Dugway Proving Ground in Utah, and to display the sta-

ulations, said Janet McDonald, Virtual Electronic Proving Ground program manager at EPG.

Searls said the program was developed using a “plug and play” approach that makes it relatively simple to add new “controllable entities” such as test instrumentation and alarms, or alter them. Starship is extensible and adaptable, he said, so it can be expanded or customized to accommodate added instrumentation and types of data input. It is

Starship was developed so that its components can be distributed across separate networked computers, to reduce the data load on a single computer and meet the ever-growing processing demands of future tests and exercises. It also allows variable user settings that can accommodate changing test or exercise conditions and scenarios.

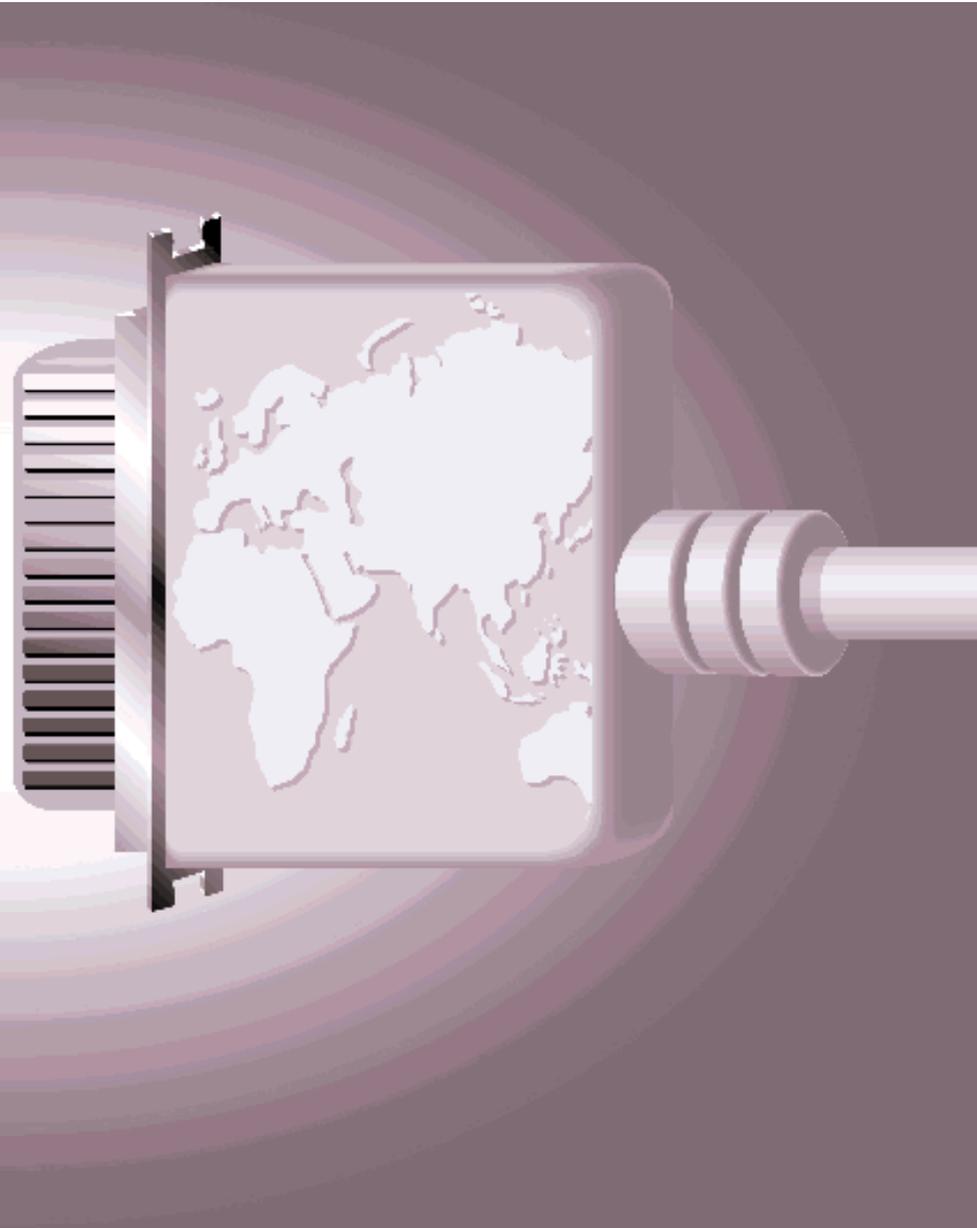
Searls said the program's user interface is very flexible and configurable, much like the Windows-based software familiar to today's computer users.

Starship users can also easily group test instruments to respond to the needs of a particular test or exercise scenario. The program includes a scenario recorder and player that can log and replay any part of a test or exercise in real, or multiples of real time.

Starship can communicate over different network types and network protocols. It is designed to interface with other programs via two communication protocols in use by the military for modeling and simulation: Distributed Interactive Simulation (DIS) and High Level Architecture (HLA). DIS, a protocol that enables separate modeling and simulation programs to cooperate and process interactive input from various sources in real time, has been replaced by HLA as a Defense Department and NATO standard. HLA is an internationally used software architecture for modeling and simulation programs and is designed to support interoperability and reuse of simulations.

Members of the Army's test team at EPG hope to provide greater capability to customers in less time and at a lower cost by using and further developing project management technologies such as Starship. The intent is to support testing, training, and military acquisition through continued innovation, adaptability, and cost-effectiveness.

**Editor's Note:** The author welcomes questions and comments on this article. Contact him at [castm@dtc.army.mil](mailto:castm@dtc.army.mil).



tus of the exercise rather than control equipment. It will be used in future UGV exercises to start and control “entities” such as test instruments, UGVs, or sim-

scalable, allowing the system to expand in size and configuration, not only to accommodate a greater number of instruments, but also a larger number of users.