

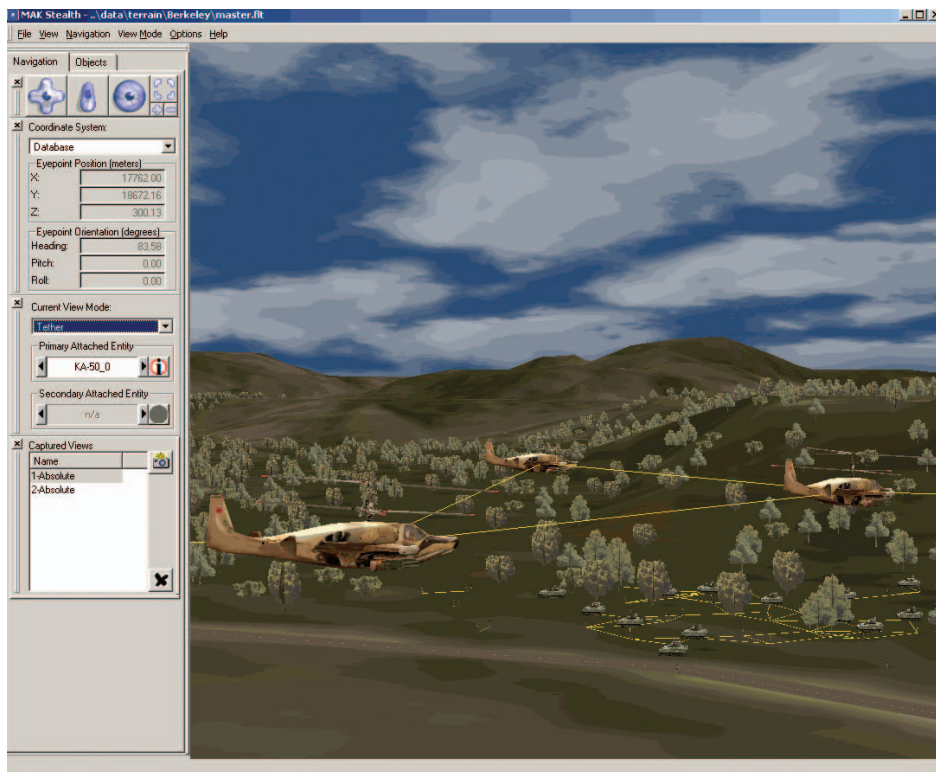
PROGRAM NOTES

Visualizing the Network

As wireless data networks become an increasingly important part of military operations, battle planners need to be more aware of the potential advantages and limitations of this technology as they prepare for operations in the field. To fill this need, a leading software company has introduced a software module designed to give planners a vivid, three-dimensional visual image of their wireless networks in action.

The 3D Network Visualizer (3DNV), introduced by OPNET Technologies, a provider of COTS solutions for network modeling and simulation, enhances the value of the company's simulations for mobile wireless environments. The new software automatically shows mobile wireless simulations in three-dimensions, including detailed terrain, performance statistics and graphical representation of communications. The module helps to accelerate the development of new wireless technologies by providing realistic simulation scenarios and facilitates the use of modeling and simulation in operational environments.

"3DNV is especially important as warfighters shift from traditional dedicated communications circuits to mobile IP-based networks," explained Marc A. Cohen, chief executive officer of the Bethesda, MD-based company. "Military planners have not historically placed a high priority on accurately accounting for the impact of networking and communications, simply because they were relying on dedicated circuits. But mobile ad-hoc IP-based networks rely on relatively new technology, so planners have limited experience in understanding the behavior of these systems.



3DNV simulates in a realistic representation the impact scenario and environment have on transformational communications systems. (OPNET Technologies photos)

"If you look at the transformational communications systems, they are based on advanced, adaptable wireless protocols," Cohen continued. "But their ability to deliver communications depends on the scenario and environment in which they are deployed. So it is imperative that engineers can account for communications effects during the planning process. 3DNV empowers engineers to understand the impact of their decisions, in a realistic synthetic environment. Some drivers for this new capability are the breakthrough communications systems being developed

for the military's next generation of satellites, the new JTRS radios, Future Combat Systems, and the Warfighter Information Network-Tactical (WIN-T)."

The 3DNV software displays information describing communications status and performance, such as connectivity, throughput, link quality and ad hoc routing. Users of the product can then determine whether available network resources deployed can support the overall battle plan.

Cohen summed up the need for advanced network planning solutions by adding, "The military is moving towards a network-centric paradigm where communications become a critical enabler for the warfighter. Failure of the communications systems to support any aspect of a given mission can result in the failure of that mission. Mission planners can therefore no longer assume adequate communications performance nor use abstract methods to estimate it. 3DNV represents a new paradigm for network engineers and planners, who for many years have relied on OPNET's modeling and simulation products for their important work."

