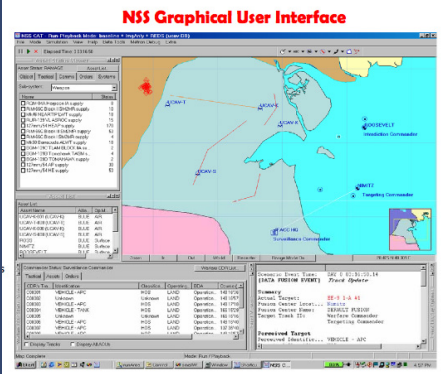
SPAWAR

Navy SBIR/STTR Success



Development of a Multiple Warfare Architectural Assessment Model

Designed and developed to model modern warfighting, NSS explicitly simulates weapons and platforms; command and control; intelligence, surveillance and reconnaissance; and the information network that ties together the warfighting force.

Topic Number: N89-017

SBIR Investment:
$573,800

Phase III Revenue:
$78,576,500

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About the Technology:

The Naval Simulation System (NSS) is an object oriented simulation tool, first developed in the early 90s as an analytic tool for force employment and course of action analysis for Fleet use. It models entity-level interactions with a specific focus on C2, (i.e. the collection of information by sensors, the dissemination of that information over communications networks, the fusion of that information into a tactical picture, and a commander's decision-making based on the locally-held tactical picture). In addition, NSS represents detailed command structures to simulate decision-making at various levels within a command architecture. Plans of the Commander are represented as well as an individual asset's reactions to stimuli within their perceived environment. NSS was funded as a Program of Record between 1998 and 2003, but has since been 100% user-funded. The simulation includes over 1.3 million lines of object-oriented code, and is available to government and industry users, with only a small cost associated with the embedded COTS database management system.

Naval Benefit

This technology provides an important capability to the US Navy, most notably the fielding of a multi-warfare simulation that allows the Navy to quantify the value of C4ISR investments on warfighting effectiveness. The SBIR-developed technology transitioned into the Composite Warfare Model (CWM), which was acquired by Northrop Grumman, and then into the Naval Simulation System (NSS), which is 100% government-owned. The uniqueness of the simulation is its ability to explicitly represent the technologies and networks related to C4ISR, and to produce metrics that quantify the value of proposed systems, associated networks, and C4ISR architectures.

Transition

The joint community had intended the Joint Warfare Simulation (JWARS) to be used for all warfare assessments across the DoD and funded JWARS at a level of $11 million a year over the course of a decade. Ultimately, the JWARS program was cancelled. NSS cost the government significantly less money to develop than the JWARS program, yet provides most, if not all, of the capabilities envisioned for JWARS. NSS, the outcome of this SBIR, has been successfully used for analytic studies (with more speed and fidelity than what was possible with JWARS) for Navy, Air Force, and OSD organizations since 2000. This SBIR project led to three Navy contracts for the development and employment of NSS, generating close to $80 million in revenue for Metron as a result. The model is currently in use at COMPACFLT N00WAR, NAVAIR 4.10, NWDC, OPNAV N81, ONI, OSD CAPE, NORTHCOM, and multiple industry sites. NSS serves as a basis for the 4Aces® simulation tool, a commercial product developed by Metron, and the Joint Systems Analysis Simulation (JSAS), a model developed for Lockheed Martin as part of the USCG Deepwater effort. Both NSS and JSAS are being considered for use as the USCG's next-generation campaign analysis model. In any given year, the commercialization of this SBIR-funded technology represents approximately 25% of Metron's total revenue.

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Metron, Inc.

Published 2013