SPAWAR

Navy SBIR/STTR Success

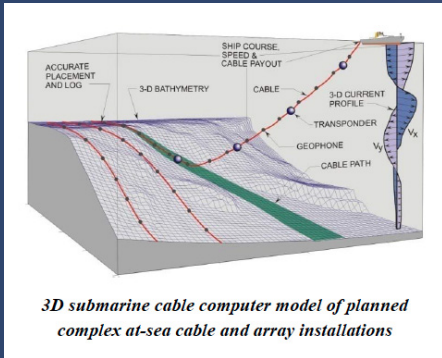3D submarine cable computer model of planned complex at-sea cable and array installations

Near Real–Time Installation Modeling of Cables and Sensor Arrays Deployed From a Towed Body

The Navy saves several million dollars annually during inspection, recovery and repair operations by laying cable along pre-established routes, minimizing costly search time.

Topic Number: N99-171

SBIR Investment:
$850,000

Phase III Revenue:
$15,150,000

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About the Technology:

In the past, the Navy had to determine the location of surveillance cables by conducting an expensive acoustic post-lay survey with a vessel, which endangered the covertness of the operation and delayed the use of the surveillance system. Makai set out to develop a method of accurately computing the location and shape of an array on the seafloor shortly after deployment, such that the array can be immediately used. Makai's commercial product is a rigorous, real-time, PC-based, 3D submarine cable computer model that is able to simulate, monitor, control, and plan complex at-sea cable and array installations. The technology depicts the precise shape and position of arrays installed on the seafloor.

Naval Benefit

Development of a real-time deployment model improves the stealth and deployment accuracy of installed surveillance arrays. The quality, speed and functionality of the software improve the accuracy and reliability with which submarine cables are installed. Cable operators lay the cable faster, with greater control over slack/ tension operation - resulting in several million dollars of cost savings per year for the U.S. Navy.

Transition

In 2010, Makai integrated the technology developed from this SBIR into software for the oil seismic industry to install and retrieve cables with geophones for 4-D seismic surveys. Since 2001, this software product is being used by commercial companies installing fiber optic telecommunication cables and by the U.S. Navy for the installation of ASW ranges and by the IUSS program. By mid-2011, 75% of the worldwide fleet of major cable installation vessels was using this technology to install cables with a high degree of positional accuracy. Makai generates over $1 million/year in revenues from the sale of this product.

SBIR STTR

Makai Ocean Engineering, Inc.