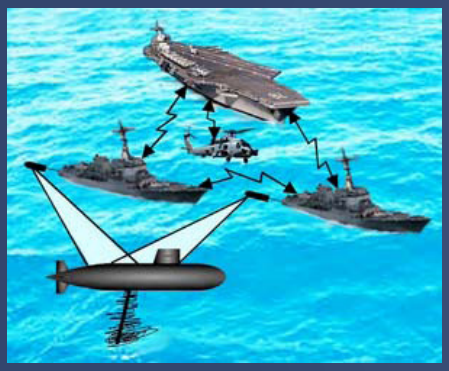
Navy SBIR/STTR Success



Network Centric Data Fusion (NCDF)

NCDF provides a more accurate and less cluttered torpedo defense Situational Awareness (SA) picture to Naval vessels; Common Tactical Picture (CTP) to the strike group commander; and Common Operational Picture (COP) to the theater commander.

Topic Number: N08-057

SBIR Investment:
$1,599,403

Phase II Investment (non-SBIR funds):
$200,000

Phase III Revenue:
$3,333,643

Dr. W. Reynolds Monach
(757) 727-7700
reynolds@va.wagner.com
559 West Uwchlan Avenue, Suite 140
Exton, Pa 19341
www.wagner.com

About the Technology:

Understanding the platform level torpedo defense Situational Awareness (SA) picture, which gives the best available estimate of the location and track of each torpedo defense relevant physical object in the area of interest, is required to alert the commander/operators that their ship is under torpedo attack. Understanding the strike group Common Tactical Picture (CTP), which gives the best available estimate of the location and track of each physical object in the strike group area of interest, is essential for the strike group commander and operators to assess threats to the strike group and to allocate strike group level assets. Understanding the theater Common Operational Picture (COP), which has the best available estimate of the location and track of each physical object in the entire theater, is essential for the theater commander and operators to assess threats to friendly forces and to allocate theater level assets. Network Centric Data Fusion (NCDF) aids in that process by combining data from multiple nodes and multiple sensors such as passive and active acoustic, radar, electronic intelligence, and Automatic Identification System (AIS) sensors. In addition to automatically generating an accurate, operationally relevant own-platform SA picture, CTP, or COP; NCDF prioritizes targets, estimates target classification, and generates alerts. NCDF supports all standard Navy sensors and data sources, and has successfully processed passive and active sonar, radar, and AIS data at-sea, and OTH Gold and AIS data at COMPACFLT, COMFIFTHFLT, and COMSIXTHFLT. A key feature of NCDF is its sophisticated use of multiple hypotheses to deal with conflicting data, producing interim results that it revises as additional data becomes available.

Naval Benefit

NCDF produces an accurate and de-cluttered own-platform SA picture, CTP, or COP and focuses the operator's attention on high-interest contacts by prioritizing targets, estimating their classification, and generating automated alerts. These capabilities allow Naval operations to be conducted cost effectively, with reduced manpower, and at lower risk – resulting in fewer casualties to friendly forces and improved overall Navy and Joint Forces effectiveness. NCDF components are designed for rapid and cost-effective integration into any system requiring an accurate own-platform SA picture, CTP, and/or COP.

Transition

Phase II.5 and Phase III funding from the NAVSEA PEO IWS SBIR office, NAVSEA PEO IWS 5A, and ONR matured these NCDF technologies, allowing them to transition into three programs of record. These transitioned products, at the platform level, are used in an automated torpedo defense system to increase torpedo attack probability of detection and lower the false alarm rate. At the strike group level, NCDF products generate an accurate fused undersea warfare CTP. At the theater level, NCDF products generate a more accurate and less cluttered COP.

Daniel H. Wagner Associates, Inc.

Published 2013