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Unlimited Release

Project Accomplishment Summary

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Sandia National Laboratories
Operated for the U.S. Department of Energy by
Sandia Corporation
Albuquerque, New Mexico

PROJECT ACCOMPLISHMENTS SUMMARY

Cooperative Research and Development Agreement (#1758.01)

between **Sandia National Labs** and **Northrop Grumman Systems Corporation**

Note: This Project Accomplishments Summary will serve to meet the requirements for a final abstract and final report as specified in Article XI of the CRADA.

Title: Source Code Modifications to Recognize Ships Docked in a Port

Final Abstract:

Sandia National Laboratories and Northrop Grumman Electronic Systems have collaborated on the modification and implementation of synthetic aperture radar (SAR) automatic target recognition (ATR) algorithms for ships docked in a port. Sandia and Northrop Grumman successfully demonstrated SAR ATR on images in a laboratory demo. This collaboration provided clear benefits to all stakeholders: Sandia transitioned portions of its SAR ATR system to a new application, Northrop Grumman demonstrated proven SAR ATR capabilities in a laboratory system, DOE transitioned Sandia-developed technology to a commercial entity in accordance with its technology transfer mission, and the American public benefited by having a critical technology brought closer to the hands of the warfighter.

Background:

Sandia is a leader in the development and deployment of SAR ATR. Northrop Grumman Electronic Systems is a leader in the development and deployment of integrated sensor systems. This collaboration between Sandia and Northrop Grumman enabled each partner to apply its complementary technologies in order to bring a proven SAR ATR capability closer to deployment against a new type of target.

Description:

The purpose of this collaboration was the development and implementation of SAR ATR algorithms for targeting ships in port. In particular, implementation of a laboratory demo system involves much of the development and systems integration necessary for implementation on a fielded platform, and enables evaluation and development iteration prior to implementation on a fielded platform. Over the course of this collaboration, Sandia and Northrop Grumman successfully developed and implemented an SAR ATR capability for targeting ships in port.

Benefits to the Department of Energy:

This project strengthened technological capabilities in two key DOE program areas that involve SAR: nonproliferation and counterterrorism. SAR image exploitation is vital to DOE's efforts in each of these areas. Additionally, this project is a clear example of successful DOE technology transfer: it involved the transfer of a Sandia-developed technology to a commercial entity, simultaneously enhancing national security and enhancing the economic competitiveness of the commercial partner.

Economic Impact:

As previously described, implementation of a laboratory demonstration system is a jumping-off point to future implementation on fielded platforms and sensors. The future implementation of Sandia SAR ATR technologies on fielded platforms and sensors, as in the current collaboration, would involve a joint effort

from both Sandia and Northrop Grumman. The timeline for transitioning this implementation to a fielded system is variable.

Project Status:

Completed

ADDITIONAL INFORMATION

Laboratory/Department of Energy Facility Point of Contact for Information on Project

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Company Size and Points of Contact

Northrop Grumman has 117,100 employees and a 2010 sales figure of $34.8 billion. The Northrop Grumman point of contact for this collaboration is Dave Short (phone 410-765-2316, email dave.short@ngc.com).

CRADA Intellectual Property

A list of all CRADA intellectual property, product rights, and proprietary components (as jointly agreed upon between Sandia and Northrop Grumman) can be found in CRADA file 1758.01.

Technology Commercialization

The SAR ATR technology developed over the course of this project will not be commercialized as a part of this project.

Project Examples

Specific project results and summaries are either classified or official use only.

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This summary has been approved for public release by Sandia and Northrop Grumman Systems Corporation

Sandia National Laboratories

By Wallace J Bow Jr
Wallace Bow
Principal Investigator

8/17/2012
Date

Sandia National Laboratories

By
Manager
WFO/CRADA Agreements

8·15·12
Date

Northrop Grumman Systems Corporation

By
Title:

Date