

RESEARCH, DEVELOPMENT, TEST AND EVALUATION PROGRAM



Acquisition Directorate



During the RDC's Arctic Technology Evaluation 2015, a team conducts a technology evaluation of wave gliders.



RDC FACILITIES

- The Research and Development Center is home to the Coast Guard's Photometric Laboratory, which supports test and evaluation of aids to navigation to improve performance, lower costs and extend maintenance intervals
- The RDC houses the Automatic Identification System Laboratory, which provides a platform to evaluate AIS data feeds from a variety of sources and test capabilities before implementing operationally
- The RDC opened the Science and Technology Innovation Center, which uses innovation, prototyping and rapid integration to find high-technology solutions to operational challenges within the Coast Guard and DHS, in May 2016
- The RDC runs the Modeling and Simulation Center of Expertise, which provides the Coast Guard timely, cost-effective access to powerful modeling and simulations capabilities and analysis to aid decision making
- The RDC operates a Joint Maritime Test Detachment in Mobile, Alabama; it is the only facility in the world using actual ships for full-scale fire testing

For updates on many RDT&E programs, visit the RDC website at <http://www.uscg.mil/acquisition/rdc/> or use this QR code:



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PROGRAM DESCRIPTION

The Coast Guard Research, Development, Test and Evaluation program enhances acquisition and mission execution by helping transition new technologies into the service's operational forces. The program is comprised of the Office of RDT&E (CG-926) at Coast Guard headquarters in Washington, D.C., and the Research and Development Center in New London, Connecticut. The RDC is the Coast Guard's sole facility performing applied RDT&E experimentations and demonstrations.

At any given time, the RDT&E program is working on more than 80 programs that support Coast Guard requirements across all mission areas. The program also provides Coast Guard leadership with knowledge necessary for making strategic decisions. The RDT&E program lever-

ages partnerships with academia and other government agencies. The RDC also leverages Cooperative Research and Development Agreements under the Technology Transfer Act to work with private industry to anticipate and research solutions to current and future technological challenges. Examples of partners include Department of Homeland Security Science & Technology Directorate's Borders and Maritime Security Division and Office of University Programs and the Bureau of Safety and Environmental Enforcement.

Individuals and organizations interested in partnering with the RDC for future program work should contact Dr. Joseph DiRenzo, RDC partnership director, by email at: Joseph.DiRenzo@uscg.mil.

PROGRAM AREAS

The RDT&E program brings value to the organization by investing in new ideas and technologies to help the Coast Guard better perform its missions in the future. Programs typically fall into six main program areas:

Technology Innovation & Analysis

The TIA Branch produces analysis products that address specific ques-

tions for decision-makers, including requirements and alternatives analysis, mission analysis, risk analysis and life cycle analysis.

Aviation

The Aviation Branch provides program support to sensor and airborne platform technologies, mission-relevant test and evaluation, performance

Mission execution begins *here*.

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PROGRAM AREAS CONT'D



Polar Icebreaker Acquisition Support



Operational Testing of Electro-Optical/Infrared Sensor System



Coast Guard Maritime Operational Effectiveness Simulation Application



Arctic Communications



Detection and Mitigation of Oil Within the Water Column



Non-Lethal Impact Munitions



measurement and analysis, and performance model validation programs.

Command, Control, Communications, Computers, Intelligence, Surveillance and Reconnaissance

The C4ISR Branch supports maritime domain awareness, command and control, tactical communications and cybertechnology programs.

Environment & Waterways

The E&W Branch supports aids to navigation, pollution and non-indigenous species prevention and response, and Automatic Identification System programs.

Modeling and Simulation Center of Expertise

The M&SCOE, unique to the RDC, produces tools that support fleet mix analysis, tactical mission engagement "what-if" scenarios, sensor optimization, resource allocation and game theory-based scheduling tools.

Surface

The Surface Branch provides program support to Arctic missions as well as programs to enhance vessel technology, port security, law enforcement, alternative energy and weapons of mass destruction identification and prevention capabilities.

RECENT AND ONGOING RDT&E PROGRAMS

Polar Icebreaker Acquisition Support

TIA BRANCH

The RDC is supporting development of an Operational Requirements Document and is conducting an Alternatives Assessment to help decision-makers with the acquisition of a new polar icebreaking capability to ensure the Coast Guard can continue fulfilling its statutory icebreaking mission in the polar regions.

Operational Testing of Electro-Optical/Infrared Sensor System

AVIATION BRANCH

This program validated the effectiveness of ESS operations and provided recommendations to improve current ESS settings, configurations and employment techniques on the MH-60T and MH-65C/D helicopters to ultimately increase search and rescue and maritime domain awareness mission effectiveness.

Coast Guard Maritime Operational Effectiveness Simulation Application

M&SCOE

This program addresses the need for a streamlined capability for routine Coast Guard-wide asset allocation/force structure support initiatives, operational effectiveness assessments and systemwide trade-off studies to support strategic capability and acquisition decision-making.

Arctic Communications

C4ISR BRANCH

This program validated High Frequency communication coverage models in the Arctic and helped identify inland locations for new HF infrastructure that could close gaps, improving range, clarity and consistency of communication for Coast Guard assets operating in this area.

Detection & Mitigation of Oil Within the Water Column

E&W BRANCH

This program focused on the development of a detection system to identify and track subsurface oil spills within the water column. Phase I developed design concepts and Phase II concentrated on prototype development and testing to ensure the Coast Guard's response capability to environmental disasters beneath the water's surface.

Non-Lethal Impact Munitions

SURFACE BRANCH

This program identified and assessed four state-of-the-art non-lethal weapon systems and six different munitions to expand the Coast Guard's non-lethal munitions capabilities in vessel-to-vessel, high-speed pursuit scenarios, ultimately providing units with greater flexibility when compelling compliance from noncompliant vessels.

Mission execution begins *here*.