



Acquisition Directorate

Research & Development Center

RDC FY13 Project Portfolio

1st Quarter Update

UNCLAS | RDC FY13 Project Portfolio-1st Quarter Update
| RDC | T. Girton | CG-92 | 15 January 2013



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(Note: Highlighted projects indicate new starts.)



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(Note: Highlighted projects indicate new starts.)



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(Note: Highlighted projects indicate new starts.)



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(Note: Highlighted projects indicate new starts.)



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(Note: Highlighted projects indicate new starts.)





Acquisition Directorate

Research & Development Center

RDC FY13 Project Portfolio



RDT&E Funded Projects



Evaluate Risk Associated with Port/Waterway Closures

Mission Need: A methodology to evaluate the risk of port/waterway closures and the economic impacts they may cause based on their duration.

Project Objectives:

- Develop a defensible and repeatable methodology to evaluate the risk of port/waterway closures that can be applied to any port in the U.S., whether inland or coastal.
- Assess the local, regional and national economic impacts of port/waterway closures based on the duration of the shutdown.
- Recommend marine safety safeguards that can mitigate the consequences of port/waterway closures.

Sponsor: CG-5PW

Stakeholder(s): LANT 09, LANT 54, DHS S&T (OUP)



Key Milestone / Deliverable Schedule:

Project Start	8 Jan 13 ✓
Status Stevens Institute Magello Product	Apr 13
Collaborate with CREATE & OGA (DOT/VOLPE)...	Apr 13
Document Preliminary Risk & Data Models	May 13
Compile Project Findings.....	Jun 13
★ Port/Waterway Closure Economic Risk Assessment Methodology.....	Sep 13
Present Findings & Determine Next Steps	Nov 13
Project End	Dec 13

★ Indicates RDC product.

Project #: 5919	Tier: 3	RDC POC: Mr. Warren Heerlein 860-271-2625	CG-926 Domain Lead: LT Derek Storolis 202-475-3492
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Expected Benefit:

Improve operational performance/efficiency/mission execution/resiliency

Notes:



PROTECT and Other Deterrence Models

Mission Need: Operational risk-based resource allocation decision models with attributes that incorporate the value of direct contact and virtual means to deterrence and prevention.

Project Objectives:

- Develop a tool based on game theory that will randomize patrol schedules weighted towards high-valued targets that maximizes deterrence.
- Develop a tool that will measure the deterrence impact value of CG mission operations.
- Leverage the previously completed security analytic research of DHS Centers of Excellence such as USC/CREATE.

Sponsor: DCO-81

Stakeholder(s): LANT-73, DHS S&T (OUP), CG-MSR, CG-771



Key Milestone / Deliverable Schedule:

Project Start	23 Jun 10 ✓
★ Proof of Concept PWCS Patrol Randomization Model.....	8 Sep 11 ✓
★ Exploration of Visualization Methods for PWCS Deterrence Operations.....	5 Oct 11 ✓
★ Deterrence and the USCG: Enhancing Current Practice with Performance Measures.....	22 Mar 12 ✓
★ Technology Transition Agreement Signed.....	14 Dec 12 ✓
★ LA/LB PROTECT Implementation Analysis Rpt.....	Mar 13
★ PROTECT Prototype Analytic Vis. Dev. Rpt.....	Jun 13
★ PROTECT Prototype Optimized Random Scheduler Model Development Report.....	Jun 13
★ DIME Pilot Test, Evaluations and Findings Report	Dec 13
Project End	Jul 14

★ Indicates RDC product.

Project #: 7512	Tier: 3	RDC POC: Mr. Craig Baldwin 860-271-2652	CG-926 Domain Lead: LT Derek Storolis 202-475-3492
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Expected Benefit:

Improved Doctrine/CONOPs/TTPs

Notes:



Analysis in Support of Transition

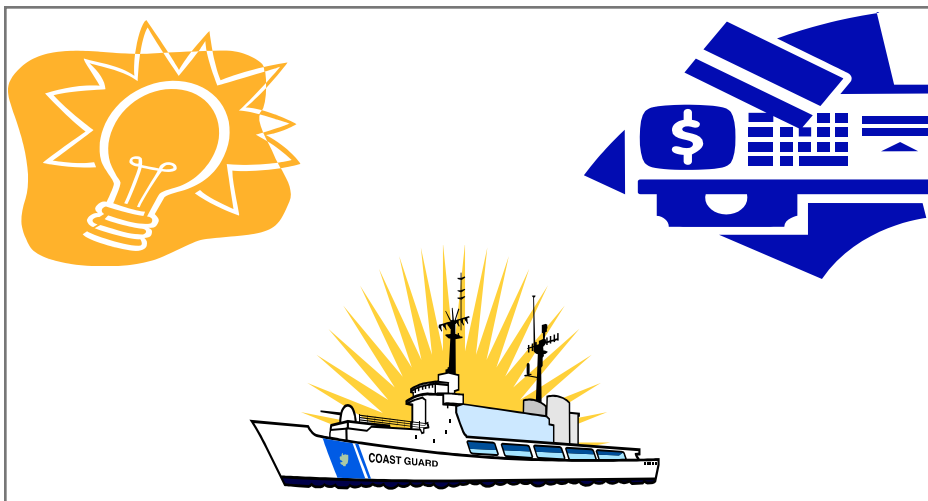
Mission Need: A process to transfer a good idea or COTS tool to CG-wide use.

Project Objectives:

- Develop a user-friendly, repeatable checklist on how to transition good ideas to the CG.
- Develop a process to identify a “Champion” for projects to support funding and transition of those projects to CG-wide implementation.

Sponsor: CG-926

Stakeholder(s): CG-6, CG-7, CG-9



Key Milestone / Deliverable Schedule:

Project Start	Jan 13
Identify Example Cases.....	Feb 13
Identify Lessons Learned.....	Mar 13
★ Transition Support Roadmap.....	Sep 13
Project End	Oct 13

Project #: 7928	Tier: 3	RDC POC: Ms. Kathleen Shea Kettel 860-271-2770	CG-926 Domain Lead: LT Derek Storolis 202-475-3492
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Expected Benefit:

Inform follow-on acquisition/enterprise deployment

Notes:

★ Indicates RDC product.



Ergonomics Analysis of Communications Centers (COMMCENs)

Mission Need: Improve COMMCEN performance through ergonomic design.

Project Objectives:

- Conduct ergonomics analysis of COMMCENs to identify issues.
- Identify constraints on solution set.
- Develop recommendations to provide improved ergonomics and COMMCEN performance.
- Test and evaluate selected recommendations.

Sponsor: CG-7412

Stakeholder(s): CG-761, CG-933, D8/Mobile, DOT (VOLPE)



Key Milestone / Deliverable Schedule:

Project Start	Jan 13
Initial Site Visits: Overview of Ergonomics Issues	May 13
★ Briefing on Cursory Ergonomics Issues	Oct 13
FY14 Study, Recommendations, and Testing	Jul 14
★ Briefing on FY14 Results	Sep 14
FY15 Study, Recommendations, and Testing	Jul 15
★ Briefing on FY15 Results	Sep 15
Project End	Sep 15

★ Indicates RDC product.

Project #: 9364	Tier: 3	RDC POC: Dr. Anita Rothblum 860-271-2847	CG-926 Domain Lead: Mr. Jaurin Joseph 202- 475-3493
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Expected Benefit:

Improve operational performance/efficiency/mission execution/resiliency

Notes:



Acquisition Support & Analysis (ASA) Branch

Mission Need: Maintain RDC Branch competency and knowledge; provide rapid response; and provide external liaison.

Project Objectives:

- Maintain and enhance Branch competencies (HIS, Acquisition Analysis, Cost Modeling, and Risk Analysis).
- Provide CG-9 a core competency for analysis approaches that provide more efficacy and efficiency for acquisition decision-making.
- Provide CG-095 a core competency to supplement their options for conducting strategic analysis.

Sponsor: CG-926

Stakeholder(s): CG-095

Key Milestone / Deliverable Schedule:

Project Start	12 Dec 07 ✓
Sponsor Performance Gap Meetings.....	As Required
★ Developing a Mission Analysis Report.....	15 Feb 12 ✓
★ Developing a Life Cycle Cost Estimate.....	28 Apr 12 ✓
New Project PEPs/Proposals.....	As Required
Technology Conferences.....	As Required
Project End	TBD

★ Indicates RDC product.

“Post-9/11” Focus:

- Improved CG Mission
Effectiveness
- Additional PWCS Capabilities
 - Additional PWCS Capacities



“Post-2012” Focus

- Improved CG Mission
Efficiency
- Multi-mission Capabilities
 - Reduced Capacities



- Requirements Analysis
- Analysis of Alternatives
- Acquisition Decision Support

- Efficiency Scoping Studies
- Risk/Cost Trade-space
- Divestment Analysis

Project #: 9995	Tier: 3	RDC POC: Mr. Tim Hughes 860-271-2726	CG-926 Domain Lead: LT Derek Storolis 202-475-3492
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Expected Benefit:

Add to general R&D knowledge base

Notes:



Develop Search Sweep Width Data For Search Objects On Ice

Mission Need: Search planning data for search objects on ice.

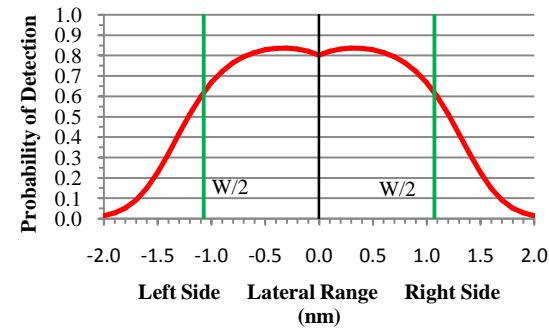
Project Objectives:

- Develop lateral range curves and sweep widths for visual search via MH-65C helicopters and SPC-22 airboats against SAR search objects on ice.
- Use lessons learned during testing to develop recommendations for search employment techniques using current D-9 winter SAR assets.

Sponsor: CG-5RI

Stakeholder(s): LANT-7, D9

**Lateral Range Curve
Visual Search - W = 2.1 nm**



Key Milestone / Deliverable Schedule:

Project Start	7 Nov 11	✓
Phase 1 Go/No-Go	29 Dec 11	✓
Phase 1 Testing	1 Mar 12	✓
★ Interim Brief: Lessons Learned and Preliminary Test Planning Guidance for Searches on Ice	31 May 12	✓
Decision Point for Phase 2 Testing	29 Jun 12	✓
Phase 2 Testing	Feb 13	
★ Final Report: Preliminary Search Planning Guide for Search Objects on Ice	Sep 13	
Project End	Sep 13	

★ Indicates RDC product.

Project #: 1005	Tier: 3	RDC POC: Mr. Don Decker 860- 271-2701	CG-926 Domain Lead: CDR Albert Antaran 202- 475-3049
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Expected Benefit:

Improved Doctrine/CONOPs/TTPs

Notes:



SAR Distress Signaling Methods and Alternatives

Mission Need: Improved distress signal device.

Project Objectives:

- Determine suitability of potential alternatives to pyrotechnic visual distress signals.
- Document and validate key distress signal characteristics.
- Update carriage requirements to eliminate ineffective devices.

Sponsor: CG-5RI

Stakeholder(s): CG-BSX, CG-ENG



Key Milestone / Deliverable Schedule:

Project Start	1 Nov 10 ✓
Functional Requirements Workshop.....	30 Feb 11 ✓
Visual Comparisons and Use Testing.....	9 Nov 11 ✓
★ Suitability of Potential Alternatives to Pyrotechnic Distress Signals.....	31 Jan 12 ✓
Laboratory Testing	Nov 13
Field Testing.....	May 14
★ Review of Distress Signal Characteristics, and Potential Modifications to Carriage Requirements.....	Jun 14
Project End	Sep 14

★ Indicates RDC product.

Project #: 1101	Tier: 3	RDC POC: Mr. Vinnie Reubelt 860-271-2661	CG-926 Domain Lead: LCDR Anthony Erickson 202-475-3748
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Expected Benefit:

Influence international standards

Notes:



Automated Target Detection for CG FMV Sensors

Mission Need: Automatic target detection aids to support mission execution and EO/IR sensor capabilities.

Project Objectives:

- Baseline any current CG full motion video (FMV) automatic target detection capabilities.
- Conduct market research on available technologies and software algorithms to exploit automatic target detection from FMV.
- Evaluate potential costs and benefits of automated detection systems.
- Recommend automated FMV target detection technologies for CG demonstration and evaluation.

Sponsor: CG-761

Stakeholder(s): CG-926, CG-711



Key Milestone / Deliverable Schedule:

Project Start	19 Apr 12 ✓
CG Baseline Automated Target Detection.....	10 Oct 12 ✓
Release and Analyze Request For Information.....	Jan 13
★ Automated Target Detection for Full Motion Video Interim Report.....	May 13
Apply Auto-Detect Technology to FMV Data.....	Sep 13
★ Computer-based Evaluation of FMV Auto-Detect.....	Jan 14
Project End	Feb 14

★ Indicates RDC product.

Project #: 7607	Tier: 3	RDC POC: Dr. Andrew Niccolai 860- 271-2670	CG-926 Domain Lead: CDR Albert Antaran 202- 475-3049
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Expected Benefit:

Improve operational performance/efficiency/mission execution/resiliency

Notes:



Vertical Take-Off and Landing (VTOL) Unmanned Aerial System (VUAS) Flight Demonstration Off the National Security Cutter (NSC)

Mission Need: Expand CG research and operational experience w/ UAS capabilities in a maritime environment.

Project Objectives:

- Procure all major Fire Scout system subcomponents except air vehicle.
- Execute flight deck certification, engineering and airspace processes involved in order to operate Vertical Unmanned Aerial System (VUAS) off the National Security Cutter (NSC). Install and test Fire Scout system from an NSC.
- Conduct analysis and report on effectiveness of VUAS to contribute to NSC mission performance.

Sponsor: CG-931

Stakeholder(s): CG-926, CG-711, CG-751, CG-932, RNWC



Key Milestone / Deliverable Schedule:

Project Start	1 Oct 09	✓
Reinitiate Project	8 Feb 12	✓
Select Candidate NSC for Test.....	30 Nov 12	✓
GCS System Acceptance Test.....	Jan 14	
NSC Installation and Test.....	May 14	
★ Final Rpt “Evaluation of Fire Scout for Use on NSC”.....	Aug 14	
Project End.....	Sep 14	

★ Indicates RDC product.

Project #: 7802	Tier: 1	RDC POC: Mr. Tim Ledbetter 860- 271-2609	CG-926 Domain Lead: CDR Albert Antaran 202- 475-3049
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Expected Benefit:

Inform follow-on acquisition/enterprise deployment

Notes:

Includes funding from FY10 UAS Earmark.
Includes funding from FY12 UAS Earmark.



Shipboard Small UAS Capability Demonstration

Mission Need: Identify the risks, benefits, and limitations of operating small UAS off the National Security Cutter (NSC).

Project Objectives:

- Prepare for a sUAS installation on an NSC to include ECP, Interim Flight Clearance, Topside Analysis and other prerequisites.
- Execute two-phased Small Unmanned Aircraft System (sUAS) demonstrations from National Security Cutter (NSC).
- Analyze and report on potential sUAS contributions to NSC mission capabilities and impact on ship and crew operations.

Sponsor: CG-711

Stakeholder(s): CG-926, CG-931, CG-751, CG-932, RNWC



Key Milestone / Deliverable Schedule:

Project Start	27 Sep 11 ✓
Configuration Control Board Approval.....	14 Apr 12 ✓
Shore Side Test.....	6 May 12 ✓
Phase I Demonstration off USCGC Stratton.....	18 Aug 12 ✓
★ sUAS Interim Report and Recommendations...14 Nov 12 ✓	
Phase 2A Demonstration off USCGC Berthof.....	Apr 13
Phase 2B Demonstration off USCGC Berthof	Nov 13
★ sUAS Final Report and Recommendations.....Apr 14	
Project End	May 14

★ Indicates RDC product.

Project #: 7804	Tier: 1	RDC POC: Dr. Andrew Niccolai 860- 271-2670	CG-926 Domain Lead: CDR Albert Antaran 202- 475-3049
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Expected Benefit:

Inform follow-on acquisition/enterprise deployment

Notes:

Includes funding from FY10 UAS Earmark.



Aviation Branch Support

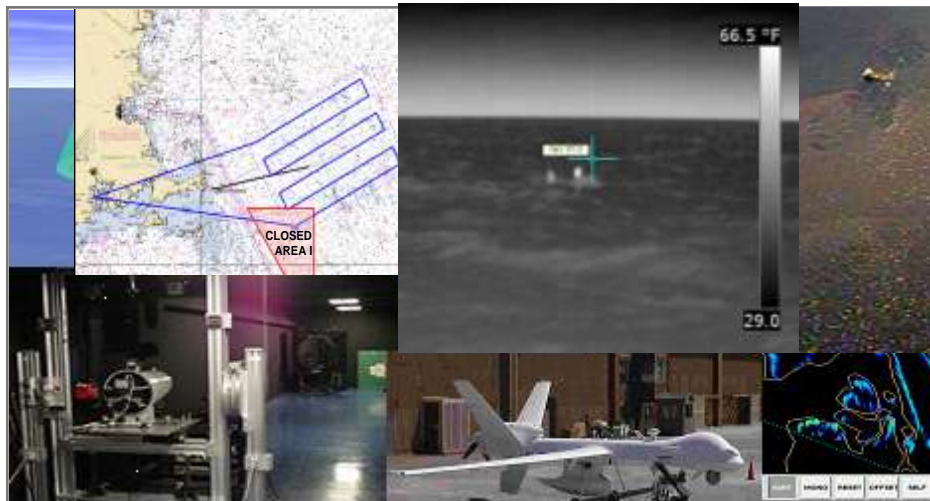
Mission Need: Maintain RDC Branch competency and knowledge; provide rapid response; and provide external liaison.

Project Objectives:

- Maintain/develop Branch technical competencies and infrastructure in CG-relevant aviation/T&E technology.
- Support Aviation SIT.
- Report on development & test of Thermal Oscar target.
- Report on analysis of USCG airborne spill surveillance.
- Seek opportunities to support CG/DHS aviation programs that close capability gaps and improve mission performance.

Sponsor: CG-926

Stakeholder(s):



Key Milestone / Deliverable Schedule:

Project Start	3 Dec 07 ✓
★ RDC Product	TBD
Potential Project Field Visits.....	As Required
New Project PEPs & Proposals.....	As Required
Technology Demos.....	As Required
Technology Conferences.....	As Required
Project End	TBD

★ Indicates RDC product.

Project #: 9992	Tier: 3	RDC POC: Mr. William Posage 860- 271-2688	CG-926 Domain Lead: CDR Albert Antaran 202- 475-3049
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Expected Benefit:

Add to general R&D knowledge base

Notes:



Coastal Surveillance System (CSS)

Mission Need: IOC Segment I (WATCHKEEPER) integration of sensor information.

Project Objectives:

- Integrate the SIMON/OMS Sensor Management System (SMS) at selected USCG, IOC Sectors (LA/LB, ST PETE, SD....).
- Integrate sensor into SIMON/OMS and test continuity of data collection into WATCHKEEPER from air & surface assets.
- Conduct data flow assessments at test sites to ensure CG & DHS spectrum of contacts/targets meet IOC – ORD req.

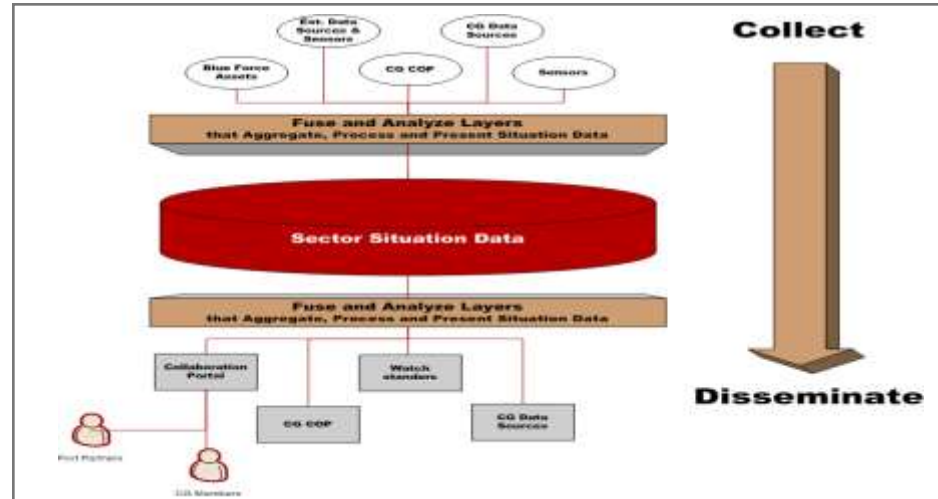
Sponsor: CG-9333

Stakeholder(s): CG-741, CG-761, DHS S&T (BMD)

Key Milestone / Deliverable Schedule:

Project Start	TBD
Stand-up & Participate in IPT.....	TBD+2 Mos.
Complete Demo of SIMON/OMS at Test Bed...	TBD+5 Mos.
★ Interim Report on SIMON/OMS Testing....	TBD+7 Mos.
Complete SIMON/OMS Integration to WATCHKEEPER (test bed only).....	TBD+9 Mos.
Complete Data Assessments on Sensor-SMS WATCHKEEPER.....	TBD+12 Mos.
★ Final Report on Segment II Efforts of CSS....	TBD+12 Mos.
★ Develop & Deliver ROADMAP for Transition...	TBD+22 Mos.
Project End.....	TBD+23 Mos.

★ Indicates RDC product.



Project #: 2013.036	Tier: 1	RDC POC: LTJG Kevin Sorrell 860-271-2727	CG-926 Domain Lead: CDR Tung Ly 202-475-3011
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Expected Benefit:

Inform follow-on acquisition/enterprise deployment

Notes:



Boat Crew Communication Capabilities Study

Mission Need: An effective and reliable internal-external communications capability for Small Boat crews.

Project Objectives:

- Determine performance needs and gaps in CG internal-external Integrated Communications Systems (ICS) across boat classes.
- Resolve BCCS Problems Documented in DHS IG Report
- Optional: Conduct field test and assessment of representative standardized ICS.

Sponsor: CG-7311

Stakeholder(s): DOG, CAIT-SC



Key Milestone / Deliverable Schedule:

Project Start	27 May 10 ✓
★ BCCS Capability Gaps and System Test Recommendations Briefing	16 Jun 11 ✓
IG Resolution Testing Expanded from Sta NLON to MSST Kings Bay	30 Apr 12 ✓
★ BCCS Briefing on IG Resolution	14 Sep 12 ✓
Project End	12 Oct 12 ✓

★ Indicates RDC product.

Project #: 5203	Tier: 3	RDC POC: Ms. Judi Connelly 860-271-2643	CG-926 Domain Lead: CDR Tung Ly 202-475-3011
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Expected Benefit:

Direct Product Line/Core Technology Support (Tech refresh, DMS, etc)

Notes:



Non-Compliant Vessel (NCV) Video Recorder

Mission Need: CG OTH platforms ability to capture video imagery of operations or surroundings.

Project Objectives:

- Evaluate a range of technical capabilities a video system can provide in support of OTH operations and missions.
- Support and validate operational requirements and Key Performance Parameters (KPPs).
- Collect quantitative data points that can be used to determine the range of technical performance for various systems.

Sponsor: CG-761

Stakeholder(s): LANT-7, CG-731



Key Milestone / Deliverable Schedule:

Project Start	20 Oct 11 ✓
★ Non-Compliant Vessel Video Recorder: Technology Options Brief.....	20 Jun 12 ✓
Initial Evaluation.....	16 Dec 12 ✓
Technology Transition Agreement (TTA) Approval...	Mar 13
Extended Evaluation.....	Apr 13
★ Non-Compliant Vessel Video Recorder: Final Report.....	Jul 13
Project End	Aug 13

★ Indicates RDC product.

Project #: 5704	Tier: 3	RDC POC: LTJG Kevin Sorrell 860-271-2727	CG-926 Domain Lead: CDR Tung Ly 202-475-3011
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Expected Benefit:

Improve operational performance/efficiency/mission execution/resiliency

Notes:



Non-Compliant Vessel (NCV) Contraband Marker

Mission Need: A method to effectively tag and track jettisoned contraband for later recovery.

Project Objectives:

- Evaluate a range contraband marker systems to support OTH LE activities.
- Collect quantitative data points that can be used to determine the range of technical performance for various systems.
- Generate, support, and validate operational requirements and Key Performance Parameters (KPPs) for a potential future acquisition.

Sponsor: CG-731

Stakeholder(s): LANT-7, CG-761



Key Milestone / Deliverable Schedule:

Project Start	20 Oct 11 ✓
★ Non-Compliant Vessel Contraband Marker:	
Technology Selection Briefing	Mar 13
Initial Evaluation.....	Jun 13
Extended Evaluation.....	Nov 13
Technology Transition Agreement (TTA)	
Approval.....	Dec 13
★ Non-Compliant Vessel Contraband Marker:	
Final Report	Feb 14
Project End	Apr 14

★ Indicates RDC product.

Project #: 5707	Tier: 3	RDC POC: LTJG Kevin Sorrell 860-271-2727	CG-926 Domain Lead: CDR Tung Ly 202-475-3011
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Expected Benefit:

Improve operational performance/efficiency/mission execution/resiliency

Notes:



Alternative Precise Network Timing

Mission Need: A precise timing alternative in the event GPS becomes unavailable.

Project Objectives:

- Research, evaluate, and document at least one promising wireless technical approach for passing precise time using LORAN and dGPS frequencies.

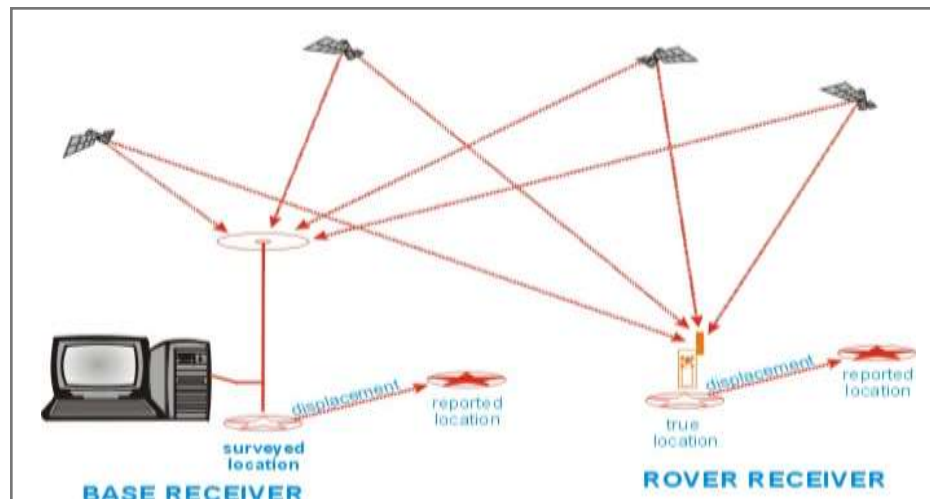
Sponsor: CG-5PW

Stakeholder(s): CG-6

Key Milestone / Deliverable Schedule:

Project Start	5 Dec 11	✓
Statement of Obligation for CRADA	23 Dec 11	✓
CRADA Signed by Both RDC and UrsaNav	11 Jan 12	✓
Testing at LORAN Station Wildwood, NJ	Apr 13	
Testing at LORAN Station Las Cruces, NM	Jul 13	
★ Results of Alternative to GPS Timing Tech.....	Sep 13	
Briefing of Alternative to GPS Timing Tech to HQ ...	Sep 13	
Project End	Sep 13	

★ Indicates RDC product.



Project #: 6206	Tier: 3	RDC POC: LT Helen Millward 860-271-2815	CG-926 Domain Lead: CDR Tung Ly 202-475-3011
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Expected Benefit:

Add to general R&D knowledge base

Notes:

Project includes use of a CRADA.



Arctic HF Communications Technology Assessments

Mission Need: Increased communications capability in the Arctic to improve performance.

Project Objectives:

- Survey abilities of existing USCG and non-USCG maritime Arctic communications technologies.
- Simulate the communications, identify gaps and provide guidance to Sponsor on potential future HF systems , locations sites and associated cost for each recommended component.

Sponsor: CG-761

Stakeholder(s): DHS S&T (BMD)



Key Milestone / Deliverable Schedule:

Project Start	1 Oct 12 ✓
★ ARCTIC Coverage and Average Expected Coverage.....	Jun 13
★ As-Is vs. Alternative System Performance.....	Nov 13
★ Arctic Communications Technology Recommendations and Path Forward.....	Feb 14
Project End	Mar 14

★ Indicates RDC product.

Project #: 6208	Tier: 3	RDC POC: Ms. Elizabeth Weaver 860-271-2732	CG-926 Domain Lead: CDR Tung Ly 202-475-3011
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Expected Benefit:

Add to general R&D knowledge base

Notes:



Mobile Asset Tracking and Reporting Device

Mission Need: A flexible ad hoc interoperable communication/information system to enhance the Coast Guard's ability to respond to Incidents of National Significance.

Project Objectives:

- Prototype a flexible interoperable communication/information system, processes, and procedures to enhance the USCG's ability to transfer information that will assist personnel responding to an IONS (e.g., oil spill).
- The system, processes, and procedures should make use of the equipment the responders are expected to bring to the incident such as smartphones, tablet computers, and laptops.
- Utilize CRADA where applicable and IAA for Lincoln Labs.

Sponsor: CG-761

Stakeholder(s): CG-6, DHS S&T (OIC)



Key Milestone / Deliverable Schedule:

Project Start	19 Aug 11 ✓
CRADA Signed by both RDC and General Dynamics.....	26 Apr 12 ✓
Technology Assessment	Mar 13
★ Technical Assessment Brief for Mobile Asset Tracking and Reporting Device.....	Mar 13
Key Decision Point for Prototype Completion.....	Mar 13
Technology Demonstrations	Jul 14
(Lincoln Labs, General Dynamics, Army, Trident, Other)	
-Build Prototypes	
-Conduct Technical Demonstrations	
★ Mobile Asset Tracking and Reporting Device: IONS System Test Results and Recommendations.....	Oct 14
Project End	Nov 14

★ Indicates RDC product.

Project #: 8105	Tier: 1	RDC POC: Mr. Jon Turban, P.E. 860-271-2834	CG-926 Domain Lead: CDR Tung Ly 202-475-3011
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Expected Benefit:

Improve operational performance/efficiency/mission execution/resiliency

Notes:

Includes funding from FY11 Oil Spill Research Earmark.
Project includes use of a CRADA.



Analysis of Solid State Marine RADAR

Mission Need: Assess the characteristics of newer solid state marine RADAR.

Project Objectives:

- Investigate new advances in marine RADAR, including solid state developments.
- Investigate problems associated with low-power RADARs.

Sponsor: CG-257

Stakeholder(s): CG-64, CAIT-SC

Key Milestone / Deliverable Schedule:

Project Start	2 Nov 11 ✓
Define and Scope of Solid State RADARs for CG..	25 Apr 12 ✓
RFI to Industry.....	15 Jun 12 ✓
Market Research Complete.....	27 Jul 12 ✓
Compare Solid State Radar to CG Systems.....	31 Aug 12 ✓
★ (U) Comparative Analysis on CG Capability against Solid State Marine RADAR.....	28 Nov 12 ✓
Project End	19 Dec 12 ✓

★ Indicates RDC product.



Project #: 8106	Tier: 3	RDC POC: LT Jeff Young 860-271-2679	CG-926 Domain Lead: CDR Tung Ly 202-475-3011
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Expected Benefit:

Direct Product Line/Core Technology Support (Tech refresh, DMS, etc)

Notes:



Assessment of Migrating CG C2 Infrastructure to the Common User Interface (CUI) and the Ozone Widget Framework

Mission Need: Analyze the constraints and impacts associated with completing an IT enterprise migration to DoD and other government agency's evolving data exchange services.

Project Objectives:

- Perform a consolidated review of the multiple C2 applications, both HIGH and LOW sides used across the CG (shore, air, sea).
- Develop a ROADMAP to support HIGH & LOW side C2 applications.
- Conduct a Ltd Obj Exp. on OWF and secure IT dependencies for HIGH and LOW sides C2 applications.

Sponsor: CG-761

Stakeholder(s): CG-257, CAIT-SC

Key Milestone / Deliverable Schedule:

Project Start	TBD
★ CG C2 As-Is Applications vs. GCCS-J/I3 Migration to Desktop Widget.....	TBD+3 Mos.
KDP C2 Applications Demo go/no-go.....	TBD+3 Mos.
★ CG C2 ROADMAP for OWF Migration ...	TBD+8 Mos.
★ CG Cross-Decking DoDAF and IT Security Interoperability	TBD+15 Mos.
Project End	TBD+19 Mos.

★ Indicates RDC product.



Project #: 8108	Tier: 3	RDC POC: Ms. Val Arris 860-271-2849	CG-926 Domain Lead: CDR Tung Ly 202-475-3011
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Expected Benefit:
Direct Product Line/Core Technology Support (Tech refresh, DMS, etc)

Notes:

Advanced Communications Intelligence (COMINT) Technology

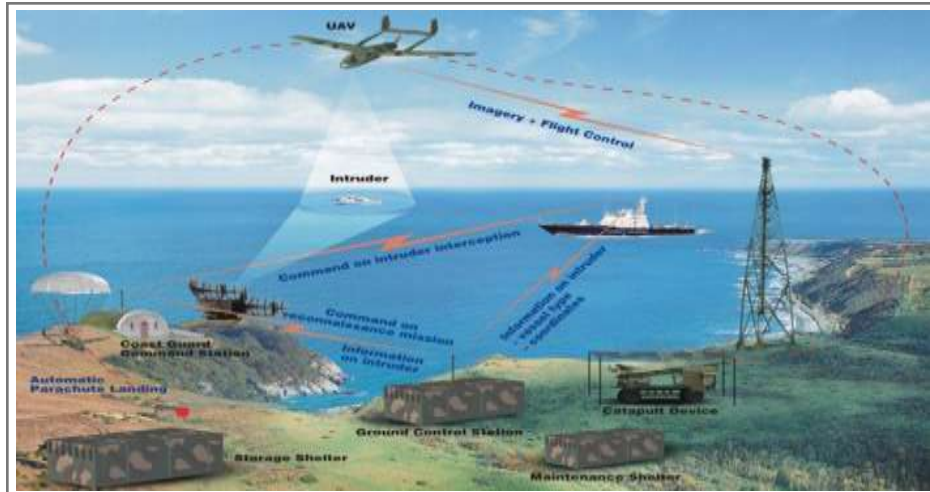
Mission Need: Process, exploit, and disseminate (PED) signals of interest as part of shipboard collections platforms to support advanced surveillance, identification, classification, and interception.

Project Objectives:

- Evaluate COMINT capabilities on CG vessels and compare performance against mission needs and requirements.
- Identify candidate systems that have the potential to meet requirements.
- Conduct demonstrations to validate candidate technical solutions for CG requirements.

Sponsor: CG-257

Stakeholder(s): CGCG, CG-761, CAIT-SC



Key Milestone / Deliverable Schedule:

Project Start	8 Nov 11 ✓
Technology Research.....	Mar 13
Tech Review & Gap Analysis.....	May 13
Identify Solutions	May 13
Conduct Demonstrations	Jun 13
★ Advanced CG COMINT Capabilities: Next Step Shipboard Capabilities.....	Oct 13
Project End	Dec 13

Project #: 8305	Tier: 3	RDC POC: Mr. Jay Spalding 860-271-2687	CG-926 Domain Lead: CDR Tung Ly 202-475-3011
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Expected Benefit:
Direct Product Line/Core Technology Support (Tech refresh, DMS, etc)

Notes:

★ Indicates RDC product.

C4ISR Branch Support

Mission Need: Maintenance of RDC Branch competency and knowledge; provide rapid response; and provide external liaison.

Project Objectives:

- Maintain RDC competency in understanding present and future CG Mission Performance Gaps relating to Command, Control, Computers, Communications, Intelligence, Surveillance and Reconnaissance.
- Maintain RDC competency in technologies that currently or potentially could be used to eliminate or reduce Mission Performance Gaps across multiple CG Offices/Missions.
- Support the development of proposals for the TST & TENCAP Programs.

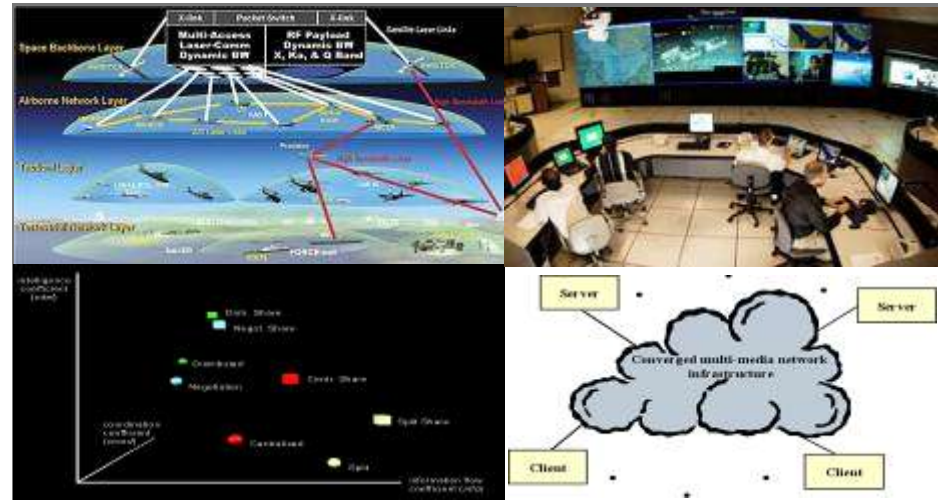
Sponsor: CG-926

Stakeholder(s):

Key Milestone / Deliverable Schedule:

Project Start.....	3 Dec 07 ✓
Sponsor Performance Gap Meetings.....	As Required
Potential Project Field Visits.....	As Required
New Project Execution Plans (PEP's).....	As Required
New Project Proposals.....	As Required
★ Technology Demos – Mobile Apps.....	May 13
Technology Conferences.....	As Required
Project End.....	TBD

★ Indicates RDC product.



Project #: 9991	Tier: 3	RDC POC: Dr. Jack McCready 860-271-2738	CG-926 Domain Lead: CDR Tung Ly 202-475-3011
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Expected Benefit:
Add to general R&D knowledge base

Notes:

Risk Assessment Methodology to aid USATON Design Changes

Mission Need: Updates to the design standards of the U.S. Maritime Aids to Navigation System (USATONS) based on emergent and current e-Navigation technology.

Project Objectives:

- Determine current and proposed carriage requirements for e-Navigation components.
- Determine to what degree mariners rely on visual ATON.
- Develop comparative risk model to support changes to USATONS design standards which incorporate e-Navigation components.
- Determine impacts to user groups affected by USATONS design standard changes.

Sponsor: CG-5PW

Stakeholder(s): CG-095



Key Milestone / Deliverable Schedule:

Project Start.....	2 May 11	✓
Selection of Port Scenarios Interim Report.....	25 Nov 11	✓
Existing ATON Performance Interim Report.....	3 Feb 12	✓
Modeling/Risk Interim Report.....	8 Jun 12	✓
★ Final Report of Comparative Risk Model to Support Changes to Design Standards of USATONS.....	12 Nov 12	✓
Project End.....	Jan 13	

★ Indicates RDC product.

Project #: 2701	Tier: 3	RDC POC: Mr. Scott Fields 860-271-2805	CG-926 Domain Lead: LCDR Anthony Erickson 202-475-3748
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Expected Benefit:

Improve operational performance/efficiency/mission execution/resiliency

Notes:



Ballast Water Treatment (BWT)

Mission Need: Verify that ballast water treatment systems meet discharge standards.

Project Objectives:

- Develop a test protocol for shore-based tests of BWT systems.
- Conduct inter-comparison of shore-based test facilities.
- Develop automated methods to standardize analysis of samples with very low concentrations of organisms.

Sponsor: CG-5PS

Stakeholder(s): GLRI, DOT (VOLPE)



Key Milestone / Deliverable Schedule:

Project Start.....	30 May 08	✓
Begin Test Facility Equipment Testing.....	10 Jan 11	✓
Conclude Test Facility Equipment Testing.....	8 Aug 11	✓
★ Revised Protocol for Zooplankton Automated Analysis.....	14 Nov 11	✓
★ Protocol for Automated Protist Analysis.....	8 Dec 11	✓
★ Automated Protist Analysis of Complex Samples: Recent Investigations Using Motion and Thresholding.....	13 Jan 12	✓
★ Intercomparison of U.S. Ballast Water Test Facilities - Final Report.....	29 Nov 12	✓
★ Indep. Assess. of MERC BW Test Facility.....	6 Dec 12	✓
Project End	Mar 13	

★ Indicates RDC product.

Project #: 4101	Tier: 2	RDC POC: Ms. Gail Roderick 860-271-2658	CG-926 Domain Lead: Mr. Jaurin Joseph 202- 475-3493
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Expected Benefit:

Influence international standards

Notes:



Recovery of Heavy Oil

Mission Need: Capability to detect and recover heavy oils, which do not remain on surface of water.

Project Objectives:

- Document the present status of capabilities and techniques for the detection and recovery of heavy oils.
- Develop and evaluate the most promising capabilities and techniques for detecting heavy oil on the bottom.
- Develop and evaluate the most promising capabilities and techniques for recovering heavy oil on the bottom.
- Field demonstrations of two prototypes.

Sponsor: CG-5RI

Stakeholder(s): BSEE, ICCOPR



Key Milestone / Deliverable Schedule:

Project Start.....	5 Feb 07 ✓
<u>Phase 1: Detection</u>	
Heavy Oil Detection Proofs of Concept	
Briefing.....	22 May 08 ✓
Heavy Oil Detection Prototypes Final Report.. 11 Jun 09 ✓	
<u>Phase 2 : Recovery</u>	
Heavy Oil Recovery Design Briefing..... 11 Jan 11 ✓	
Recovery Prototype Tests.....	15 Nov 11 ✓
Heavy Oil Recovery Ohmsett Test Report..... 8 Jun 12 ✓	
Prototype Field Demonstration.....	24 Oct 12 ✓
Development of Bottom Oil Recovery Systems –	
Final Project Report.....	Jul 13
Project End.....	Aug 13

★ Indicates RDC product.

Project #: 4153	Tier: 2	RDC POC: Mr. Kurt Hansen 860-271-2865	CG-926 Domain Lead: Mr. Shannon Jenkins 202-475-3490
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Expected Benefit:

Improve operational performance/efficiency/mission execution/resiliency

Notes:

Includes funding from FY11 Oil Spill Research Earmark. Project includes use of a BAA.



Detection and Collection of Oil within the Water Column

Mission Need: Accurately detecting and mitigating subsurface oil within the water column up to 10,000 feet.

Project Objectives:

- To develop new spill response technologies that detect and mitigate oil within the water column down to 10,000 ft.
 - Operate in all environmental conditions.
 - Locate and mark subsurface oil for possible removal.
 - High resolution for detecting small droplets of oil.
- Technology to be capable of operating off vessels of opportunity.
- Addresses near shore and rivers.

Sponsor: CG-5RI

Stakeholder(s): BSEE, ICCOPR



Key Milestone / Deliverable Schedule:

Project Start	4 Aug 11 ✓
Start Design Phase	2 Apr 12 ✓
★ Detection of Oil in Water Column: Sensor Design.....	Mar 13
★ Detection of Oil in Water Column, Final Report: Detection Prototype Tests.....	Apr 14
★ Detection of Oil in Water Column, Presentation: Mitigation Design.....	Oct 15
★ Detection of Oil in Water Column, Final Report: Prototype Mitigation Tests.....	Nov 16
Project End	Jan 17

★ Indicates RDC product.

Project #: 4702	Tier: 3	RDC POC: Mr. Alexander Balsley 860-271-2854	CG-926 Domain Lead: Mr. Shannon Jenkins 202-475-3490
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Expected Benefit:

Improve operational performance/efficiency/mission execution/resiliency

Notes:

Includes funding from FY11 Oil Spill Research Earmark. Project includes use of a BAA.

Environmental & Waterways Branch Support

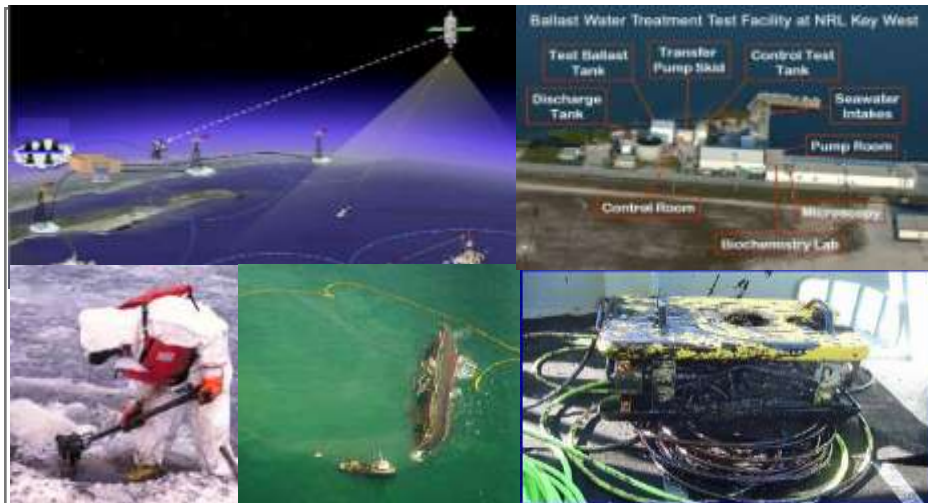
Mission Need: Maintain RDC Branch competency and knowledge; provide rapid response; and provide external liaison.

Project Objectives:

- Maintain RDC competency and technical knowledge in understanding present and future CG Safety and Response Mission Performance Gaps.
- Maintain RDC competency in technologies that currently or potentially could be used to eliminate or reduce CG Safety and Response Mission Performance Gaps.

Sponsor: CG-926

Stakeholder(s):



Key Milestone / Deliverable Schedule:

Project Start	3 Dec 07 ✓
CG Nav 1 Testing.....	11 Dec 12 ✓
Sponsor Performance Gap Meetings.....	As Required
Potential Project Field Visits.....	As Required
New Project Execution Plans (PEPs).....	As Required
New Project Proposals.....	As Required
Technology Demos.....	As Required
Technology Conferences.....	As Required
Project End.....	TBD

★ Indicates RDC product.

Project #: 9993	Tier: 3	RDC POC: Mr. James Fletcher 860-271-2659	CG-926 Domain Lead: Mr. Shannon Jenkins 202-475-3490
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Expected Benefit:

Add to general R&D knowledge base

Notes:



Panga Search Planning Tools/Position Calculation Analysis

Mission Need: LE search planning tools for finding pangas or other vessels of interest that are trying to avoid detection.

Project Objectives:

- Characterize panga intel & threat vectors, analyze & model mission trade-offs, conceive an LE search planning system.
- Propose preliminary CONOPS & threat reduction estimate.
- Create initial justification for system development.
- Seek program & stakeholder approval to enter Systems Development Life Cycle (SDLC) - Conceptual Planning Phase for formal Business Case Analysis (BCA).

Sponsor: CG-761

Stakeholder(s): Sector San Diego, DHS S&T (BMD)



Key Milestone / Deliverable Schedule:

Project Start	TBD
Develop Conceptual LE System	TBD+7 Mos.
★ Conceptual LE Search Planning System	TBD+9 Mos.
Present Concept to Programs & Stakeholders..	TBD+10 Mos.
Seek Program Memo for System Justification	TBD+10 Mos.
Ramp-up Follow-on RDTE FY14 SDLC Project	TBD+11 Mos.
Project End	TBD+11 Mos.
FY14 SDLC Conceptual Planning Project Start....	TBD+12 Mos.

★ Indicates RDC product.

Project #: 2013.005	Tier: 3	RDC POC: Mr. Warren Heerlein 860-271-2625	CG-926 Domain Lead: Mr. Shannon Jenkins 202-475-3490
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Expected Benefit:

Improve operational performance/efficiency/mission execution/resiliency

Notes:



Optimizing RADAR & Electro-Optical Sensors

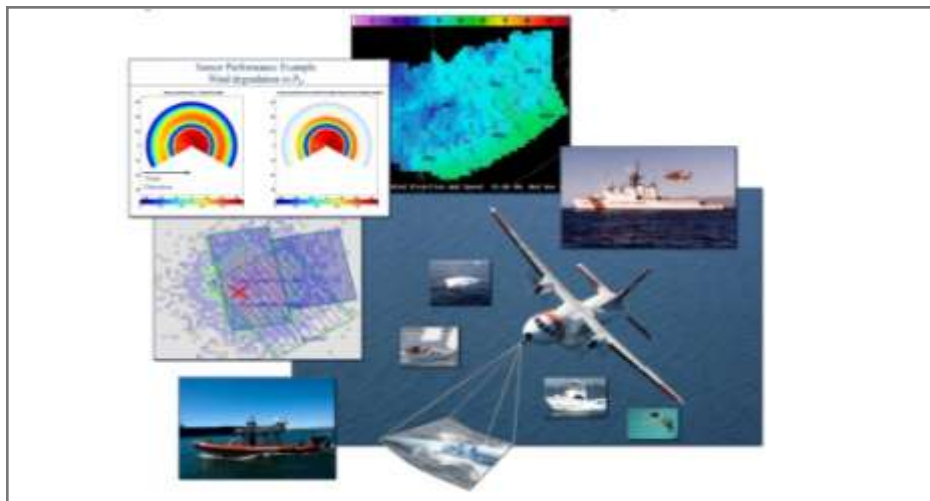
Mission Need: Provide sensor performance decision support to the operational and acquisition communities from Sensor Performance Modeling.

Project Objectives:

- Assess the design and capabilities of current USCG sensor performance applications and prediction tools in order to enhance existing or develop new digital sensor, target, and environment models.
- Identify a scalable and maintainable path forward that allows for cost effective improvements for future growth.

Sponsor: CG-926

Stakeholder(s): M&S Council, RNWC



Key Milestone / Deliverable Schedule:

Project Start.....	10 Mar 09 ✓
★ Summary Report: Sensor M&S - Phase I.....	11 May 10 ✓
★ Briefing – Validation of RADAR/EO/IR testing.....	23 Mar 12 ✓
NATO Partnered Validation Test.....	14 Jun 12 ✓
★ Sensor Model Accreditation Summary Report.....	May 13
Project End.....	Jun 13

★ Indicates RDC product.

Project #: 7507	Tier: 1	RDC POC: Ms. Judith Connelly 860-271-2643	CG-926 Domain Lead: LT Derek Storolis 202-475-3492
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Expected Benefit:

Improved Doctrine/CONOPs/TTPs

Notes:

Support Development of Coastal Operations Analytical Suite of Tools (COAST)

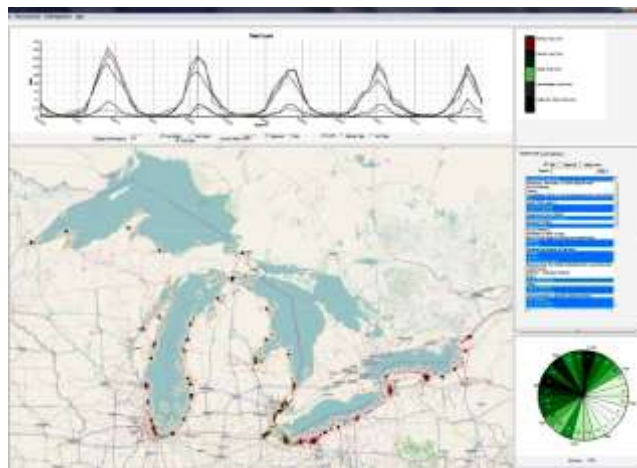
Mission Need: Accredited M&S tools that support operational and programmatic decision making within the Coastal Zone, Great Lakes or Inland Waters.

Project Objectives:

- Complete Search and Rescue Visualization Analytics (SARVA) and Boat Allocation Model (BAM) Verification, Validation, and Accreditation (VV&A).
- Support development of initial prioritized list of needed tools.
- Support development of a Performance Specification Document for each tool module.
- Conduct Verification and Validation for each module.

Sponsor: CG-771

Stakeholder(s): DHS S&T (OUP), M&S Council, CG-7



Key Milestone / Deliverable Schedule:

Project Start	1 Oct 12	✓
★ SARVA Verification and Validation Report.....	Feb 13	
★ BAM Verification and Validation Report.....	Feb 13	
★ Module Performance Spec Document(s).....	Jul 13	
★ Module VV&A.....	Apr 15	
Project End	May 15	

★ Indicates RDC product.

Project #: 7520	Tier: 2	RDC POC: Mr. Mike Lehocky 860-271-2698	CG-926 Domain Lead: LT Derek Storolis 202-475-3492
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Expected Benefit:

Improved Doctrine/CONOPs/TTPs

Notes:



Systems Analysis and Optimization of CGMOES

Mission Need: A modern, stable campaign analysis tool under government control for routine decision support.

Project Objectives:

- The Coast Guard needs to improve its existing campaign modeling capabilities by modernizing its hardware and software suite, obtaining greater government control/oversight, and providing CG decision makers a stable platform for future (routine) decision analysis support.

Sponsor: CG-771

Stakeholder(s): CG-926, M&S Council



Key Milestone / Deliverable Schedule:

Project Start	23 Jul 12	✓
Complete Phase I	15 Aug 12	✓
KDP to Convert Database from Access to SQL.....	May 13	
★ Verification, Validation, and Accreditation Rpt...	Feb 14	
<u>Achieve IOC</u>	Feb 14	
Transition to RDC-led Team.....	Aug 14	
★ Configuration Management Report.....	Dec 14	
<u>Achieve FOC</u>	Dec 14	
Project End	Jan 15	

★ Indicates RDC product.

Project #: 7927	Tier: 1	RDC POC: Ms. Kathleen Shea Kettel 860-271-2770	CG-926 Domain Lead: LT Derek Storolis 202-475-3492
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Expected Benefit:

Influence Mission Support efficiencies

Notes:

Project will end at IOC unless CG-7 provides FY14 funding for FOC.



Modeling & Simulation Center of Expertise (COE) Branch

Mission Need: Maintain RDC Branch competency and knowledge; provide rapid response; and provide external liaison.

Project Objectives:

- Maintain and enhance Branch competencies (Fleet Mix Strategic Analysis, Tactical Force Package Analysis, Sensor Performance Analysis, Data Repository, Analysis, and Visualization).
- Provide CG-9 a core competency for analysis, modeling and simulation by investigating/developing modeling approaches that provide more efficacy and efficiency for acquisition decision-making.

Sponsor: CG-926

Stakeholder(s): M&S Council

Key Milestone / Deliverable Schedule:

Project Start.....	29 Nov 11 ✓
Sponsor Performance Gap Meetings.....	As Required
Stand-up New M&S COE Space at RDC.....	Apr 13
Import Sector Staffing Model to COE	Sep 13
New Project PEPs/Proposals/Tasks.....	As Required
Accreditation Management.....	As Required
Technology Conferences.....	As Required
Project End	TBD

★ Indicates RDC product.

Analysis Questions → Skilled Analysts/Tools → Analysis Products

Ex. Tools:

- CGMOES
- Arctic Tactical Modeling Environment
- Coast Guard Tactical Modeling Environment
- Human Performance Modeling
- Cost Modeling



Ex. Analysis Products:

- Fleet Mix Analysis (CG-wide, Western Rivers)
- OPC Alternatives Analysis
- HLS Mission Analysis
- DOMICE Mission Analysis
- VUAV/UAS4NSC
- D7 Airship Analysis
- Manned Covert Surveillance Aircraft CONOPs
- C4ISR Alternatives Analysis
- SIGINT Requirements & Capabilities Analysis

Project #: 9997	Tier: 3	RDC POC: CDR Sean Lester 860-271-2880	CG-926 Domain Lead: LT Derek Storolis 202-475-3492
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Expected Benefit:

Add to general R&D knowledge base

Notes:

Short Term Modeling & Simulation Support Efforts (M&S COE Tasks)

Purpose:

Provide Modeling, Simulation or Analysis to focused operational or business questions. Short term efforts are characterized by limited complexity with the need for standard technical and contracting approaches.

FY13 Efforts:

Submission Date	Task	Title	Office Supported	Funding Type
15 Nov 2012	7400008	CGMOES Excursions for NSC 6,7,8 and 210 DAFHP	CG-771	OE
Ongoing	7400009	S&T BMD Short Term Support	DHS S&T	S&T
Ongoing	7400010	VV&A of OREOs	RDC	RDT&E
NEW	7400011	PROTECT Rollout - Western Rivers	LANT-7	OE
NEW	7400012	V&V of PROTECT	LANT-7	RDT&E
NEW	7400013	DHS CGMOES Run Support	CG-771	RDT&E
NEW	7400014	LANT-7 Operations Analysis Support	LANT-7	OE



Operational Testing of Alternative Fuels

Mission Need: The means to meet mandated future greenhouse gas emissions and energy reduction targets.

Project Objectives:

- Identify benefits from CG use of alternative, lower carbon footprint diesel and gasoline replacement fuels in its boats/cutters based on materials, bench and operational tests.
- Cooperative Research and Development Agreements (CRADA) with engine manufacturers Honda, Mercury and Cummins and a MIPR with Oak Ridge National Laboratory will be leveraged to provide technical expertise on alternative fuels.

Sponsor: CG-731

Stakeholder(s): CG-453, SFLC



Key Milestone / Deliverable Schedule:

Project Start	16 Feb 11	✓
CRADA with Honda.....	9 Jun 11	✓
CRADA with Mercury Marine.....	12 Jan 12	✓
CRADA with Cummins.....	2 Feb 12	✓
Conduct Diesel Testing.....	Mar 14	
★ Evaluation of a Diesel Fuel Alternative for Coast Guard Boats.....	Apr 14	
Conduct Gasoline Testing.....	Jul 14	
★ Evaluation of a Gasoline Fuel Alternative for Coast Guard Boats.....	Nov 14	
Project End	Dec 14	

★ Indicates RDC product.

Project #: 4103	Tier: 3	RDC POC: Mr. Mike Coleman 860-271-2708	CG-926 Domain Lead: LCDR Anthony Erickson 202-475-3748
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Expected Benefit:

Direct Product Line/Core Technology Support (Tech refresh, DMS, etc)

Notes:

Project includes use of CRADAs.



Cost Benefit Analysis of CG Using Boat Lifts

Mission Need: Reduce maintenance costs associated with in water storage of Coast Guard Boats.

Project Objectives:

- Determine if boat maintenance and repair costs are reduced sufficiently by storing Coast Guard boats out of the water on a boat lift or similar system to offset the costs of installation, maintenance, operation and training of the storage system.
- Recommend whether the CG should pursue future utilization of this solution including salient characteristics of the recommended style of lift.

Sponsor: CG-926

Stakeholder(s): SFLC

Key Milestone / Deliverable Schedule:

Project Start	8 Dec 11	✓
Investigate Boat Lifts and Costs.....	1 Mar 12	✓
Install Boat Lifts for Evaluation Period.....	5 Sep 12	✓
Execute Technology Transfer Agreement.....	Feb 14	
★ Boat Lift Evaluation Report.....	Mar 14	
Project End.....	Apr 14	

★ Indicates RDC product.



Boat Lifts



Project #: 5103	Tier: 3	RDC POC: LT Brent Fike 860-271-2891	CG-926 Domain Lead: LCDR Anthony Erickson 202-475-3748
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Expected Benefit:

Direct Product Line/Core Technology Support (Tech refresh, DMS, etc)

Notes:



Joint Non-Lethal Weapons Directorate Small Vessel Entanglement

Mission Need: A capability to non-lethally stop a non-compliant vessel.

Project Objectives:

Team with NSWC Dahlgren and Carderock to:

- Continue to conduct tests on outboard and inboard vessels,
- Continue to optimize full-scale net design, and
- Develop and demonstrate launcher capabilities.

Sponsor: CG-721

Stakeholder(s): JNLWD, RNWC

Key Milestone / Deliverable Schedule:

Project Start	12 Dec 07	✓
Net Optimization Tests vs. Inboard Vessels.....	21 Jan 11	✓
Net Optimization Tests vs. Outboard Vessels.....	2 Aug 11	✓
Launcher Modification	2 Oct 11	✓
Small Vessel Surface Entanglement Prototype System Delivered/DT&E.....	26 Mar 12	✓
Small Vessel Surface Entanglement TTA Signed....	Oct 13	
★ Small Vessel Surface Entanglement SNARE Operational Suitability Assessment.....	Dec 13	
Project End	Jan 14	

★ Indicates RDC product.



Project #: 56411	Tier: 3	RDC POC: Ms. D. J. Hastings 860-271-2798	CG-926 Domain Lead: LCDR Anthony Erickson 202-475-3748
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Expected Benefit:
Inform follow-on acquisition/enterprise deployment

Notes:



Arctic Craft Investigation

Mission Need: Boat capability to support mission operations in the Arctic.

Project Objectives:

- Conduct technical and market research on craft that could provide the CG with Arctic capability.
- Conduct a demonstration of Arctic craft to evaluate their effectiveness to execute CG missions on the North Slope of Alaska.
- Identify and test technologies that could be implemented to improve a craft's Arctic capabilities.

Sponsor: CG-731

Stakeholder(s): D17, SFLC

Key Milestone / Deliverable Schedule:

Project Start	1 Oct 10 ✓
★ Arctic Craft Investigation Report	20 Aug 11 ✓
★ Demonstration in Arctic	8 Nov 12 ✓
★ Improving Craft Capabilities for Arctic Operations	Sep 13
Project End	Sep 13

★ Indicates RDC product.



Project #: 6204	Tier: 3	RDC POC: Mr. Jason Story 860-271-2833	CG-926 Domain Lead: LCDR Anthony Erickson 202-475-3748
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Expected Benefit:

Inform follow-on acquisition/enterprise deployment

Notes:

Project includes use of a BAA.



Arctic Shield 2012 Capabilities Documentation

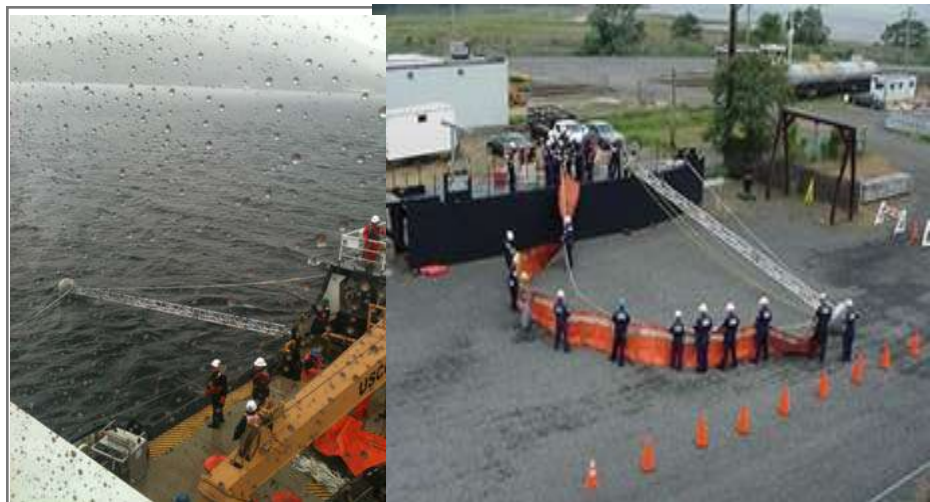
Mission Need: A scientific analysis (R&D) on the affects of the Arctic environment on the performance of CG Programs of Record capabilities.

Project Objectives:

- Establish RDC as the CG go to organization for R&D efforts in the Arctic.
- Document and analyze the SORS deployment under Arctic Shield 2012 and make recommendations for planning necessary R&D to support Arctic oil spill capability.
- Obtain information on authorized communications demonstration activities to support planning future R&D efforts.

Sponsor: CG-5RI

Stakeholder(s): CG-761, CG-926, D17



Key Milestone / Deliverable Schedule:

Project Start	4 Apr 12 ✓
SORS Deployment Exercise.....	3 Aug 12 ✓
Arctic Shield Deployment ends.....	31 Oct 12 ✓
★ SORS Deployment Report Delivered.....	26 Dec 12 ✓
★ Comms Report Delivered.....	May 13
Project End	June 13

Project #: 6207	Tier: 2	RDC POC: Mr. Scot Tripp 860-271-2680	CG-926 Domain Lead: Mr. Shannon Jenkins 202-475-3490
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Expected Benefit:
Add to general R&D knowledge base

Notes:

★ Indicates RDC product.

Arctic Operations Support 2013

Mission Need: A scientific analysis (R&D) on the effects of the Arctic environment on CG mission execution.

Project Objectives:

- Establish clear RDT&E objectives for supporting CG missions in the Arctic.
- Document and analyze activities conducted during Arctic Shield 2013 and make recommendations for improving CG capabilities and mission effectiveness.

Sponsor: CG-5RI

Stakeholder(s): CG-761, CG-926, D-17, DHS S&T (OUP)



Key Milestone / Deliverable Schedule:

Project Start	1 Nov 12 ✓
Determine Nature of Support.....	Jan 12
Approved Plan.....	Feb 13
Arctic Support	Nov 13
★ Documentation of 2013 Arctic R&D Support.....	Feb 14
Project End	Mar 14

Project #: 6209	Tier: 3	RDC POC: Mr. Scot Tripp 860-271-2680	CG-926 Domain Lead: Ms. Mary Kate Watts 202-475-3724
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Expected Benefit:

Add to general R&D knowledge base

Notes:

★ Indicates RDC product.



Anti-Icing Technologies Investigation

Mission Need: Reduce ice accumulation impact on Coast Guard vessel missions and shore communication effectiveness in cold weather and Arctic operations.

Project Objectives:

- Establish current Coast Guard anti-icing capabilities.
- Review requirements for anti-icing.
- Anti-icing capabilities market research.
- Develop roadmap for testing and evaluation of promising anti-icing coatings.

Sponsor: CG-751

Stakeholder(s): CG-731, CG-WWM, CG-6



Key Milestone / Deliverable Schedule:

Project Start	14 Nov 11 ✓
Market Research Complete	Feb 13
★ Vessel Anti-icing Roadmap.....	May 13
Project End	June 13

Project #: 6507	Tier: 3	RDC POC: Mr. Scot Tripp 860-271-2680	CG-926 Domain Lead: LCDR Anthony Erickson 202-475-3748
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Expected Benefit:

Add to general R&D knowledge base

Notes:

★ Indicates RDC product.



Laser Deposited Nonskid (LDN) Analysis

Mission Need: A more cost effective and reliable non-skid technology.

Project Objectives:

- Research characteristics of LDN plate (aluminum & steel) with OGA (e.g., Navy) and academia, with regard to:
 - Weld quality after LDN application;
 - Effects of Corrosion to LDN, as evident in a marine environment; and
 - Determine if this emerging technology offers a significant Life-Cycle Cost (LCC) savings.

Sponsor: CG-45

Stakeholder(s): SFLC



Key Milestone / Deliverable Schedule:

Project Start 18 Nov 11 ✓

★ **Laser Deposited Nonskid (LDN) Analysis Report..... Mar 13**

Project End May 13

Project #: 7747	Tier: 3	RDC POC: Ms. D.J. Hastings 860-271-2798	CG-926 Domain Lead: LCDR Anthony Erickson 202-475-3748
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Expected Benefit:

Direct Product Line/Core Technology Support (Tech refresh, DMS, etc)

Notes:

★ Indicates RDC product.



Evaluation of 270' WMEC Pitch/RPM Schedules

Mission Need: Improved energy efficiency in the operation of cutters to help meet energy conservation goals and greenhouse gas (GHG) reduction goals.

Project Objectives:

- Assess pre-determined pitch/RPM combinations through comprehensive underway data collection with an operational cutter.
- Analyze results and compare with prior (1998) fuel savings projections.
- Deliver recommendations for implementation.

Sponsor: CG-46

Stakeholder(s): SFLC



Key Milestone / Deliverable Schedule:

Project Start	15 Nov 12 ✓
Complete Data Collection	Oct 13
Complete Data Analysis	Dec 13
★ Letter Report – “Evaluation of 270’WMEC Pitch/RPM Schedule Changes”.....	Mar 14
Project End	Apr 14

Project #: 7805	Tier: 3	RDC POC: Mr. Jay Carey 860-271-2702	CG-926 Domain Lead: LCDR Anthony Erickson 202-475-3748
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Expected Benefit:

Direct Product Line/Core Technology Support (Tech refresh, DMS, etc)

Notes:

★ Indicates RDC product.



Tactical Flotation & Buoyancy

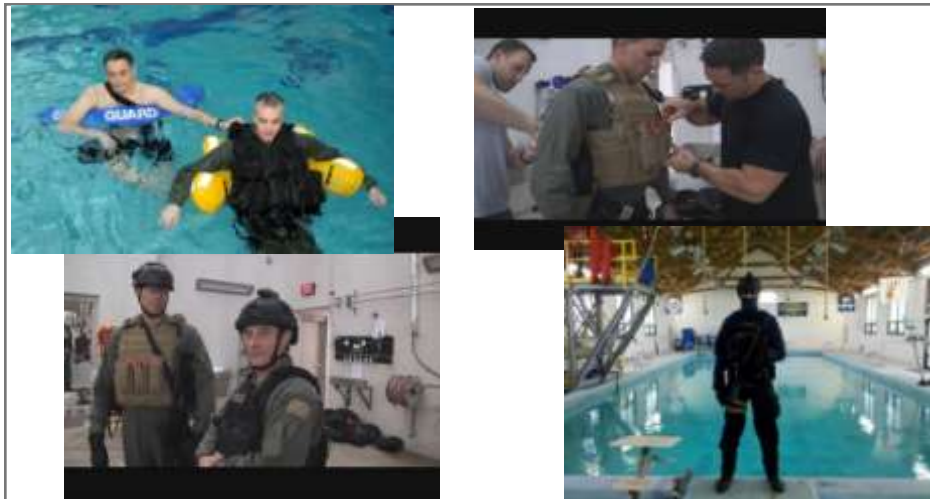
Mission Need: A heads-up flotation system and equipment kits to support unconscious (or incapacitated) tactical operators.

Project Objectives:

- Develop a heads-up flotation solution for the unconscious or incapacitated member.
- Identify lighter, more streamlined and cost effective DSF Tactical Operator equipment.

Sponsor: CG-731

Stakeholder(s): DG-4



Key Milestone / Deliverable Schedule:

Project Start	1 Nov 11	✓
Key Decision Point (Flotation System).....	28 Mar 12	✓
Canceled Reduced Gear Weight Testing.....	1 Nov 12	✓
Complete Flotation System Testing.....	11 Nov 12	✓
★ Heads-Up Flotation System Report	Feb 13	
★ 50 lbs Gear Weight Kit Report	Feb 13	
Project End	Mar 13	

Project #: 7924	Tier: 3	RDC POC: Mr. Brian Dolph 860-271-2817	CG-926 Domain Lead: LCDR Anthony Erickson 202-475-3748
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Expected Benefit:

Direct Product Line/Core Technology Support (Tech refresh, DMS, etc)

Notes:

★ Indicates RDC product.



Surface Branch Support

Mission Need: Maintenance of RDC Branch competencies and knowledge; provide rapid response; and provide external liaison.

Project Objectives:

- Maintain RDC competency and technical knowledge in understanding present and future CG Port Security and Law Enforcement Mission Performance Gaps. Maintain competency and technical knowledge in Vessel Technology, Alternative Energy, and Acquisition Programs Support.
- Support CG Weapons Of Mass Destruction (WMD) program by providing subject matter expertise and OGA leveraging.
- Coordinate Arctic projects.

Sponsor: CG-926

Stakeholder(s):



Key Milestone / Deliverable Schedule:

Project Start.....	7 Dec 07 ✓
Sponsor Performance Gap Meetings.....	As Required
Potential Project Field Visits.....	As Required
New Project Execution Plans (PEP's).....	As Required
New Project Proposals.....	As Required
Technology Demos.....	As Required
Technology Conferences.....	As Required
Project End.....	TBD

★ Indicates RDC product.

Project #: 9994	Tier: 3	RDC POC: Mr. Rich Hansen 860-271-2866	CG-926 Domain Lead: LCDR Anthony Erickson 202-475-3748
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Expected Benefit:

Add to general R&D knowledge base

Notes:



Composite Strategic Investment Teams

Mission Need: A shared vision for mitigating critical Evergreen III “Strategic Needs” between CG RDT&E Program and CG Program Managers contending with changing mission demands.

Project Objectives:

- Develop a shared vision of future CG operational capabilities in selected CG mission areas with key Program Managers.
- Create, with solid CG Program Manager support, FY15 and beyond annual CG RDT&E and CG Program appropriation budget space for mitigating critical capability gaps.
- Provide validated CG operational capability gaps into the RDC annual portfolio development process.

Sponsor: CG-095

Stakeholder(s): CG-926



Key Milestone / Deliverable Schedule:

Project Start	7 Apr 09 ✓
★ Draft POAMs for Arctic & Intel.....	31 Jul 09 ✓
★ Draft POAMs for Arctic, C2, ISR, Aviation, M&S, Alternative Energy, & Surface Asset Technology.....	22 Sep 10 ✓
★ Draft POAMs for Arctic, C2, ISR, Aviation, M&S, Alt Energy, & Surface Asset Technology.....	9 Aug 11 ✓
★ CG Aids to Navigation (AtoN) Capability Gaps for FY12.....	5 Sep 12 ✓
★ CG Underwater Asset Capability Gaps for FY12.....	Oct 12
★ CG C4ISR / Intel Capability Gaps for FY12.....	Oct 12
★ Draft POAMs for Evergreen III Aviation & Arctic	Sep 13
★ Prioritized Gaps for Evergreen III Cyber “Need”	Sep 13
Project End	TBD

★ Indicates RDC product.

Project #: 99961	Tier: 3	RDC POC: Mr. Jim Gynther 860-271-2858	CG-926 Domain Lead: Mr. Dave England 202-475-3087
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Expected Benefit:

Add to general R&D knowledge base

Notes:



Short Term Analytical Support Efforts (REACT Reports)

Purpose:

Provide short term analytical to support CG decision makers with a means to access quick, inexpensive analyses to investigate a wide range of technology issues relating to current or planned CG operations or procurements. Larger analytical support projects will typically require funding to cover the cost of R&D Center labor & overhead and other direct costs.

FY13 Efforts:

Submission Date	Title	Office Supported
Ongoing	Inland Construction Tender Fleet Mix	CG-932
Ongoing	OPC Homeport Analysis	CG-932



USCG Search for the BEAR

Mission Need: Locate the wreck of the former Revenue Cutter BEAR in the vicinity of Brown's Bank, North Atlantic Ocean.

Project Objectives:

- Coordinate with National Oceanographic and Atmospheric Association (NOAA) to locate and explore the wreckage of the former Revenue Cutter BEAR, which foundered under tow and sank in the North Atlantic in March 1963, using CG SAROPS and Underwater Imaging System as well as NOAA research vessels and attached equipment.
- Use patrol planning and execution as a training tool for NOAA Officer Candidates and USCG CGA Cadet Training Program.

Sponsor: LANTAREA Historian's Office

Stakeholder(s): NOAA, CGA



Key Milestone / Deliverable Schedule:

Project Start	Aug 12
Planning Workshop for NOAA and SAROPS.....	Oct 12
Search Areas Validated.....	Nov 12
Charter Approved and Signed.....	Dec 12
★ Memorandum of Agreement Signed.....	Dec 12
Patrol Plans Approved.....	Jan 13
Spring Patrol.....	Mar 13
Early Summer Patrol.....	May 13
★ BEAR located.....	TBD

★ Indicates RDC product.

Project #:	Tier:	RDC POC:	CG-926 Domain Lead:
N/A	3	CDR Octavia Ashburn	N/A

Expected Benefit:

Add to general R&D knowledge base

Core Search Team Composition:

LANTAREA Historian	CGA x 2
CG RDC x 2	Documentation Team (Volunteers)
International Ice Patrol x 2	x 6
NOAA x 2	Others - TBD





Acquisition Directorate

Research & Development Center

RDC FY13 Project Portfolio



Externally Funded Projects



C-144 Video and Mission Processor (VAMP)

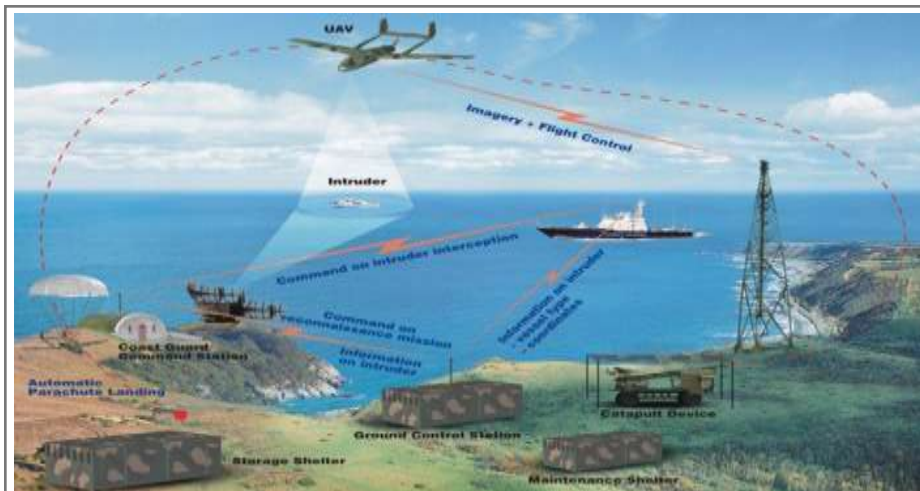
Mission Need: Process, exploit, and disseminate (PED) signals of interest as part of airborne, forward collections platforms to support advanced surveillance, identification, classification, and interception.

Project Objectives:

- Assess deficiencies in the Video & Mission Processor (VAMP); provide recommendations on a State-Of-The-Market (SOTM) VAMP-”like” device to replace existing device.

Sponsor: CG-933

Stakeholder(s): CG-761, CGCG, CG-251



Key Milestone / Deliverable Schedule:

Project Start	TBD
Stakeholder workshop	TBD
Review (VAMP) BAA results.....	TBD+3 Mos.
Conduct Flight Tests of upgraded VAMP	TBD+5 Mos.
★ Report on VAMP upgrade.....	TBD+7 Mos.
Project End	TBD+5 Mos.

Project #: 2013.035	Tier: 1	RDC POC: Ms. Val Arris 860-271-2849	CG-926 Domain Lead: CDR Tung Ly 202-475-3011
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Expected Benefit:

Direct Acquisition Support
(MAR, MNS, CONOPS, ORD, AA, LCCE, T&E, etc)

Notes:

★ Indicates RDC product.



NSC Side Davit Launch and Recovery Simulation

Mission Need: Improvement in NSC launch and recovery operations.

Project Objectives:

- Develop, integrate and analyze motion control strategies.
- Provide human-in-the-loop simulation of launch and recovery based on existing davit technology.
- Produce a report to support IOT&E.

Sponsor: CG-9321

Stakeholder(s):



Key Milestone / Deliverable Schedule:

Project Start TBD

★ **RDC Product (Report) TBD+9 Mos.**

Project End TBD+10 Mos.

★ Indicates RDC product.

Project #: 2013.037	Tier: 3	RDC POC: Dr. Anita Rothblum 860-271-2847	CG-926 Domain Lead: LT Derek Storolis 202-475-3492
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Expected Benefit:

Direct Acquisition Support
(MAR, MNS, CONOPS, ORD, AA, LCCE, T&E, etc)

Notes:

Nationwide Automated Information System (AIS) Acquisition

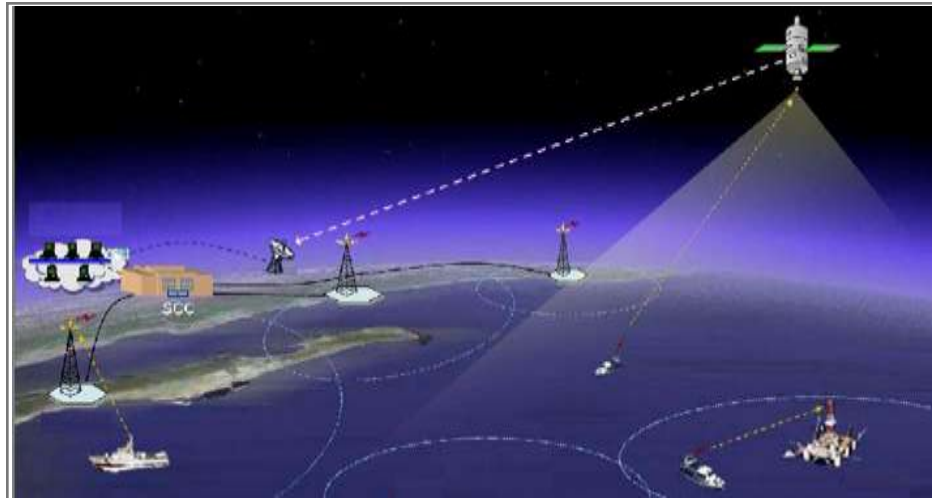
Mission Need: Analyses and tool development to support acquisition of the NAIS Permanent Transceive (PT) System.

Project Objectives:

- Develop software and methods needed to support transition to NAIS PT Initial Operation Capable (IOC) System from NAIS Interim System.
- Develop tools and methods to monitor and evaluate operation of the NAIS PT IOC System performance and transmit capability for compliance with national and international VDL usage guidelines.

Sponsor: CG-9332

Stakeholder(s): CG-761



Key Milestone / Deliverable Schedule:

Project Start.....	Jun 05	✓
Implement Temporary System Operation Center.....	Oct 06	✓
Deploy NAIS Interim System Network.....	24 Mar 08	✓
⋮		
★ Increment-1 Interface Control Document.....	27 May 09	✓
★ Technical Assessment of AIS Reception from Orbcomm Satellites.....	1 Jul 09	✓
★ Modifications to I-1 Software suitable for use with the I-2 NAIS Network.....	19 Sep 12	✓
★ Establish Capability to Monitor and Evaluate Operation of the NAIS PT IOC System Transmit.....	Aug 13	
★ Perform Daily NAIS PT IOC System Reception Performance Analysis.....	Sep 13	
Project End.....	Dec 13	

★ Indicates RDC product.

Project #: 2411	Tier: 2	RDC POC: Mr. Lee Luft 860-271-2685	CG-926 Domain Lead: CDR Tung Ly 202-475-3011
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Expected Benefit:

Direct Acquisition Support
(MAR, MNS, CONOPS, ORD, AA, LCCE, T&E, etc)

Notes:



Operational Testing of ESS

Mission Need: TTPs and field-validated operational performance data for the Electro-Optical Infrared Sensor System (ESS).

Project Objectives:

- Validate effectiveness and provide recommendations to improve current ESS settings, configurations and employment techniques on the MH-60T and MH-65C/D helicopters.
- Develop lateral range curves and sweep widths for the ESS Thermal Imager against typical SAR targets.
- Characterize operational performance and provide TTP input for all ESS components.

Sponsor: CG-931

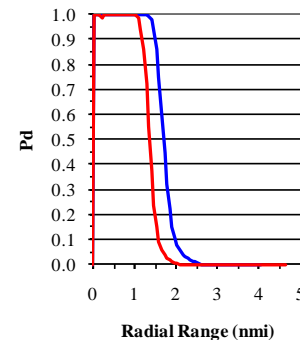
Stakeholder(s):

Key Milestone / Deliverable Schedule:

Project Start	9 Dec10 ✓
★ Post-test Briefing on ESS Validation Test.....	28 Jun 11 ✓
Phase 3 At-sea Operational Performance Testing...	14 Oct 11 ✓
★ Interim Report & Brief on FY11 ESS Operational Performance Testing.....	28 Mar 12 ✓
Phase 4 At-sea Operational Test Event 1	Apr 13
Phase 4 At-sea Operational Test Event 2	Oct 13
★ Post-test Briefing on ESS Phase IV Test.....	Jan 14
★ Final Report & Brief on FY11 ESS Operational Performance Testing.....	Apr 14
Project End	May 14

★ Indicates RDC product.

PIW w/ PFD in 4x FOV
300 ft Search



Project #: 7603	Tier: 3	RDC POC: LT Stephen Dunn 860-271-2789	CG-926 Domain Lead: CDR Albert Antaran 202- 475-3049
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Expected Benefit:

Improved Doctrine/CONOPs/TTPs

Notes:



Support for H65 RADAR Replacement

Mission Need: Support the H65 RDR 1300(C) Bendix/King RADAR replacement.

Project Objectives:

- Review and provide technical feedback on the RFI responses.
- Provide technical support to assist with preliminary specification (P-Spec) document and drafting RFP.
- Review and provide technical feedback on the RFP responses.
- Provide support to model RADAR performance capabilities from vendor data in order to effectively compare candidate products and assist in source selection.

Sponsor: CG-9315

Stakeholder(s):



Key Milestone / Deliverable Schedule:

Project Start	3 Mar 11	✓
RFI Technical Support.....	30 Jun 11	✓
P-Spec Technical Support.....	1 Sep 12	✓
RFP Technical Support.....	Feb 13	
★ Technical Support for H-65 Radar Replacement.....	Apr 13	
Source Selection Committee Technical Support..	Apr 13	
Project End	May 13	

★ Indicates RDC product.

Project #: 7604	Tier: 3	RDC POC: LCDR Tom Hickey 860-271-2818	CG-926 Domain Lead: CDR Albert Antaran 202- 475-3049
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Expected Benefit:

Direct Acquisition Support
(MAR, MNS, CONOPS, ORD, AA, LCCE, T&E, etc)

Notes:



ESS Geo-positioning Accuracy Assessment

Mission Need: USCG rotary wing (RW) fleet seeks to validate ESS geo-positioning accuracy and reduce resource burden imposed by current calibration requirements.

Project Objectives:

- Conduct airborne ESS geo-positioning accuracy tests to evaluate target positioning errors (1) after conducting a standard calibration and (2) without calibration following various maintenance actions that involve removal and replacement of key ESS components.
- Document geo-positioning errors for each test scenario.
- Provide recommendations concerning circumstances under which re-calibration should be performed.

Sponsor:

ALC - ESD

Stakeholder(s):

CG-41, CG RW Air Stations



Key Milestone / Deliverable Schedule:

Project Start.....	Jan 13
Conduct GEOPOINT Accuracy Testing.....	Mar 13
★ Analysis of ESS Geo-positioning Accuracy and Calibration Requirements.....	Aug 13
Project End.....	Sep 13

Project #: 7750	Tier: 3	RDC POC: Mr. Gary Hover (860) 271-2818	CG-926 Domain Lead: CDR Al Antaran (202) 475- 3049
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Expected Benefit:

Direct Product Line/Core Technology Support (Tech refresh, DMS, etc)

Notes:

★ Indicates RDC product.



MH-65 AFCS System Support Study

Mission Need: The CG requires an updated System Support Study for the MH-65 AFCS.

Project Objectives:

- Develop an independent H-65 AFCS System Support Study and compare to the USCG study conducted in 2011.
- Research Solutions for obsolescence issues. Potential solutions will include purchasing last time buys of repair parts, initiating manufacturing and re-engineering existing components.

Sponsor: CG-926

Stakeholder(s): CG-9315



Key Milestone / Deliverable Schedule:

Project Start.....	6 Dec 12	✓
ALMIS Data Collection.....	Jan 13	
KDP.....	Jan 13	
Vendor Site Visits.....	Feb 13	
Update Systems Support Study – Draft	Mar 13	
★ Update Systems Support Study- Final.....	Mar 13	
Project End.....	Mar 13	

★ Indicates RDC product.

Project #: 7806	Tier: 3	RDC POC: Monica Cisternelli (860) 271-2741	CG-926 Domain Lead: CDR Albert Antaran (202) 475-3049
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Expected Benefit:

Inform follow-on acquisition

Notes:

Using CORE AC&I for labor



Development of a Modernized IMO GMDSS

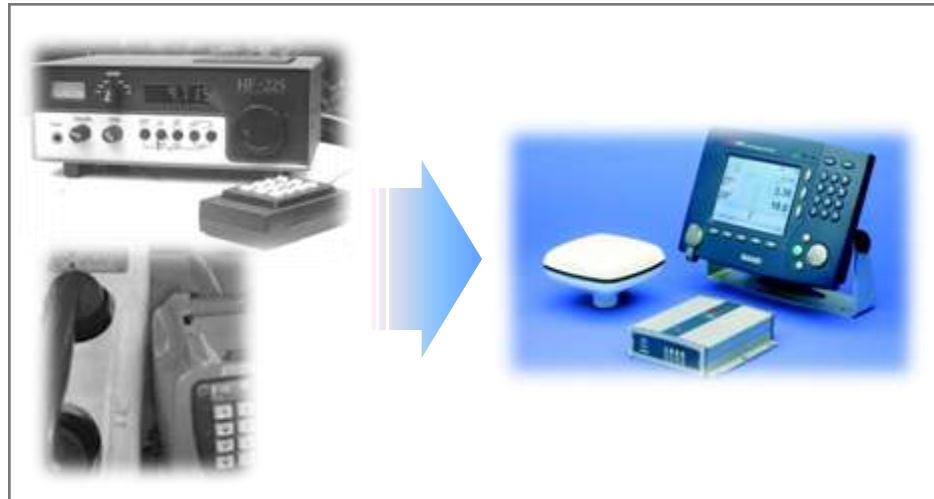
Mission Need: Participation in Standards Development to support Modernization of the Global Maritime Distress Signal System (GMDSS) by the IMO.

Project Objectives:

- Participate in the IMO's Report Drafting Group which will author a modernized GMDSS for the SOLAS convention.
- Avoid telecommunications regulators imposing high-cost and unsustainable solutions upon the CG. Incorporate new technologies such as AIS, networks, & modern navigation systems.
- Developing a sustainable and economic GMDSS solution which improves maritime safety and lessens the burden of CG SAR operators & watchstanders.

Sponsor: CG-652

Stakeholder(s):



Key Milestone / Deliverable Schedule:

Project Start	TBD
★ Draft High Level Review of Modernized GMDSS.....	TBD+11 Mos.
★ Draft Detailed Review of Modernized GMDSS.....	TBD+23 Mos.
★ Outline of Modernization Plan.....	TBD+35 Mos.
★ Completed Modernization Plan.....	TBD+47 Mos.
★ Endorsed Modernization Plan.....	TBD+59 Mos.
Project End	TBD+59 Mos.

★ Indicates RDC product.

Project #: 2013.018	Tier: 3	RDC POC: Mr. Jon Turban, P.E. 860-271-2824	CG-926 Domain Lead: CDR Tung Ly 202-475-3011
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Expected Benefit:

Influence international standards

Notes:



Project Navigation 2025 Prototype Implementation

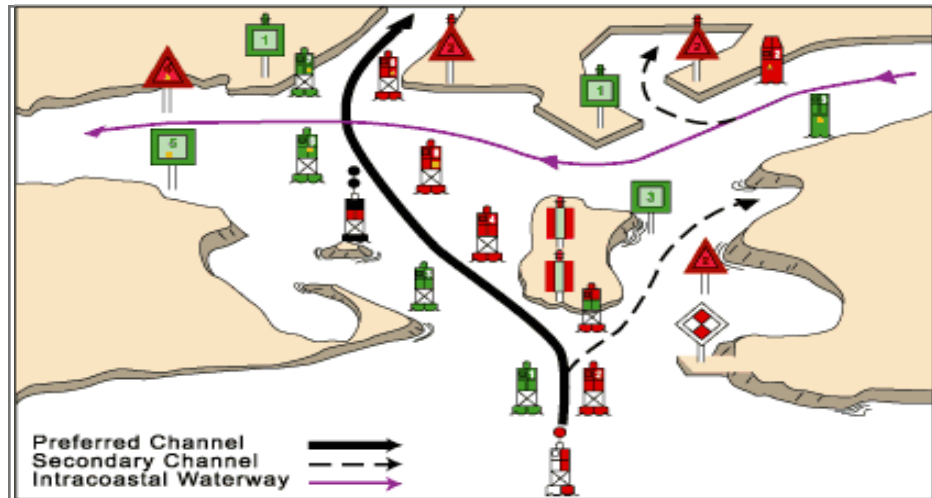
Mission Need: A design, implementation, and analysis of a new 21st Century Aids to Navigation System (one that is heavily based on electronic navigation capabilities and less on physical aids) within two US ports / waterways.

Project Objectives:

- Conduct initial business case for a spatial waterways design capability per System Development Life Cycle (SDLC) process.
- Analyze alternatives for modernized Western Rivers waterway designs.
- Prepare for Design Phase of Navigation 2025 – Prototype Implementation project.

Sponsor: CG-NAV-1

Stakeholder(s): DOT (VOLPE), ACOE



Key Milestone / Deliverable Schedule:

Project Start	26 Jul 12 ✓
Conduct Initial Business Case.....	May 13
★ Nav 2025 - Initial Business Case for a Waterways Design and Spatial Analysis Capability.....	Jun 13
Analyze Alternatives for Western Rivers.....	Jul 13
★ Nav 2025 – Analysis of Alternatives for Waterway Designs on the Western Rivers	Aug 13
Project End	Sep 13

★ Indicates RDC product.

Project #: 2301	Tier: 2	RDC POC: Mr. Warren Heerlein 860-271-2625	CG-926 Domain Lead: LCDR Anthony Erickson 202-475-3748
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Expected Benefit:

Improve operational performance/efficiency/mission execution/resiliency

Notes:

Support of Nav 2025 is anticipated to last 5 or more years. Projects will be executed as a joint collaboration with USACE.



AIS Transmit Capability

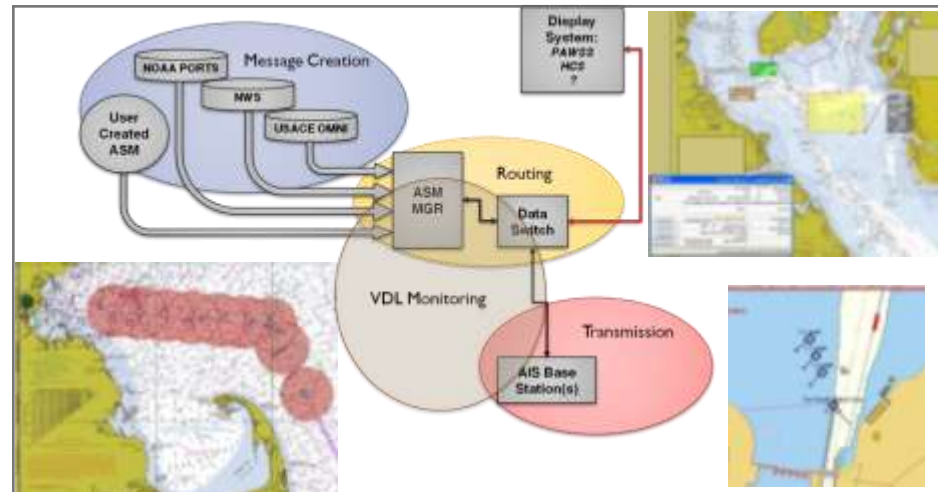
Mission Need: Investigation and evaluation of the AIS transmit capability.

Project Objectives:

- Investigate requirements of users (government and commercial) for AIS binary message transmit.
- Evaluate the effectiveness of information disseminated from USCG Vessel Traffic Services (VTS) and other providers.
- Demonstrate and develop AIS binary message transmit capability.

Sponsor: CG-7413, CG-7611

Stakeholder(s): CG-741, CG-761



Key Milestone / Deliverable Schedule:

Project Start	2 May 07 ✓
★ Technical Clarifications to IMO SN/Circ. 289	14 Feb 11 ✓
★ Input Paper to IALA eNav9 on AIS ASM's....	17 Mar 11 ✓
★ Input Paper on AIS ASMs to IMO Nav57.....	11 Apr 11 ✓
★ Transition Plan for Tampa.....	8 Sep 11 ✓
★ Operational Framework for AIS Transmit.....	10 Sep 12 ✓
★ Operational Implementation Plan for AIS Transmit.....	Aug 13
Project End	Dec 14

★ Indicates RDC product.

Project #: 2413	Tier: 3	RDC POC: Ms. Irene Gonin 860-271-2694	CG-926 Domain Lead: CDR Tung Ly 202-475-3011
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Expected Benefit:

Improve operational performance/efficiency/mission execution/resiliency

Notes:



NAIS Technical Forum and Performance Analysis Support

Mission Need: A review of and modification to international standards, assistance conducting VDL integrity monitoring and analysis, and support for sustainment of the NAIS Network.

Project Objectives:

- Participate in standards development.
- Provide project sponsor with VHF Data Link (VDL) integrity monitoring and analysis critical to maintaining the integrity of the NAIS.
- Provide the expertise and capabilities needed to support and sustain the NAIS network, and support transition to the NAIS Permanent Transceive (PT) System.

Sponsor: CG-761

Stakeholder(s): CG-9332



Key Milestone / Deliverable Schedule:

Project Start.....	5 Dec 08 ✓
Attend AIS Standard Committee Meetings....	Oct 08–Sep 13
⋮	
★ Technical Inputs to IEC 61162 Series.....	30 Aug 12 ✓
★ Technical Inputs to NMEA 2000 v2.0.....	19 Sep 12 ✓
★ Rhode Island Sound Traffic Study.....	31 Oct 12 ✓
★ VDL Analysis Work Completed Since Last RDC	
VDL Analysis Loading Report.....	8 Nov 12 ✓
★ Technical Inputs to NMEA 2000 v2.0 Standard.....	Sep 13
★ Technical Inputs to IEC 61162-1 Interface Std.....	Sep 13
★ Interim Report: VDL Analysis using New Long Range AIS Instrumentation.....	Sep 13
Project End.....	Dec 13

★ Indicates RDC product.

Project #: 2419	Tier: 3	RDC POC: Mr. Lee Luft 860-271-2685	CG-926 Domain Lead: CDR Tung Ly 202-475-3011
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Expected Benefit:

Influence international standards

Notes:



General Engineering Laboratory Support

Mission Need: Test and Evaluation of Aids to Navigation to improve performance, lower costs and extend maintenance intervals.

Project Objectives:

- Provide a laboratory and test and evaluation services in support of the CG Aids to Navigation (AtoN) program.
- Conduct test and evaluation of AtoN to ascertain conformance with established regulatory and certification criteria.
- Evaluate the viability of emerging technologies to reduce CG operating/maintenance costs or alleviate (AtoN signal) problem areas.

Sponsor: CG-432

Stakeholder(s):

Key Milestone / Deliverable Schedule:

Project Start..... circa 72 ✓

★ **GELS FY12 Activity Summary 1st and 2nd Qt .. 09 Apr 12 ✓**

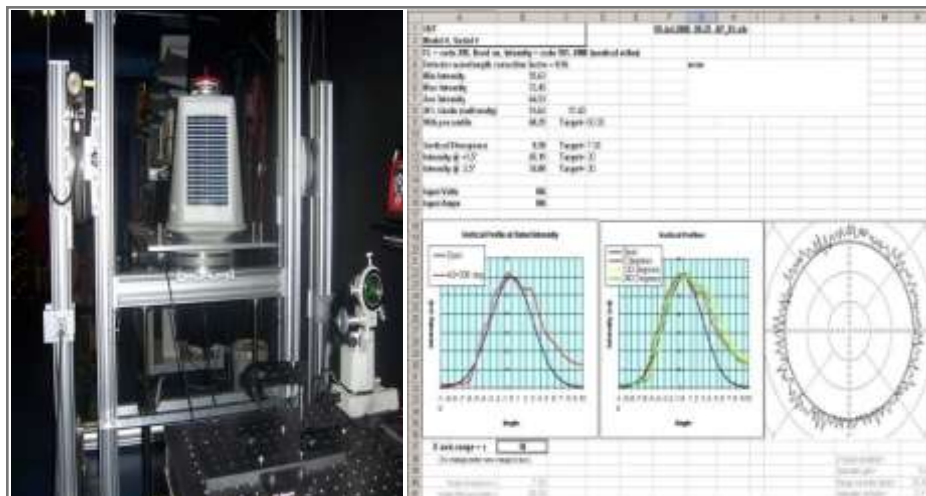
★ **GELS FY12 Activity Summary 3rd and 4th Qtr 27 Sep 12 ✓**

★ **GELS FY13 Activity Summary 1st and 2nd Qtr Apr 13**

★ **GELS FY13 Activity Summary 3rd and 4th Qtr Sep 13**

Project End TBD

★ Indicates RDC product.



Project #: 2784	Tier: 3	RDC POC: Mr. Vincent Reubelt 860-271-2661	CG-926 Domain Lead: LCDR Anthony Erickson 202-475-3748
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Expected Benefit:
Direct Product Line/Core Technology Support (Tech refresh, DMS, etc)

Notes:

Command Center Capability Analysis Support

Mission Need: A comprehensive understanding of the essential /core set of Command Center capabilities.

Project Objectives:

- Establish a set of “baseline” (core) Command Center (CC) capability requirements (Phase 1).
- Use capability requirements to perform “current state” assessment for two Command Center missions (Phase 2).

Sponsor: CG-7412

Stakeholder(s):



Key Milestone / Deliverable Schedule:

Project Start	3 Apr 12 ✓
Draft Capabilities Framework (2 missions)	28 Jun 12 ✓
★ Command Center Capability Framework.....	3 Oct 12 ✓
Begin Phase 2.....	Jan 13
Mission 1: Field Assessment of Current State	Apr 13
Mission 2: Field Assessment of Current State	May 13
Develop CONOP for Use of Framework.....	Jul 13
★ Assessing the Current State of CC Operations.....	Oct 13
Project End.....	TBD

★ Indicates RDC product.

Project #: 3402	Tier: 3	RDC POC: Dr. Anita Rothblum 860-271-2847	CG-926 Domain Lead: Mr. Jaurin Joseph 202- 475-3493
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Expected Benefit:

Improved Doctrine/CONOPs/TTPs

Notes:



Vessel Energy Efficiency Baseline Tool

Mission Need: The means to improve energy efficient operation of cutters to meet greenhouse gas (GHG) emission reduction goals.

Project Objectives:

- Exploit digital data capabilities of post-MEP 270' WMEC main propulsion control & monitoring system (MPCMS) by incorporating enhanced data logging and fuel oil metering into available data stream for future analysis.

Sponsor: CG-46

Stakeholder(s): SFLC



Key Milestone / Deliverable Schedule:

Project Start	6 Jun 11 ✓
MPCMS Software Interface Developed.....	30 Sep 12 ✓
Fuel Oil Meter (FOM) Installation and Testing.....	Jun 13
★ Vessel Energy Efficiency Baseline Tool/ Final Letter Report.....	Aug 13
Project End	Aug 13

★ Indicates RDC product.

Project #: 4109	Tier: 3	RDC POC: Mr. Jay Carey 860-271-2702	CG-926 Domain Lead: LCDR Anthony Erickson 202-475-3748
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Expected Benefit:

Direct Product Line/Core Technology Support (Tech refresh, DMS, etc)

Notes:



Preliminary Business Case Analysis – Boat Stations

Mission Need: A preliminary Business Case Analysis to identify possible alternatives to the traditional brick and mortar boat station buildings and facilities.

Project Objectives:

- Create study plan.
- Conduct a high level requirements gap analysis.
- Conduct a preliminary Business Case Analysis (evaluate alternatives for CG Boat Stations in terms of risk, ROM life cycle costs, supportability and cost-benefit).

Sponsor: CG-731

Stakeholder(s): CG-D5



Key Milestone / Deliverable Schedule:

Project Start	TBD
Create a Study Plan.....	TBD+6 Mos.
Site Visits (Other Federal Agencies, CG Small Boat Stations).....	TBD+6 Mos.
Conduct High Level Requirements Analysis.....	TBD+8 Mos.
★ Preliminary Business Case Analysis – Small Boat Station Facilities.....	TBD+13 Mos.
Project End	TBD+14 Mos.

★ Indicates RDC product.

Project #: 5113	Tier: 3	RDC POC: Ms. Monica Cisternelli 860-271-2741	CG-926 Domain Lead: LCDR Anthony Erickson 202-475-3748
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Expected Benefit:

Direct Acquisition Support
(MAR, MNS, CONOPS, ORD, AA, LCCE, T&E, etc)

Notes:



ORAM DOMICE Model Improvement

Mission Need: Correct inaccuracies in the prototype DOMICE risk model.

Project Objectives:

- Modify the prototype DOMICE risk model to improve accuracy and fidelity for the time step.

Sponsor: CG-5PW

Stakeholder(s): LANT-7, CG-751



Key Milestone / Deliverable Schedule:

Project Start	11 Sep 12 ✓
★ Domestic Icebreaking Simulation Model	Feb 13
★ Domestic Icebreaking Simulation Model User Guide	Feb 13
Project End	Mar 13

Project #: 7519	Tier: 3	RDC POC: Mr. Mark VanHaverbeke 860-271-2754	CG-926 Domain Lead: LT Derek Storolis 202-475-3492
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Expected Benefit:
Improve operational performance/efficiency/mission execution/resiliency

Notes:

★ Indicates RDC product.

ECAT Modeling to Evaluate CG Display Design

Mission Need: A cost-effective means to evaluate the design of operator displays.

Project Objectives:

- Demonstrate the value of the ECAT model to evaluate and improve the design of CG displays.

Sponsor: CG-1B3

Stakeholder(s):



Key Milestone / Deliverable Schedule:

Project Start	TBD
Select Scenarios/Tasks for Display Design.....	TBD+4 Mos.
Design and Test Alternative Displays.....	TBD+7 Mos.
Present Briefing to Sponsor.....	TBD+9 Mos.
★ Use of ECAT to Evaluate CG Displays.....	TBD+10 Mos.
Project End	TBD+12 Mos.

Project #: 7521	Tier: 3	RDC POC: Dr. Anita Rothblum 860-271-2847	CG-926 Domain Lead: Mr. Jaurin Joseph 202- 475-3493
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Expected Benefit:
Improve operational performance/efficiency/mission execution/resiliency

Notes:

★ Indicates RDC product.

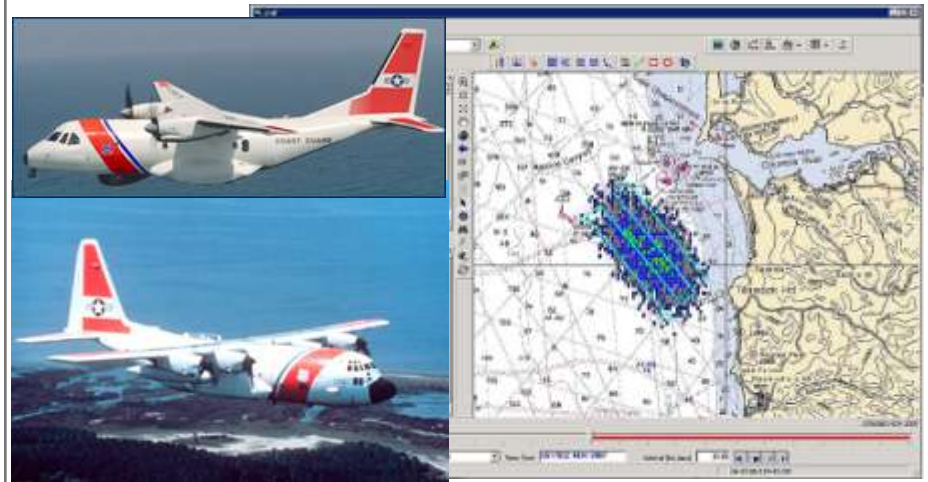
USCG Airborne Radar Lateral Range Curves for SAROPS

Mission Need: SAROPS requires search performance data for the full range of radar settings and altitudes reflected in current small target search guidance to CG airborne radar operators.

Project Objectives:

- Apply physics-based radar modeling and previously-documented heuristic methods to expand the airborne radar lateral range curve (LRC) data set available to SAROPS programmers.
- Document results in a format that can be used to update the SAROPS search planning software tool.

Sponsor: CG-5RI
Stakeholder(s): CG-711, CG SAR Mission Planners



Key Milestone / Deliverable Schedule:

Project Start..... Jan 13
 Conduct radar LRC analysis & modeling..... Feb 13
 ★ **Letter Report: “Expanded CG Airborne Radar LRC Estimates for Small Search Objects”..... Mar 13**
 Project End..... Apr 13

★ Indicates RDC product.

Project #: 7608	Tier: 3	RDC POC: Mr. Gary Hover (860) 271-2818	CG-926 Domain Lead: CDR Al Antaran (202) 475- 3049
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Expected Benefit:

Improve operational performance/efficiency/mission execution/resiliency

Notes:



Underwater Imaging System Transition Evaluation

Mission Need: An integrated CG underwater detection and imaging organic CG capability.

Project Objectives:

- Identify where the UIS could add value/improve the operational efficacy of CG Missions relating to underwater operations.

Sponsor: CG-5RE

Stakeholder(s):



UIS
on a
TANB

Key Milestone / Deliverable Schedule:

Project Start	29 Feb 12 ✓
★ Mission Applicability Matrix	24 Oct 12 ✓
Technology Transition Agreement Signed.....	Nov 12 *
Project End	20 Dec 12 ✓

★ Indicates RDC product.

Project #: 7748	Tier: 3	RDC POC: Mr. Scot Tripp 860-271-2680	CG-926 Domain Lead: CDR Tung Ly 202-475-3011
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Expected Benefit:

Improve operational performance/efficiency/mission execution/resiliency

Notes:

*Pending Headquarters realignment.



Analysis Support for CG Airborne Use of Force (AUF) Weapons Testing

Mission Need: Coast Guard policymakers need objective information concerning shrapnel/ricochet danger zones resulting from employment of AUF weapons and tactics.

Project Objectives:

- Conduct live-fire testing to characterize likely shrapnel/ricochet danger zones around typical threat vessel outboard motors using current USCG AUF ordnance, ammunition, and TTPs.

Sponsor: CG-7112

Stakeholder(s): CG-721, ATC Mobile, CG AUF Units



Key Milestone / Deliverable Schedule:

Project Start.....	TBD
Conduct Live Fire Testing.....	Start+6 mos.
★ Analysis of Likely Shrapnel/Ricochet Dangers from USCG Airborne Use of Force Engagements Briefing.....	Start+12 mos.
Project End.....	Start+13 mos.

Project #: 7749	Tier: 3	RDC POC: LCDR Tom Hickey (860) 271-2897	CG-926 Domain Lead: CDR Al Antaran (202) 475-3049
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Expected Benefit:

Improved Doctrine/CONOPs/TTPs

Notes:

Start date dependent on receipt of funds.

★ Indicates RDC product.



Maritime Security Operations Mission Analysis Report

Mission Need: A mission analysis for the MSO Program.

Project Objectives:

- Prepare a MSO Program MAR.
- Deliver a briefing.
- Deliver a final report.

Sponsor: DCO-81

Stakeholder(s): CG-DOD



Key Milestone / Deliverable Schedule:

Project Start	16 May 12	✓
★ Maritime Security Operations Mission Analysis Briefing	12 Dec 12	✓
★ Maritime Security Operations Mission Analysis Report	May13	
Project End	Jun 13	

Project #: 7926	Tier: 2	RDC POC: Mr. Mark VanHaverbeke 860-271-2754	CG-926 Domain Lead: LT Derek Storolis 202-475-3492
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Expected Benefit:

Direct Acquisition Support
(MAR, MNS, CONOPS, ORD, AA, LCCE, T&E, etc)

Notes:

★ Indicates RDC product.



Chicago Sanitary Ship Canal (CSSC) Marine Safety Risk Analysis

Mission Need: A review of marine safety risks associated with the fish barrier to determine adequacy of present risk mitigation strategies and make recommendations for alternatives.

Project Objectives:

- Conduct an analysis of risks to marine safety for commercial and recreational mariners that transit the Chicago Sanitary and Ship Canal (CSSC) in the vicinity of the fish barrier.
- Determine adequacy of present risk mitigation strategies.
- If necessary, recommend alternatives to the present strategies.

Sponsor: CGD9 (dpi)

Stakeholder(s): USEPA-GLNPO



Key Milestone / Deliverable Schedule:

Project Start	8 Nov 11	✓
Data Collection and Analysis	25 Aug 12	✓
Preliminary Risk Assessment.....	21 Dec 12	✓
Risk Analysis and Mitigation Strategies.....	Mar 13	
★ CSSC Marine Safety Risk Analysis Report.....	Apr 13	
Project End	May 13	

★ Indicates RDC product.

Project #: 3329	Tier: 3	RDC POC: Mr. M. J. Lewandowski 860-271-2692	CG-926 Domain Lead: Mr. Jaurin Joseph 202- 475-3493
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Expected Benefit:

Improve operational performance/efficiency/mission execution/resiliency

Notes:



GLRI BWT Shipboard Approval Tests

Mission Need: Capability to verify that ballast water treatment systems installed aboard ships meet discharge standards.

Project Objectives:

- Develop methodology and test protocols for approval/certification testing of BWT systems aboard ships.
- Coordinate with CG-5224 and MARAD to test BWT system aboard Laker.
- Evaluate BWT system in fresh water.

Sponsor: CG-5PS

Stakeholder(s): USEPA-GLNPO



Key Milestone / Deliverable Schedule:

Project Start	10 Jan 11 ✓
★ Generic Protocol for Filtration Skid	8 Jun 12 ✓
Begin Shipboard Tests	26 Jul 12 ✓
★ Validation of Filtration Skid During Land-Based & Shipboard Tests.....	12 Oct 12 ✓
Key Decision Point to Pursue Fourth Test	Sep 13
★ Validation of Shipboard Testing Protocol.....	Jun 14
Project End	Jul 14

★ Indicates RDC product.

Project #: 41012	Tier: 2	RDC POC: Mr. Chris Turner 860-271-2623	CG-926 Domain Lead: Mr. Jaurin Joseph 202- 475-3493
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Expected Benefit:

Improved Doctrine/CONOPs/TTPs

Notes:



Shipboard Compliance of Ballast Water Discharge Standards (BWDS)

Mission Need: The tools to quickly and reliably determine vessel compliance with the Phase One and the proposed Phase Two ballast water discharge standards.

Project Objectives:

- Determine the availability and capabilities of existing technologies that could be utilized for compliance verification of Phase One and the proposed Phase Two ballast water discharge standards.

Sponsor: CG-5PS

Stakeholder(s): USEPA-GLNPO, CG-CVC2



Key Milestone / Deliverable Schedule:

Project Start	12 Jan 11	✓
Compliance Verification Technology Workshop....	28 Jun 11	✓
Proceedings of Ballast Water Discharge Standards Compliance Subject Matter Expert Workshop.....	7 Sep 11	✓
Market Research Assessment: Verification Technologies for BWDS Compliance.....	17 Oct 12	✓
Concept Design of Compliance Tools.....	Dec 13	
Prototype Development of Compliance Tools.....	Nov 14	
Independent Field Testing of Prototype Compliance Verification Tools.....	Aug 15	
Compliance Tool Transition Plan.....	May 16	
Project End.....	Jun 16	

★ Indicates RDC product.

Project #: 410131	Tier: 2	RDC POC: Ms. Gail Roderick 860-271-2658	CG-926 Domain Lead: Mr. Jaurin Joseph 202- 475-3493
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Expected Benefit:

Direct Product Line/Core Technology Support (Tech refresh, DMS, etc)

Notes:



Develop CG Guidance to Verify Ballast Water Discharge Standards Compliance

Mission Need: Procedures to verify federal ballast water discharge standards.

Project Objectives:

- Describe CG requirements and future capabilities gaps.
- Companion project provides suitable potential technology solutions and tiered approach to numerical BDWS enforcement.
- Identify policy and non-material solutions that meet requirements.
- Develop guidance for CG enforcement of the new BWDS.

Sponsor: CG-5PS

Stakeholder(s): USEPA-GLNPO, CG-CVC-1, CG-CVC-2

Key Milestone / Deliverable Schedule:

Project Start 15 Dec 11 ✓

★ **Guidance to Verify Ballast Water Discharge Standards Compliance..... May 13**

Project End Aug 13



Project #: 410132	Tier: 3	RDC POC: Mr. Chris Turner 860-271-2623	CG-926 Domain Lead: Mr. Jaurin Joseph 202- 475-3493
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Expected Benefit:
Improved Doctrine/CONOPs/TTPs

Notes:

★ Indicates RDC product.

Analysis Support for the Mandated Periodic & Practicability Reviews of Ballast Water Standards

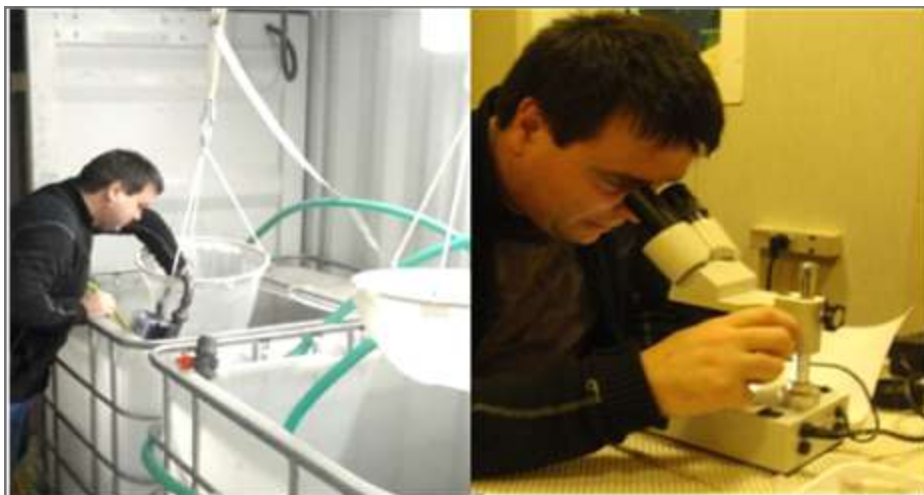
Mission Need: To determine the practicability of implementing ballast water discharge standards more stringent than the current standards.

Project Objectives:

- Develop a plan for determining the practicability of implementing more stringent ballast water discharge standards.
- Conduct a practicability review that examines all aspects of the prevailing ballast water management program requirements, standards, and regulations and assesses the program's effectiveness in preventing invasions.

Sponsor: CG-5PS

Stakeholder(s): USEPA-GLNPO



Key Milestone / Deliverable Schedule:

Project Start.....	Jan 13
Phase I: BWDS Practicability Planning Meeting.....	Aug 13
★ BWDS Practicability Review Plan.....	Feb 14
KDP: Conduct BWDS Practicability Review.....	Feb 14
Phase II: A: Determine detection limits of testing protocols.....	Nov 14
Phase II: B: Determine thresholds of treatment technologies.....	May 15
Phase II: C: Determine integration into ships' ops regime.....	Oct 15
★ BWDS Practicability Review.....	Jan 16
Project End.....	Feb 16

★ Indicates RDC product.

Project #: 410133	Tier: 3	RDC POC: Ms. Gail Roderick 860-271-2658	CG-926 Domain Lead: Mr. Jaurin Joseph 202- 475-3493
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Expected Benefit:

Add to general R&D knowledge base

Notes:



Investigation of Ballast Water Treatment's Effect on Corrosion

Mission Need: Understanding of how ballast water treatment affects ballast tank corrosion in order to assess corrosion acceptability as part of type approval.

Project Objectives:

- Determine potential for accelerated ballast water tank corrosion from various ballast water treatments.
- Determine how CG can assess corrosion acceptability as part of type approval.

Sponsor: CG-5PS

Stakeholder(s): USEPA-GLNPO



Key Milestone / Deliverable Schedule:

Project Start.....	3 Nov 10	✓
Phase 1 – Corrosion Scoping Study	6 May 11	✓
Desktop Literature Review		
Shipboard Surveys (Lakers/Salties)		
KDP for Phase 2.....	1 Sep 11	✓
★ Interim Report: Corrosion Scoping Study.....	19 Oct 11	✓
Phase 2 – Corrosion Rate Assessment Controlled		
Laboratory Tests	19 Oct 12	✓
★ Final Report: Corrosion Rate Assessment.....	Mar 13	
Project End.....	Apr 13	

★ Indicates RDC product.

Project #: 410142	Tier: 2	RDC POC: Ms. Gail Roderick 860-271-2658	CG-926 Domain Lead: Mr. Jaurin Joseph 202- 475-3493
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Expected Benefit:

Add to general R&D knowledge base

Notes:



Asian Carp Towboat/Barge Sampling Study

Mission Need: Understanding whether barge and vessel operations create a dispersal barrier bypass for Asian carp into the Great Lakes.

Project Objectives:

- Support the Barge/Towboat Work Group research.
- Evaluate towboat/barge potential for transporting Asian carp across the dispersal barrier.
- Evaluate carp survival in ballast tanks.
- Estimate impact of vessel operations on Asian carp movement.

Sponsor: USEPA-GLNPO

Stakeholder(s): CG-OES-3



Key Milestone / Deliverable Schedule:

Project Start	8 Apr 10 ✓
Develop Plan with Work Group.....	15 Apr 10 ✓
★ Water Transport During Normal Operations of Towboats and Barges on the Illinois River.....	4 Jan 11 ✓
★ Survivability of Asian Carp in Barge Tanks in the Illinois River.....	23 Mar 12 ✓
Conduct Survey of Local Barges	29 Aug 12 ✓
★ Update “ Water Transport ” report for Local Barges.....	15 Oct 12 ✓
★ Asian Carp Survivability and Water Transport in the Illinois River.....	Jan 13
Project End	Jan 13

★ Indicates RDC product.

Project #: 410143	Tier: 2	RDC POC: Ms. Penny Herring 860-271-2868	CG-926 Domain Lead: Mr. Jaurin Joseph 202- 475-3493
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Expected Benefit:

Add to general R&D knowledge base
Inform EPA, USACE decisions regarding vessels /dispersal barrier

Notes:

Replaced Update “Survivability of Asian Carp in Barge Tanks in the Illinois River” with report combining survivability report with water transport report.



Response to Oil In Ice

Mission Need: A group of methodologies to minimize the damage to the environment caused by spilled oil in extreme cold in the Arctic Region nor the Northern U.S.

Project Objectives:

- To develop equipment and techniques that can be used successfully to detect, track and recover oil in ice filled waters in all conditions.
- Conduct a series of demonstrations in the Great Lakes and the Arctic of increasing complexity to test operational deployments of equipment.
- Support National Academy of Science (NAS) Arctic Response Assessment.

Sponsor: CG-5RI

Stakeholder(s): D9, D17, EPA, BSEE



Key Milestone / Deliverable Schedule:

Project Start.....	2 Nov 09 ✓
Oil in Ice Demonstration 1.....	22 Apr 11 ✓
★ Final Great Lakes Demonstration 1 Report.....	15 Jul 11 ✓
Demonstration 2 - Great Lakes	27 Jan 12 ✓
★ Final Great Lakes Demonstration 2 Report.....	11 May 12 ✓
Great Lakes Demonstration 3	Feb 13
★ Final Great Lakes Demonstration 3 Report.....	Jun 13
Arctic Demonstration 4	Aug 13
★ Arctic: Demonstration White Paper.....	Dec 13
★ Final NAS Report	Oct 14
Project End.....	Oct 14

★ Indicates RDC product.

Project #: 4701	Tier: 2	RDC POC: Mr. Kurt Hansen 860-271-2865	CG-926 Domain Lead: Mr. Shannon Jenkins 202-475-3490
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Expected Benefit:

Improve operational performance/efficiency/mission execution/resiliency

Notes:

Includes funding from FY11 Oil Spill Research Earmark.



Maritime Trace Narcotic Identification/Verification

Mission Need: Narcotic ID/verification capabilities to meet NDCS performance goals.

Project Objectives:

- The project objective is to provide boarding team members a more effective and efficient narcotic identification/validation capability for use during maritime counterdrug missions.

Sponsor: CG-MLE

Stakeholder(s): CG-761



Key Milestone / Deliverable Schedule:

Project Start 6 Jun 11 ✓

★ **Maritime Trace Narcotics Detection Key Performance Parameters (KPP) and Devices.....16 May 12 ✓**

KDP (Go/No-Go Phase I to Phase II) 18 Jun 12 ✓

Begin Field Deployment Testing Apr 13

★ **Maritime Narcotic ID/V Capability Report Sep 13**

Project End Sep 13

★ Indicates RDC product.

Project #: 5802	Tier: 3	RDC POC: Mr. Brian Dolph 860-271-2817	CG-926 Domain Lead: LCDR Anthony Erickson 202-475-3748
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Expected Benefit:

Direct Product Line/Core Technology Support (Tech refresh, DMS, etc)

Notes:



Mobile 10-print Biometric Field Test

Mission Need: Decision support information relating to field use of mobile 10-print multi-modal biometric systems.

Project Objectives:

- Evaluation using Two Print System Architecture.
- Full 10-Print System Configuration Development.
- Develop Facial and Iris Image.
- Implementation and Final Field Test.
- Analyze and report results.
- Environmental tests on additional 10-print biometric devices.

Sponsor: CG-7612

Stakeholder(s): DHS S&T (HFD)



Key Milestone / Deliverable Schedule:

Project Start	10 Sep 11	✓
Phase 1 System Design and Implementation.....	8 Aug 12	✓
Phase 1 Field Deployment (10-print, facial image).....	28 Aug 12	✓
Phase 2 Iris Image Evaluation Brief.....	Jan 13	
★ Mobile 10-Print Biometrics Field Test Brief.....	Oct 13	
★ Final Report: 10-Print Biom Device Perf Tests.....	Oct 13	
Project End	Nov 13	

★ Indicates RDC product.

Project #: 5682	Tier: 2	RDC POC: Dr. Thomas Amerson 860-271-2894	CG-926 Domain Lead: Mr. Shannon Jenkins 202-475-3490
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Expected Benefit:

Direct Product Line/Core Technology Support (Tech refresh, DMS, etc)

Notes:





Acquisition Directorate

Research & Development Center

RDC FY13 Project Portfolio



**Additional R&D
Opportunities**
(Not listed in priority order)



Lighting Assessment for the Cutter Bridge

Mission Need: The ability to effectively maintain dark adaptation on the bridge of Coast Guard cutters.

Project Objectives:

- Measure and understand the lighting problems on the Bridge.
- Determine whether existing solutions (e.g., Navy) could be implemented on CG cutters.

Sponsor: CG-1B3

Stakeholder(s): CG-751



Key Milestone / Deliverable Schedule:

Project Start TBD
 Cutter Visits..... TBD+5 Mos.
 ★ **Lighting Recommendations for the Cutter Bridge..... TBD+9 Mos.**
 Project End TBD+10 Mos.

Project #: 2012.038	Tier: 3	RDC POC: Dr. Anita Rothblum 860-271-2847	CG-926 Domain Lead: Mr. Jaurin Joseph 202- 475-3493
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Expected Benefit:

Add to general R&D knowledge base

Notes:

★ Indicates RDC product.



Method to Evaluate Command Center (CC) Capabilities

Mission Need: A methodology to assess how well CCs meet capability requirements.

Project Objectives:

- Develop a systems approach for assessing CC capabilities and capacities.
- Develop a tool to automate the evaluation strategy.

Sponsor: CG-7412

Stakeholder(s):



Key Milestone / Deliverable Schedule:

Project Start	TBD
Develop and Pilot Test Evaluation Strategy.....	TBD+7 Mos.
★ Annotated Briefing on Evaluation Strategy.....	TBD+10 Mos.
Extend Evaluation Strategy to Other Missions.....	TBD+19 Mos.
Develop and Pilot Test Automated Eval Tool.....	TBD+22 Mos.
Complete and Test CC Evaluation Tool.....	TBD+32 Mos.
★ Deliver CC Evaluation Tool and Briefing.....	TBD+32 Mos.
Project End	TBD+33 Mos.

★ Indicates RDC product.

Project #: 2013.006	Tier: 3	RDC POC: Dr. Anita Rothblum 860-271-2847	CG-926 Domain Lead: CDR Tung Ly 202-475-3011
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Expected Benefit:

Improved Doctrine/CONOPs/TTPs

Notes:



Develop In Situ Devices to Enable Protection of Sunken Military Vessels

Mission Need: A capability to thwart and/or catch looters at historical sites and war graves.

Project Objectives:

- Research an apparatus that can be deployed at wreck sites, especially passive acoustic monitoring system.
- Develop the best fitting apparatus.
- Test the best fitting apparatus.
- Develop the CONOP for the best fitting system.

Sponsor: CG-5RE

Stakeholder(s):



Key Milestone / Deliverable Schedule:

Project Start	TBD
Determine Feasibility of Apparatus.....	TBD+5 Mos.
★ Develop Apparatus	TBD+11 Mos.
Project End	TBD+12 Mos.

Project #: 2013.032	Tier: 3	RDC POC: LT Helen Millward 860-271-2815	CG-926 Domain Lead: CDR Tung Ly 202-475-3011
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Expected Benefit:

Improve operational performance/efficiency/mission execution/resiliency

Notes:

★ Indicates RDC product.



Airborne Oil Spill Remote Sensing and Reporting

Mission Need: Tactics, Techniques, and Procedures (TTP) for optimizing the use of existing airborne sensors for detecting and tracking oil spills.

Project Objectives:

- Baseline current CG airborne capabilities for Detecting, Mapping and Reporting (DMR) oil spills.
- Analyze results of Deepwater Horizon oil spill efforts.
- Document issues in CG oil spill DMR within context of hardware / operator performance and environmental conditions and work with ATC Mobile to develop TTPs.
- Conduct airborne oil spill DMR testing.

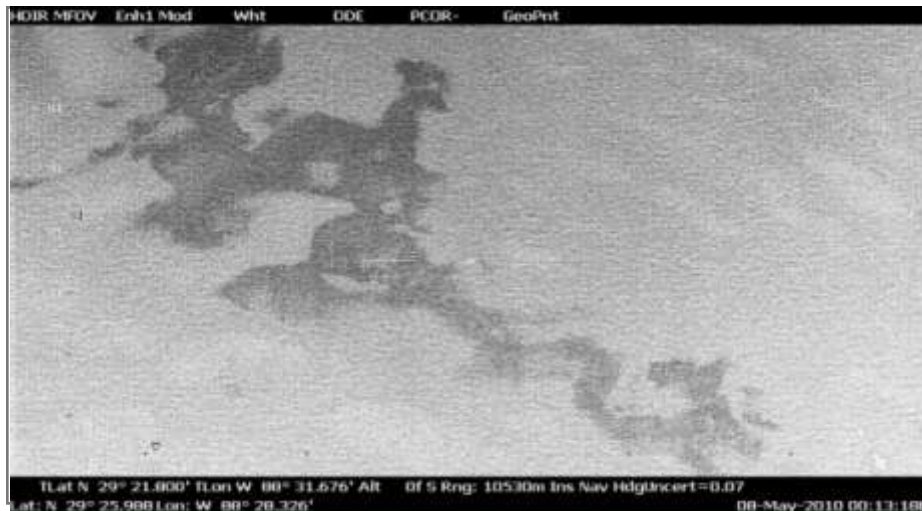
Sponsor: CG-761

Stakeholder(s): CG-926, FORCECOM, BSEE

Key Milestone / Deliverable Schedule:

Project Start	TBD
Baseline Development	TBD+6 Mos.
Analyze DHR Efforts.....	TBD+8 Mos.
Conduct Field Evaluations	TBD+11 Mos.
★ Airborne Oil Spill Remote Sensing and Reporting Final Report	TBD+15 Mos.
Project End	TBD+16 Mos.

★ Indicates RDC product.



Project #: 2012.001	Tier: 3	RDC POC: LT Steve Dunn 860-271-2789	CG-926 Domain Lead: CDR Albert Antaran 202- 475-3049
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Expected Benefit:

Improved Doctrine/CONOPs/TTPs

Notes:



Evaluate Technologies to Optimize CG Tactical Data Transmission

Mission Need: An enterprise level technology capable of transferring “real-time” SAR pattern or Tactical tasking data to its fleet of operational vessels and aircraft.

Project Objectives:

- Assess current CG communications (Sea, Air, and Land assets) infrastructure to determine feasibility of solving current Gap.
- Identify interoperability & other CG enterprise constraints.
- Leverage OGA to identify potentially suitable technologies.
- Submit RFI & investigate suitable public/industry technologies.
- Identify/catalogue impacted or required software & hardware across spectrum of CG communications enterprise.
- Determine top-3 potential solutions & perform cost/benefit analyses.
- Report findings to sponsor.

Sponsor: CG-761

Stakeholder(s): CG-6



Key Milestone / Deliverable Schedule:

Project Start	TBD
OGA Systems Review.....	TBD+1 Mo.
Public/Industry RFI Submission & Review.....	TBD+3 Mos.
★ Final Report: Recommendations for CG Tactical Data Transmission.....	TBD+6 Mos.
Project End	TBD+7 Mos.

Project #: 2013.004	Tier: 3	RDC POC: LCDR Tom Hickey 8760-271-2897	CG-926 Domain Lead: CDR Tung Ly 202-475-3011
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Expected Benefit:

Direct Product Line/Core Technology Support (Tech refresh, DMS, etc)

Notes:

★ Indicates RDC product.



Next Generation (NG) 911 to USCG Responder Demonstration

Mission Need: Capability to receive Internet Protocol (IP) Based 911 Emergency data from Public Safety Answering Points (PSAPs).

Project Objectives:

- Research and identify feasible alternatives to fill the NG911 to USCG Responder gap.
- Select and demonstrate a technology solution compatible with NG911 and USCG Sector operations.
- Investigate NG911 and R21 software compatibility and connectivity requirements.

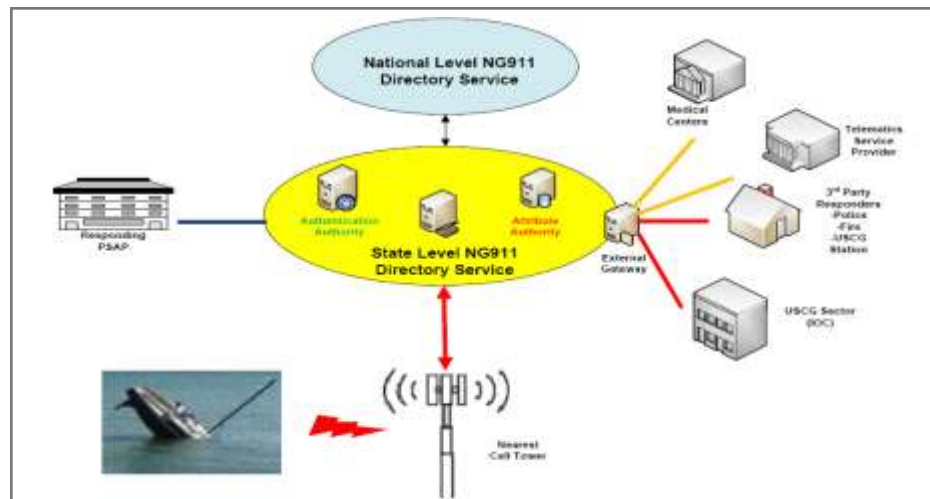
Sponsor: CG-761

Stakeholder(s): CG-652

Key Milestone / Deliverable Schedule:

Project Start	*TBD
Determine Requirements for USCG to Accept NG911 Calls as a 3 rd Party Responder.....	TBD+2 Mos.
Procure HW/SW.....	TBD+12 Mos.
Establish NG911 Connectivity.....	TBD+14 Mos.
Establish IOC.....	TBD+15 Mos.
Complete Demonstration.....	TBD+21 Mos.
★ RDC Final Report.....	TBD+24 Mos.
Project End	TBD+25 Mos.

★ Indicates RDC product.



Project #: 2013.010	Tier: 3	RDC POC: Mr. Dave Larson 860-271-2845	CG-926 Domain Lead: CDR Tung Ly 202-475-3011
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Expected Benefit:

Direct Product Line/Core Technology Support (Tech refresh, DMS, etc)

Notes:

*Project start date is to coincide with NG-911's readiness to accept 3rd party responders at the New London PSAP.



Prototype Hoax Location System Development

Mission Need: Capability to precisely geo-locate VHF marine channel hoax transmissions.

Project Objectives:

- Establish functional requirements for hoax location system.
- Conduct market research, identify, assess, and obtain state of the market COTS/GOTS geo-locating system(s).
- Develop a prototype geo-locating system.
- Test & evaluate geo-locating systems effectiveness.
- Recommend feasible and cost-effective solutions with potential to precisely geo-locate hoaxers.

Sponsor: CG-761

Stakeholder(s): CGD One (DT), Others TBD



Key Milestone / Deliverable Schedule:

Project Start	TBD
Conduct Market Research.....	TBD+4 Mos.
Develop Demonstration Test Plan.....	TBD+8 Mos.
Obtain COTS/GOTS Alternative for Demo.....	TBD+9 Mos.
Develop Prototype Candidate.....	TBD+10 Mos.
Conduct Demonstration.....	TBD+11 Mos.
★ Hoax Location Systems Demonstration Summary Report.....	TBD+16 Mos.
Project End.....	TBD+17 Mos.

★ Indicates RDC product.

Project #: 2013.012	Tier: 3	RDC POC: Mr. Dave Larson 860-271-2845	CG-926 Domain Lead: CDR Tung Ly 202-475-3011
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Expected Benefit:

Direct Product Line/Core Technology Support (Tech refresh, DMS, etc)

Notes:



Identify Navigation, Communications, and Detection (NC&D) Equipment for Ice Rescue Teams

Mission Need: The robust electronic equipment needed for Ice SAR cases.

Project Objectives:

- Research necessary equipment needed to complete Ice Rescue Team (SPC and on foot) missions, with a focus on multi-purpose, weatherproof equipment for Ice Rescue Teams.
- Document requirements and performance gaps.
- Post an RFI for test products/candidates.
- Test products on ice (D-9 environment) to determine viability and to narrow, then finalize the list of potential products.

Sponsor: CG-5RI

Stakeholder(s): LANT-7, CGD-9



Key Milestone / Deliverable Schedule:

Project Start	TBD
Document Requirements and Identified Gaps...	TBD+4 Mos.
Phase 1 Post RFI.....	TBD+6 Mos.
Phase 1 Review, Eval., and Down-Selection.....	TBD+9 Mos.
★ Interim Brief: Lessons Learned and Preliminary Product Selections for Follow-On Testing...	TBD+10 Mos.
Phase 2 Field Testing.....	TBD+15 Mos.
★ Final Report: Lessons Learned and Final Product Recommendations for NC&D Equipment...	TBD+21 Mos.
Project End	TBD+22 Mos.

★ Indicates RDC product.

Project #: 2013.013	Tier: 3	RDC POC: Mr. Don Decker 860-271-2701	CG-926 Domain Lead: LCDR Anthony Erickson 202-475-3748
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Expected Benefit:

Improve operational performance/efficiency/mission execution/resiliency

Notes:



Evaluate Rotary Wing Surface Search Radar (SSR)

Mission Need: To employ advances in commercially available SSR in Coast Guard Rotary Wing aircraft to their maximum benefit.

Project Objectives:

- Evaluate commercially available SSR system for MH-60T or MH-65.
- Determine the best system for the CG.
- Model the system operating in a variety of environmental conditions and mission scenarios.

Sponsor: CG-711

Stakeholder(s): CG-931



Key Milestone / Deliverable Schedule:

Project Start	TBD
Determine Best System	TBD+5 Mos.
Model System	TBD+10 Mos.
★ RDC System Demonstration	TBD+11 Mos.
Project End	TBD+12 Mos.

★ Indicates RDC product.

Project #: 2013.017	Tier: 3	RDC POC: Mr. Dave Larson 860-271-2845	CG-926 Domain Lead: CDR Albert Antaran 202- 475-3049
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Expected Benefit:

Improve operational performance/efficiency/mission execution/resiliency

Notes:

Scope not yet confirmed with CG-931 requestor (inquiries made).



Assess Electro-Optics/Infrared Sensors Utilizing Laser Gated Intensified (LGI) Technology

Mission Need: Thermal infrared and visible spectrum image intensification (I²) systems which can penetrate through obscurants.

Project Objectives:

- Analyze the known advantages/disadvantages of thermal infrared and I² cameras vs. LGI cameras through review of RDC Project 7723 and more recent literature. In addition, address eye safety of the LGI unit.
- Evaluate potential feasibility (technical, operational, time and costs) of augmenting or replacing current CG sensor systems with LGI systems.
- Recommend LGI sensor technologies for CG demonstration and evaluation of LGI optical resolution, depth of range, and target identification capability through multiple atmospheric conditions.

Sponsor: CG-761

Stakeholder(s):



Key Milestone / Deliverable Schedule:

Project Start	TBD
Review & Analyze LGI Sensor Technology.....	TBD+3 Mos.
★ Feasibility Assessment of LGI Technology for CG Applications.....	TBD+7 Mos.
IPT Concurrence to Proceed with LGI Evaluation Recommendations	TBD+8 Mos.
★ Recommendations for Demonstration and Evaluation of LGI Technologies.....	TBD+10 Mos.
Project End	TBD+12 Mos.

★ Indicates RDC product.

Project #: 2013.025	Tier: 3	RDC POC: Dr. Andrew Niccolai 860-271-2670	CG-926 Domain Lead: CDR Tung Ly 202-475-3011
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Expected Benefit:
Add to general R&D knowledge base

Notes:

Selection & Testing of Solid State RADAR for VTS

Mission Need: A replacement for end of life VTS magnetron RADARs.

Project Objectives:

- Obtain quantitative data to enable the Coast Guard to decide whether to replace fielded, end of life magnetron-based RADARs with solid state RADARs or other magnetron-based RADARs.
- Provide a cost-benefit analysis on the purchase and long-term support cost of solid state RADARs relative to magnetron-based RADARs.

Sponsor: CG-64

Stakeholder(s): CG-741, C3CEN



Key Milestone / Deliverable Schedule:

Project Start	TBD
Identify Key Elements.....	TBD+2 Wks.
Identify KPPs	TBD+1 Mo.
Test Plan Developed.....	TBD+5 Mos.
Test Range and Targets Reserved.....	TBD+5 Mos.
CRADA or Other Agreement Approved.....	TBD+9 Mos.
Testing Complete.....	TBD+14 Mos.
★ Cost-Benefit Analysis	TBD+18 Mos.
Project End	TBD+20 Mos.

★ Indicates RDC product.

Project #: 2013.007	Tier: 3	RDC POC: LT Jeff Young 860-271-2679	CG-926 Domain Lead: CDR Tung Ly 202-475-3011
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Expected Benefit:

Direct Product Line/Core Technology Support (Tech refresh, DMS, etc)

Notes:



Oil Spill Response Technology Gaps

Mission Need: A systematic review of recent events to establish the Government's next steps toward improving the effectiveness of the integrated government and Responsible Party response.

Project Objectives:

- Summarize capability gaps based on reviews of spills before DWH and other major U.S. spills since 2007, including DWH.
- Identify technology gap areas for CG and industry response.
- Identify capability gaps to be addressed by ongoing R&D.
- Prioritize the remaining capability gaps for funding and develop briefs to publicize the CG priorities to the spill response and oversight communities.

Sponsor: CG-5RI

Stakeholder(s): BSEE



Key Milestone / Deliverable Schedule:

Project Start	TBD
Identify Current Capability Gaps.....	TBD+10 Mos.
External Agency Reviews.....	TBD+12 Mos.
Prioritize Capability Gaps and R&D Investment...	TBD+15 Mos.
★ Priorities for Coast Guard Oil Spill Response Technology Investment.....	TBD+16 Mos.
Project End	TBD+18 Mos.

★ Indicates RDC product.

Project #: 2011.024	Tier: 3	RDC POC: Mr. Chris Turner 860-271-2623	CG-926 Domain Lead: Mr. Shannon Jenkins 202-475-3490
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Expected Benefit:
Add to general R&D knowledge base

Notes:

Develop an Environmentally Friendly Buoy Mooring System

Mission Need: A buoy mooring system situated in environmentally sensitive areas that would avoid directly damaging nearby delicate plants and animals in the benthic zone.

Project Objectives:

- Conduct a market research to determine alternatives to traditional buoy mooring systems.
- Use BAA to develop and test prototypes and acquire final report to determine best available technology for environmentally sensitive areas.

Sponsor: CG-5PW

Stakeholder(s):



Key Milestone / Deliverable Schedule:

Project Start	TBD
Conduct Market Research.....	TBD+4 Mos.
Brief Market Research Results to Sponsor.....	TBD+6 Mos.
★ Prototype Design Report.....	TBD+16 Mos.
Award Contracts for Prototype Development and Testing.....	TBD+19 Mos.
Prototype Testing.....	TBD+26 Mos.
★ Prototype Final Report.....	TBD+41 Mos.
Project End	TBD+42 Mos.

★ Indicates RDC product.

Project #: 2013.014	Tier: 3	RDC POC: Mr. Alexander Balsley 860-271-2854	CG-926 Domain Lead: Mr. Jaurin Joseph 202- 475-3493
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Expected Benefit:

Improve operational performance/efficiency/mission execution/resiliency

Notes:



Detect DGPS/GPS Position/Time Anomalies through NAIS

Mission Need: An active automated GPS signal monitoring capability to identify local unavailability of GPS signals using information from the NAIS.

Project Objectives:

- Investigate and develop methods to identify GPS outages and signal interference based upon information available from the NAIS . The methods should be able to identify both local and broad geographic area GPS issues.
- Demonstrate the methods with an alpha level prototype, identify system architecture, interface standards, and middleware (if necessary) to enable detailed outage information with notification to NAVCEN.

Sponsor: CG-761

Stakeholder(s): CG-257, CG-NAV, NAVCEN, CAIT-SC



Key Milestone / Deliverable Schedule:

Project Start TBD

★ **Report Investigation Findings on Method(s) TBD+8 Mos.**

★ **Prototype Automated Notification Tool..... TBD+18 Mos.**

Project End TBD+21 Mos.

★ Indicates RDC product.

Project #: 2013.021	Tier: 3	RDC POC: Mr. Scott Fields 860-271-2805	CG-926 Domain Lead: CDR Tung Ly 202-475-3011
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Expected Benefit:

Direct Product Line/Core Technology Support (Tech refresh, DMS, etc)

Notes:



Existing Wrecks Potential Spill Response Assessment

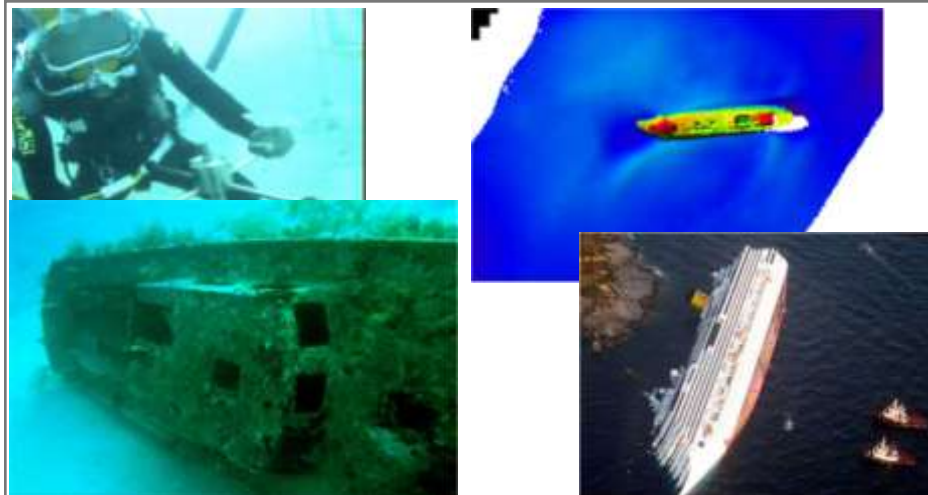
Mission Need: Decision tools and recovery/mitigation tools for responding to oil in submerged wrecks.

Project Objectives:

- Develop decision making tools for Federal On-scene Commander (FOSC) to aid in response planning for oil in submerged vessels.
- Develop suite of hardware that can be used for assessment and mitigation, building on industry's past efforts.

Sponsor: CG-5RI

Stakeholder(s): BSEE



Key Milestone / Deliverable Schedule:

Project Start	TBD
★ Tools Assessment	TBD+7 Mos.
FOSC Tools Development.....	TBD+19 Mos.
Project End	TBD+31 Mos.

Project #: 2013.022	Tier: 3	RDC POC: Mr. Kurt Hansen	CG-926 Domain Lead: Mr. Shannon Jenkins
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Expected Benefit:

Improved Doctrine/CONOPs/TTPs

Notes:

★ Indicates RDC product.



NAIS “Bear-Proof” Box for Alaska

Mission Need: A unique design for NAIS for the more remote areas of Alaska.

Project Objectives:

- Conduct market research in potential off the shelf solutions and university research efforts of related work such as University of Hawaii Center for Island, Maritime, and Extreme Environment Security (CIMES).
- Develop a design for the box, complete with an RF link budget, a power budget, circuit designs, wiring diagrams, and equipment list.
- Assemble the components into a working prototype and propose an Arctic test location.

Sponsor: CG-761

Stakeholder(s): CAIT-SC, DHS S&T (OUP)



Key Milestone / Deliverable Schedule:

Project Start	TBD
★ “Bear-Proof” Box Design Report.....	TBD+9 Mos.
★ Prototype Summary Report.....	TBD+20 Mos.
Project End	TBD+21 Mos.

★ Indicates RDC product.

Project #: 2013.029	Tier: 3	RDC POC: Mr. Wayne Buchanan 860-271-2759	CG-926 Domain Lead: Ms. Mary Kate Watts 202-475-3724
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Expected Benefit:

Improve operational performance/efficiency/mission execution/resiliency

Notes:



CGMOES Next Generation

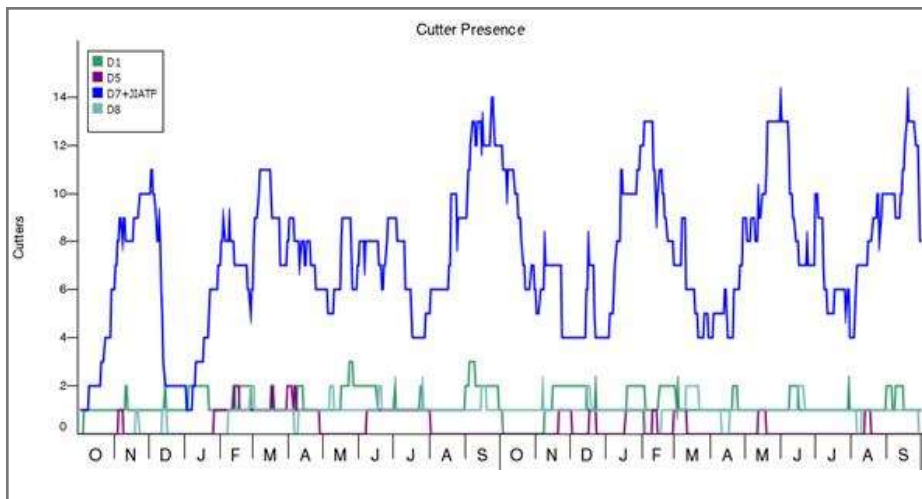
Mission Need: An easy-to-use, streamlined capability for routine Coast Guard-wide asset allocation and force structure decision support.

Project Objectives:

- Develop an organic capability to support quick turnaround answers to senior leadership force structure questions driven by Congress regarding: eliminations of asset classes, changes in mission priorities, etc.
- Reduce the time and costs involved with current modeling approaches.
- Improve the defensibility of model-based decision support system (DSS).

Sponsor: CG-771

Stakeholder(s): LANTAREA, CG-926, M&S Council



Key Milestone / Deliverable Schedule:

Project Start	TBD
Phase I Feasibility Study.....	TBD+13 Mos.
★ Business Case for Next Generation CGMOES...	TBD+13 Mos.
Phase II Develop Proof of Concept.....	TBD+23 Mos.
★ Proof of Concept Demonstration and Results....	TBD+23 Mos.
<u>Phase III Implementation of Next Generation</u>	
CGMOES at RDC.....	TBD+13 Mos.
Transition to Production System.....	TBD+33 Mos.
★ Verification and Validation Rpt for Accreditation.....	TBD+35 Mos.
Project End	TBD+36 Mos.

★ Indicates RDC product.

Project #: 2012.033	Tier: 3	RDC POC: Ms. Kathleen Shea Kettel 860-271-2770	CG-926 Domain Lead: LT Derek Storolis 202-475-3492
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Expected Benefit:
Influence Mission Support efficiencies

Notes:

Communication Networks Modeling and Simulation Tool

Mission Need: A Comms Network M&S tool that can support Acquisition Decisions.

Project Objectives:

- Identify critical demand infrastructure and requirements.
- Complete Market Research to identify candidate modeling tools and net-worthiness.
- Select and acquire most cost-effective modeling tool.
- Develop model architecture, interfaces, and libraries.

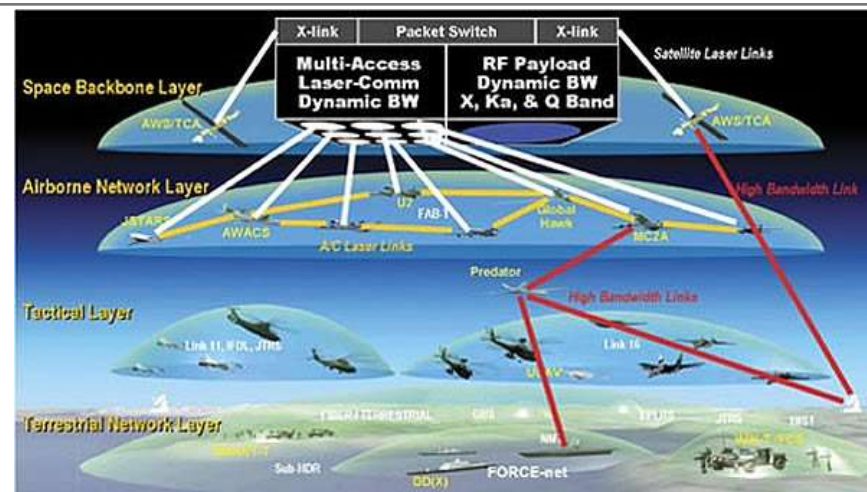
Sponsor: CG-64

Stakeholder(s): CAIT-SC

Key Milestone / Deliverable Schedule:

Project Start	TBD
Requirements/Infrastructure Identification.....	TBD+3 Mos.
★ Market Research/Net Readiness Report.....	TBD+5 Mos.
Tool Downselect and Acquisition.....	TBD+6 Mos.
★ Model Development Complete.....	TBD+12 Mos.
VV&A Complete.....	TBD+13 Mos.
Project End	TBD+13 Mos.

★ Indicates RDC product.



Project #: 2013.009	Tier: 3	RDC POC: CDR Sean Lester 860-271-2880	CG-926 Domain Lead: LT Derek Storolis 202-475-3492
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Expected Benefit:

Direct Acquisition Support
(MAR, MNS, CONOPS, ORD, AA, LCCE, T&E, etc)

Notes:

Cocaine Purity and Signature Test

Mission Need: More detailed field analyses to boost investigative efforts and increase awareness of maritime smuggling techniques and routes.

Project Objectives:

- The objective of this project is to create/develop a tool, for use by Boarding Team Members during maritime interdictions, capable of testing cocaine purity, signature (i.e., source country and processing location), and cutting agents (PSC/A).

Sponsor: CG-5RE

Stakeholder(s):



Key Milestone / Deliverable Schedule:

Project Start	TBD
“Lab” Tests Converted to “Maritime/Field” Tests..	TBD+9 Mos.
Begin Field Tests & User Suitability Assessment	TBD+14 Mos.
Complete Field Tests & User Suitability Assessment.....	TBD+18 Mos.
★ Final Report with PSC/A Kit Recommendation....	TBD+12 Mos.
Project End	TBD+22 Mos.

★ Indicates RDC product.

Project #: 2013.026	Tier: 3	RDC POC: Mr. Brian Dolph 860-271-2817	CG-926 Domain Lead: LCDR Anthony Erickson 202-475-3748
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Expected Benefit:

Improve operational performance/efficiency/mission execution/resiliency

Notes:



Operational Quality Assurance System (OQAS)

Mission Need: A quality assurance program for boat performance monitoring.

Project Objectives:

- Develop a dedicated, affordable, reliable, light weight data acquisition system to record and store boat speed and direction.
- Develop a Quality Assurance System to analyze data and provide easy access to station personnel and command leadership.

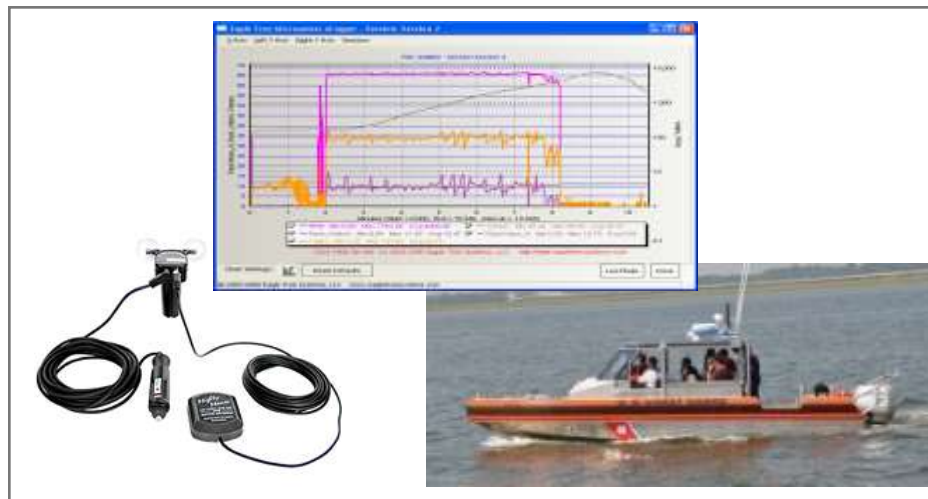
Sponsor: CG-731

Stakeholder(s): CG-1134

Key Milestone / Deliverable Schedule:

Project Start	TBD
Develop Prototype	TBD+1 Mo.
Develop QA System.....	TBD+3 Mos.
Install and Demonstrate.....	TBD+6 Mos.
★ OQAS Project Report	TBD+10 Mos.
Project End	TBD+11 Mos.

★ Indicates RDC product.



Project #: 2013.027	Tier: 3	RDC POC: Mr. Jason Story 860-271-2833	CG-926 Domain Lead: LCDR Anthony Erickson 202-475-3748
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Expected Benefit:

Influence Mission Support efficiencies

Notes:

Underwater Latent Fingerprinting

Mission Need: Ability to collect latent fingerprints from vessels or evidence that have been exposed or submersed in sea water.

Project Objectives:

- Determine if latent fingerprints be pulled off a submerged object (i.e., SPSS, fiberglass, aluminum, wooden hull, contraband) and the best process for doing so.
- Determine if latent fingerprints be pulled off a salt water exposed object (i.e., SPSS, fiberglass, aluminum, wooden hull, contraband) and the best process for doing so.
- Provide an analysis of the effects (e.g., exposure time) of salt water on latent finger prints.

Sponsor: CG-761

Stakeholder(s): CG-2A

Key Milestone / Deliverable Schedule:

Project Start	TBD
Design Testing.....	TBD+5 Mos.
Conduct Testing.....	TBD+8 Mos.
★ Test Report	TBD+10 Mos.
Project End	TBD+11 Mos.



Submerged Weapon Recovery

Project #: 2013.030	Tier: 3	RDC POC: Mr. Brian Dolph 860-271-2817	CG-926 Domain Lead: LCDR Anthony Erickson 202-475-3748
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Expected Benefit:

Add to general R&D knowledge base

Notes:

★ Indicates RDC product.

