

Rescue 21 Enhancements

Saving Lives in the 21st Century

The Rescue 21 system is an advanced maritime communications system for coastal water ways that provides a command and control infrastructure for all U.S. Coast Guard (USCG) search and rescue (SAR) and homeland security missions.

The system is operational and fulfilling its mission of "Saving Lives in the 21st Century" along the Atlantic, Gulf Coast, Pacific Northwest and Northern California regions. Full coverage along the coastline of the continental United States, Great Lakes, Guam, Hawaii and Puerto Rico is scheduled for completion in 2012.

Rescue 21 is currently "standing the watch" with the dedicated men and women of the Coast Guard along the U.S. coastline.

General Dynamics believes technical enhancements to the Rescue 21 system will further aid the watchstander and improve coordination through interoperability with other agencies, thus allowing the Coast Guard to improve its mission execution.

Technical Enhancements to Rescue 21 Can Aid the Watchstander in Performing Their Mission.

UHF Helicopter.

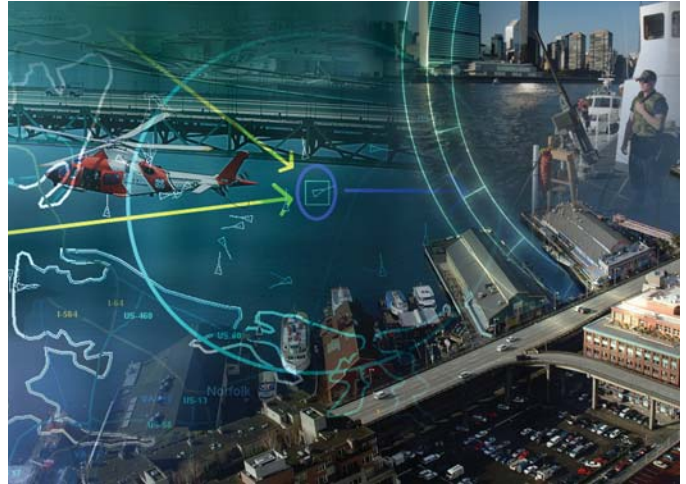
Currently, Rescue 21 provides VHF and UHF communication to USCG helicopters, when equipped with a radio in the Rescue 21 VHF/UHF frequency bands. The Rescue 21 system could be enhanced by adding a dedicated UHF radio to the Rescue 21 towers or by expanding the UHF frequency band on existing radios to accommodate specific USCG UHF frequencies. This would then provide the capability for the Rescue 21 operator to immediately dispatch SAR plans to the helicopter crew and provide updates while enroute to the rescue.

Automatic Distress Call Detection using Speech Recognition.

Rescue 21 could be modified to integrate a Commercial Off-the-Shelf speech recognition product to automatically detect distress callers. This would reduce the amount of audio deciphering by the USCG operator from a live audio transmission to improve operator awareness. Key words in multiple languages could also be programmed to alert the watchstander.

Integrated SAROPS.

Currently, lines of bearing and position locations generated by Rescue 21 are transferred to the Coast Guard's SAROPS planning tool via "sneaker net." Rescue 21 is being modified to interoperate with their SAROPS program to allow for easy and accurate exchange of data and display of information.



MISLE Database Connectivity.

Currently, Rescue 21 only pulls a vessel's Maritime Mobile Service Identity (MMSI) number from the Coast Guard's Marine Information for Safety and Law Enforcement (MISLE) database. Rescue 21 data queries to the MISLE database could be automated and increased to assist the Rescue 21 operator fill in data fields for emerging and ongoing SAR cases. This would reduce operator workload and increase data input accuracy.

406 EPIRB.

Currently, Rescue 21 supports distress beacons from 121.5 MHz to 243 MHz, which can only be received within the Rescue 21 footprint. Rescue 21 could be improved to interface with satellite beacon distress calls using 406 MHz. The integration of the distress beacon would be done through an IP network from the satellite base station to the Rescue 21 sector for display within the Rescue 21 system.

Wireless Operator Accessories.

Currently, Rescue 21 provides conventional Land Mobile Radio (LMR) communication from portable VHF and UHF devices and PBX landline systems. A future enhancement to Rescue 21 would integrate the use of communication protocols from a wireless phone/personal digital assistant (PDA) or "smartphone" (e.g., Blackberry®). The wireless device could perform as a stand-alone operator workstation that would allow a commander to add/modify Rescue 21 circuits and communicate with any USCG personnel or external caller within the Rescue 21 coverage footprint.

System Enhancements Can Also Improve Coordination Through Interoperability with Other Federal, State and Local Law Enforcement Agencies and First Responders.

State and Local.

Currently, Rescue 21 provides Radio Frequency (RF) communications in the Federal and Public Safety VHF/UHF bands within line-of-sight (LOS) of Rescue 21 towers to portable communication devices such as vessels, handheld radios, and mobile vehicle units. The Rescue 21 system could be enhanced to have a dedicated radio that would monitor federal and local frequencies without the need for dedicated maritime radios to change frequencies. Further, Rescue 21 could be integrated with the Department of Justice's Integrated Wireless Network (IWN) to provide multi-agency interoperability to allow communication to other state and local providers using trunked radio technology.

DHS Secure.

Currently, Rescue 21 provides Data Encryption Standard (DES) for sensitive, but unclassified data over the VHF/UHF digital communication channels. The Rescue 21 system is currently being enhanced with the Advanced Encryption Standard (AES) with block lengths of 256 bits.

Cell Phone Capability.

Currently, Rescue 21 provides cell- and land-based communication through standard public PBX landline systems. Rescue 21 allows cell- and land-based phone patching to Rescue 21 VHF and UHF portable radios via Rescue 21 towers. Rescue 21 could be enhanced to interface with IWN to provide multi-agency interoperability through a common net-centric backhaul, such as DHS OneNet.

GENERAL DYNAMICS
C4 Systems

8201 E. McDowell Road, MD H2099 • Scottsdale, AZ 85257 • Tel 480-726-1048 • Toll Free 877-449-0600
Website: www.gdc4s.com/rescue21 • Email: info@gdc4s.com

© 2010 General Dynamics. All rights reserved. General Dynamics reserves the right to make changes in its products and specifications at anytime and without notice. All trademarks indicated as such herein are trademarks of General Dynamics. All other product and service names are the property of their respective owners. ® Reg. U.S. Pat. and Tm. Off.

D-R21 Enhancements-3-0110