



Allied Technology Group, Inc.

Engineering and Technical Services

Scientific Data Network (SDN) Program and Project Overview



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Notional Requirements

- Provide assistance for the management of shoreside and shipboard electronics, information and science systems
- **Science Systems Operational Support:**
 - Assist the Coast Guard in identifying and acquiring technicians experienced in the calibration, set-up and operation of each shipboard science system
 - Provide for pre-deployment system set-up and testing to ensure the systems are fully operational
 - Schedule and track sensor maintenance and the calibration of sensors
 - Provide underway technical support
- **Science Data Network System Management:**
 - Provide network / systems management, periodic network / equipment grooms, configuration management and on-site technical support
 - Maintain the computer network used for the acquisition, processing and archiving of underway scientific data and E-mail services for the onboard scientists
 - Manage the SDN to support navigation, acoustic, meteorological and oceanographic electronics



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Science Data Network System Management (Continued):

- Provide configuration control and support of underway E-Mail using satellite communications
- Provide SDN familiarization/operational training for the crew and deploying scientists
- Provide network / systems management, periodic network / equipment grooms, configuration management and on-site technical support
- **Underway Science Systems Support:**
 - Provide services from initial systems checks to final equipment set-up for the deployed science users
 - Provide ship's force / deployed science users support for the day to day operation of the onboard science data systems





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Shipboard Science Systems Include:

- **Winch wire out and tension data**
 - Science Winch Data Acquisition System (DAS) - (*Windows XP*)
- **Acoustics**
 - RDI 150 KHZ Acoustic Doppler Current Profiler (ADCP) - (*Windows XP*)
 - RDI 75 KHZ Acoustic Doppler Current Profiler (ADCP) - (*Windows XP*)
 - SeaBeam 2112 Bottom Mapping Sonar - (*IRIX, LynxOS, RedHat Linux*)
 - BATHY 2000 Sub-Bottom Profiler - (*DOS/Windows 98 - to be upgraded to Windows XP*)
 - Knudsen Sub-Bottom Profiler - (*Windows XP*)
- **Oceanographic**
 - Expendable Bathythermograph - (*Windows 98 - to be upgraded to Windows XP*)
 - Conductivity/Temperature/Depth (CTD) Rossette System - (*Windows XP*)
 - Integrated Bridge Voyage Management System (VMS)
 - Seabird Thermosalinograph - (*Windows XP*)
 - Fluorometer
- **Meteorological**
 - Terascan – Sun Ultra SPARC - *starting with Nov 2003 missions: PC-based, RedHat Linux*
 - R. M. Young platinum air temperature sensor
 - R. M. Young wind vanes
 - Barometer
- **ASCII Data Collection Software**
 - Science Computer System (SCS) - *NOAA-provided, Windows 2000 Server-based*



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Underway Systems Support Status

- **Ongoing SDN Technical Support/Science Liaison**
- **Hydrographic Data Acquisition Systems Support for USCGC Healy**
- **USCGC Healy, Northwest Passage**
- **Metadata Recording System Support**
- **SDN Systems Requirements Documentation**
- **CTD Assembly and Operational Testing for USCGC Polar Star**
- **Bottom mapping Sonar**
- **Science and Navigation Sensors**





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Underway Systems Support (Efforts to Date)

- **Ongoing SDN Technical Support/Science Liaison**
 - Senior systems engineer/analyst sailed on AEWS03 to support the SDN and provides shore-based support to the polar icebreakers when not at sea
 - **As a civilian, this resource provides much needed continuity to the ESU Seattle and the SDNs**
- **Issues/Concerns/Status to Date:**
 - All contractual obligations have been met with no unresolved issues
 - An additional engineer/analyst will be hired NLT 01 Apr 04 to provide rotational underway support
- **Supported By:**

Individuals hired directly by ATG with requirements from ESU Seattle

- Joseph DiGiovanni, jdigiovanni@pacnorwest.uscg.mil, (206) 217-6576
- TBD

Dates:

01 April 2003 - 01 April 2008



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Underway Systems Support (Continued)

- **Hydrographic Data Acquisition Systems Support for USCGC Healy**
 - Field test and validate the Hydrographic Data Acquisition Systems to include CTD Sensors, Thermosalinographs (TSG), XB(CT)D and Autosals
 - Install and test cast each of the new SBE 43 oxygen sensor and provide training to MST's
- **Issues/Concerns/Status to Date:**
 - All contractual obligations have been met with no unresolved issues
- **Supported By:**

Scripps Institution of Oceanography

8602 La Jolla Shores Drive

La Jolla, CA. 92037

Dates:

24 June 2003 - 01 July 2003



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Underway Systems Support (Continued)

- **USCGC Healy, Northwest Passage**
 - Prepare 75 & 150 kHz ADCP Systems for Data Collection
 - Develop a Meta Data scheme for the ADCP Systems to be implemented
 - Operate the 75 & 150 ADCP Systems to ensure continuous quality data
 - Maintain daily logs for the 75 & 150 ADCP Systems
- **Issues/Concerns/Status to Date:**
 - All contractual obligations have been met with no unresolved issues
- **Supported By:**

University of Delaware, College of Marine Studies

006 Robinson Hall

Newark, DE 19716-3501 USA

Dates: 16 August 2003 - 30 August 2003



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Underway Systems Support (Continued)

- **Metadata Recording System Support**

- Provide development and implementation of an electronic metadata recording system for the USCGC Healy underway data acquisition systems including SeaBeam, Knudsen, Bathy 2k, RDI 150 and 75 kHz ADCP, expendable probe deployment including XCTD and XBT, underway science seawater TSG and Fluorometer data and the full suite of meteorological data

- **Issues/Concerns/Status to Date:**

- All contractual obligations are current with no unresolved issues

- **Supported By**

Lamont-Doherty Earth Observatory, Columbia University

1210 Amsterdam Avenue

MC 2205

New York, NY 10027

Dates:

14 August 03 – 30 June 04



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Underway Systems Support (Continued)

- **SDN Systems Requirements Documentation**
 - Investigate, analyze and document the operational and functional system requirements of the Science Data Network (SDN)
- **Issues/Concerns/Status to Date:**
 - All contractual obligations are current with no unresolved issues
 - NOTE: Input is sought from the science community to help identify SDN requirements, current limitations, and future needs.
- **Supported By**
Syntek Technologies, Inc.
4301 North Fairfax Drive
Arlington, VA 22203

Dates:

01 October 03 – 13 February 04



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Underway Systems Support (Continued)

- **CTD Assembly and Operational Testing for USCGC Polar Star**
 - Assist in the CTD assembly and operational testing
 - Assist in testing of old CTD and winch via shipboard deepwater CTD test Casts
 - Train MST's during transit during CTD Casts
- **Issues/Concerns/Status to Date:**
 - All contractual obligations are current with no unresolved issues
- **Supported By**
University of Alaska, Fairbanks, Marine Operations
201 Railway Avenue
Seward, AK 99664

Dates: 30 October 2003 – 11 November 2003



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Underway Systems Support (Continued)

- **Bottom mapping Sonar**
 - Hydro test the wells
 - Evaluate the condition of the projectors, hydrophones and wet cables
 - Supervise the installation of the new SeaBeam Orange acoustic windows
- **Issues/Concerns/Status to Date:**
 - All contractual obligations are current with no unresolved issues
 - Planning is underway to start task on 01 Dec 2003 at Todd Shipyard, Seattle (USCGC Healy)
- **Supported By**
L-3 Communications SeaBeam Instruments
344 Vanderbilt Avenue
Norwood, MA 02062

Dates:

01 December 2003 – 15 December 2003



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Underway Systems Support (Continued)

- Science and Navigation Sensors
 - Assist with the Quality Assurance (QA) for the SeaBeam transducer array precision survey
 - Assist with identifying the sensors to be surveyed, reference marks and locations of benchmarks
- **Issues/Concerns/Status to Date:**
 - All contractual obligations are current with no unresolved issues
 - In final stages of establishment of subcontract, Todd Shipyard, Seattle (Healy)
- **Supported By**
Lamont-Doherty Earth Observatory, Columbia University
1210 Amsterdam Avenue
MC 2205
New York, NY 10027

Dates: 10 November 2003 – 31 January 2004



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Systems Support Acquisitions to Date:

- Carousel Water Sampler, Sea-Bird Electronics
- Audio-Visual Equipment, B & H Photo Video
- Issues/Concerns/Status to Date:
 - Carousel Water Sampler delivered 15 September 2003
 - Audio Visual equipment delivered 14 July 2003





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