

NSWC/SEAFAC site using custom WinchDAC software

Measurement Technology NW was recently asked to develop a custom multi-winch version of our WinchDAC software for the Navy's Southeast Alaska Acoustic Measurement Facility (SEAFAC). Naval Surface Warfare Center (NSWC) project engineer Todd Kjormoe explains the SEAFAC system.

"We have two permanently moored barges, one on each side of the

Tension, Speed, and Payout values for all four of our winch stations."

3-sheave running line tensiometers (with count and force sensors) installed at each winch provide line tension and payout signals. These signals are processed by dedicated LCI-100 local displays, allowing parameter data to be viewed both at the winches and (via isolated RS-485

serial output) at the Master and Remote PC computer stations running WinchDAC/SEAFAC software. Data logging can be set up at both Master and Remote stations for maximum data integrity. Data is saved in a .csv file format, easily imported into Excel for post-analysis.

The Southeast Alaska Acoustic Measurement Facility (SEAFAC) is the Navy's only West Coast asset for making high fidelity passive acoustic signature measurements.

SEAFAC conducts RDT&E evaluations to determine the sources of radiated acoustic noise, to assess vulnerability, and to develop quieting measures.

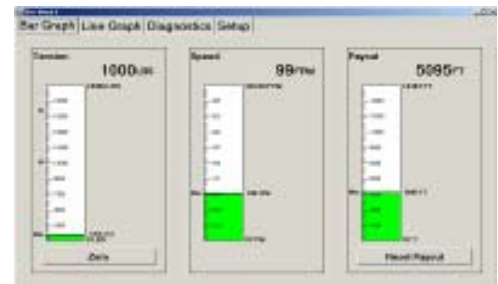
submarine to be tested. Each barge has two winch stations, one forward and one aft. Prior to testing, cables from these winch stations are secured to the submarine. Each winch station contains a winch, running line tensiometer and LCI-100 local display from MTNW. All four of the LCI-100's are interconnected over an RS-485 network."

"Currently", added Todd, "we are using two networked computers with new WinchDAC/SEAFAC software, one located on the barge and the other at a shore facility. One or more of our computers can be connected at any time - the first computer that comes on-line is designated as the 'Master'. If another computer comes on-line it can either assume the role of 'Remote' or, with authorization, take over as the Master. If the Master computer goes off-line for any reason, the Remote computer automatically takes over as the new Master so that data logging and monitoring can continue uninterrupted. The software allows us to monitor in real-time the

Operators can quickly configure the winches and on-screen interface by adding or deleting active winches, images, or graphs per the specific test being run. Parameters for all winches are displayed at the same time on the main runtime screen, and additional winch details for each active LCI-100 can be viewed by simply clicking on the screen's winch image.

According to Todd, "Collaboration with MTNW during the development phase led to some particularly useful features, including the three separate windows available to show Tension, Speed and Payout respectively in a comparative bar-graph format - very much appreciated when equality in parameters is needed."

"Prior to operational use, I tested the system for a week straight and noted no drop-outs", Todd verified. "We have also had the opportunity to use the new system operationally. So far, the WinchDAC/SEAFAC software has proven robust and easy to use."



Minimum System:

- Windows 98 or NT
- Pentium processor
- SVGA color display, (1024 x 768)
- 32 MB of RAM
- 5 MB hard disk space (more required for data logging)
- 9 Pin serial port

Recommended System:

- Windows 2000 or XP
- Pentium III processor
- SVGA color display, (1024 x 768)
- 128 MB of RAM
- 5 MB of hard disk space (more required for data logging)
- 9 Pin serial port