DATE: November 8, 2002

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SUBJECT: NAVCIITI Quarterly Report 22

RE: - Project 2.0   Visualization HCI and Collaboration
        - Task 2.1:   Command and Control Visualization

   SOW 2.1a.2: *Complete work on TALOSS bottom mapping algorithms,* ***Nov 02***

Background: Our objective is to provide a distributed collaborative network of graphical and device independent tools in a shared virtual environment, which can be used by Command and Control (C&C) personnel to gain a strategic advantage. Specifically we focus on the mission critical C&C interpretation of acoustic undersea data from towed arrays for the Naval Undersea Weapons Center (NUWC) using the CONRAY simulation models. These simulation models can be extended to "real-time" data acquisition systems. Under the direction of personnel from NUWC and the Naval Research Laboratory (NRL) we have identified a working prototype which we have successfully incorporated into our Device Independent Virtual Environment Re-configurable-Scalable-Extensible (DIVERSE) tool that works in stereo in the (C)AVE Automated Virtual Environment (CAVE), Immersive Work Bench (IWB), Immersive Desk (I-Desk), desktop workstation simulator, and Head Mounted Display (HMD) systems at the Virginia Tech Center for Virtual Environments and Visualization (CVEV). This effort has evolved and become part of the 3D Visualization Project called TALOSS, which was originally called SubVE.

Discoveries, Accomplishments, and Test Results as they relate to NAVCIITI SOW 2.1a.2

Most of the work during this quarter referred to handling the bathymetry. During this quarter handling of multiple-tile bathymetry was completed.

Now the system can asynchronously load map tiles and assemble them. Furthermore the user can move the map area around the map, to visualize new areas, and the position of all target and target tracks will be adjusted accordingly.

The bathymetry can be now shown as solid shaded surface or a wireframe, to display the "true" points and give the operator a sense of how faithfully the map represent the real bathymetry.

Also the bathymetry's vertical exaggeration can be dynamically altered to give the operator control over how much of the variation bathymetry is visible versus how much the of the contact's position and sizes are in correspondence to the bathymetry scale.

Plans for Next Quarter: *2.1a.3: Demostrate Virtual TALOSS software,* ***February 03***

What's next: NUWC will coordinate NUWC and NRL efforts and interact with VT as required. VT will maintain regular communications with NUWC regarding the development of the SubVE/TALOSS interface
Outstanding Issues: Previously assigned SOWs have postponed because of reassignment of coding bathymetry for the TALOSS project.