

# Automated System Testing

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### Abstract:

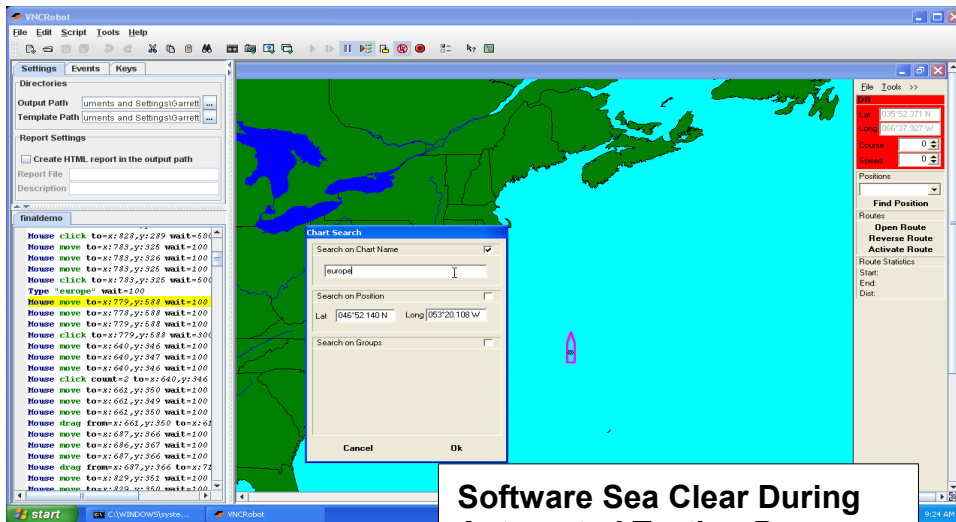
Companies often require software testing for projects. This process can take significant time if done manually, and this time costs the company. With automated software testing, companies do not need to spend human resources for manual testing. This project reduces the time spent in testing with the use of software that can be easily obtained. The project sets up a system in which one client system can test multiple applications on many server systems.

### Application Background:

**TightVNC:** The original purpose of TightVNC is to create a VNC environment. In this project it is used to connect a client system with a server system.

**VNCRobot:** The original purpose of VNCRobot was to access a server system through a client system. In this project it is used as a base for capturing the key strokes needed for automation.

**SeaClear:** The original purpose of SeaClear is to be a navigation program to help boats plan travel routes. In this project, this program is used as a demo software to apply the automation to ([www.sping.com/seaclear](http://www.sping.com/seaclear)).



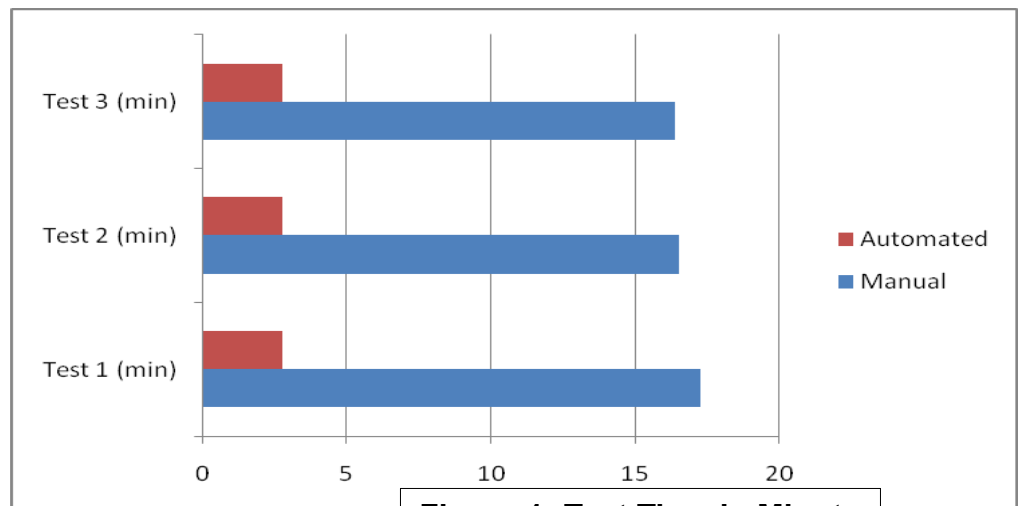
**Software Sea Clear During Automated Testing Process**

### Introduction:

The one client system implements various automation tools to accomplish the task. The practical use of this project is to reduce the time spent on testing while using automation tools that anyone can access. The project will show that automation can reduce the test time to an eighth of the original manual test.

### Results:

The automation of the testing did not compromise the accuracy of the testing in any way while successfully reducing test time. The data from the main test shows that the testing time was greatly reduced (figure 1) from an average of 16.5 minutes per manual test to an average of 2.75 minutes for each automated test.



**Figure 1: Test Time in Minutes**

### Analysis:

The data collected was from the application Sea Clear, which was chosen due to the variability that it could be tested to show the effect of automation. The manual test used a test case which is standard for testing software. Since the objective was to improve test time, after automating the test case, I had to manipulate the test code to be faster than how a human would perform. A complication with improving test speed was that a simple decrease in only wait time would result in failure to complete some tasks due to the speed of the computer. Therefore, I had to edit the code to remove unnecessary movement as well as edit test time to maximize the efficiency of the program.