

## Biweekly Report April 14, 2003 – April 25, 2003

Since the last two weeks, there have been some progresses in several areas of the project. The map component has added some extra features since the initial prototype and is now near completion. On top of that, the floor plan of the fifth floor have also been carefully measured and drawn using the Mapper and can now be properly displayed on the PDA screen to represent the robot's operating environment. In addition, both the joystick and sonar are being improved upon to better serve their function. Below we will discuss the progress of these several items and what more remain to be done.

For the mapping tool, initially the code is able to parse most of the directives in ActivMedia map files and display the corresponding map on the Pocket PC. Now the file I/O works correctly to use the standard ActivMedia world files. Brady also has reworked the map to use Gapi surfaces so that the application can easily control the map size and orientation. In addition, he uses a different robot indicator with a directional pointer and set it up to rotate based on direction traveled. He also implements a correction and a position button to show the position of the robot indicator and to make correction to it if it is in the wrong position.

For the floor plan, Mike has carefully measured the whole fifth floor and draw out the map using Mapper. Now the floor map can be properly displayed on the PDA screen to represent robot's precise location. Due to the ambiguity in the symmetry of the building, there is virtually no way to draw the map of the whole floor perfectly. The map is being drawn with great detail to limit error during navigation.

For the sonar, we now have a working sonar display being integrated with the mapping tool and joystick. Mike is currently helping Quang to improve on the sonar display so that it can display solid triangular shape and change it's color and length base on the sonar input received.

For the joystick, Matt has use macromedia fireworks to create a cool looking 3-D joystick image to be used to better represent the virtual joystick display. All it is left now will be making sure it can communicate properly with the rest of the application.

In conclusion, there are still a few things need to be done. Matt has already begun to work on the integration of the application components (ARIA, joystick, map, sonar) into a functional application. He is also working on the serial communication between the PDA and the robot. Brady has also been looking into the DLL code to see if it needs any modification. Mike is helping Quang to further improve on the sonar display. Next week's meeting (April 28) should have an improved integrated prototype of the application.