Project #	Project Name	Project Track	Project Family
P11015	Mobile Landmark Identification	Local Navigation	Interact with the Environment
Start Term	**Team Guide**	**Project Sponsor**	**Doc. Revision**
2010-2	Dr. DeBartolo	RIT	1.2

Project Description

Project Background:

The goal of this project is to design a portable device that assists visually impaired and blind persons (VIBP) to select a bus and find the exact location of that bus at a bus stop. This device will ultimately enable the VIBP to board their chosen bus with minimal outside assistance. The first phase of the project will primarily focus on the interfacing of the tagging technology chosen with the user interface selected. The combined system will be able to locate buses and guide visually impaired and blind users to the correct buses.

Past projects include the CE project that predicted arrival times for buses by utilizing web-enabled GPS technology.

Projects *P11016*, the *Intra-building Navigation Device*, and *P11017*, the *Tactile Interface for the Visually Impaired*, are both running in parallel to this project and in the long term will be integrated into one device that can perform all three tasks.

Problem Statement:

Blind and visually impaired individuals face difficulties identifying the correct buses to get on at a bus stop. This team aims to enable those individuals to identify the correct buses on their own within a shorter time frame.

Objectives/Scope:

1. Identify and locate buses within a certain range of the bus stop.
2. The device must be capable of communicating clearly with the user and give clear directions to guide the user to the correct bus.
3. The device must convey real-time information about bus arrivals.

Deliverables:

- A prototype of a durable and portable device or device interface that communicates with a blind or a visually impaired individual.
- The prototype must be able to process user input and output information to the user about the location of the desired bus.
- Documentation, which includes the initial design, project planning, technical specifications and drawings.

Expected Project Benefits:

- RIT will create a more diverse environment while enabling the visually impaired and blind individuals to be more independent.

Core Team Members:

Tracey Baird – Supporting Engineer
Manuswin Chansakulporn –Secretary
Michael Delles – Interface Engineer
Irem Gultekin – Lead Engineer
Mohamed Mandeel – Project Manager

Strategy & Approach

Assumptions & Constraints:

1. The interface cannot be visual.
2. One specific identification method will be used.
3. The project must be completed within 22 weeks.
4. The budget limit is $1500.
5. The individual is capable of getting to the bus stop by themselves.
6. The individual has minimal additional sensory loss.
7. The concept should have the ability to be integrated beyond the RIT campus, both physically and financially.

Issues & Risks:

- Getting access to information from the RGRTA.
- Risks that result from system inaccuracies.
- Most accurate tagging and location detection method.
- Clearly and concisely communicate directions to the user.