

NavPal Smartphone-Based Navigation Aid

Enabling safe and independent navigation in unfamiliar indoor environments

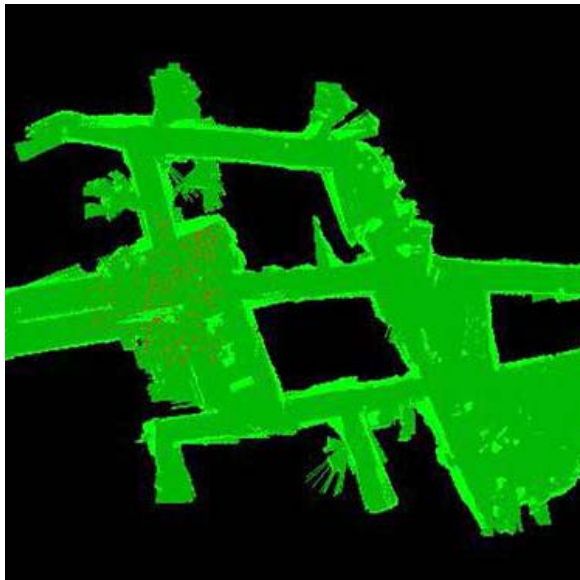
- NavPal seeks to offer a complete solution for indoor navigation accessible to visually impaired adults
- Provides an affordable, personalized, and innovative solution based on needs assessment with visually impaired people and local partner organizations



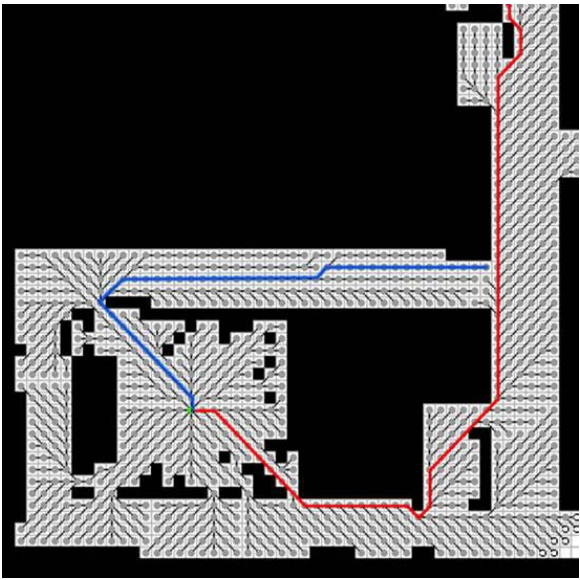
Prototype NavPal smartphone application for indoor navigation

Project components

- Accessible web tool with building and layout information for pre-trip planning of visits to select indoor environments
- Flexible interface for NavPal smartphone app that is accessible to sighted and visually impaired users
- Effective route planning catered to accommodate constraints of visually impaired adults and to operate efficiently on a smartphone
- Robust localization methodologies for GPS-denied indoor environments



Localization



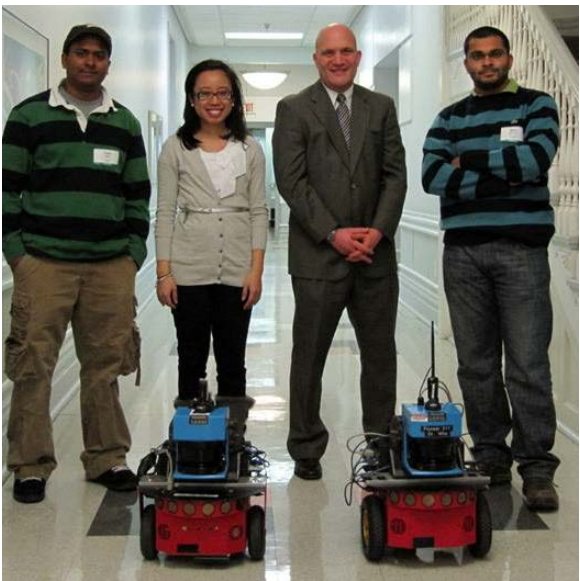
Route Planning



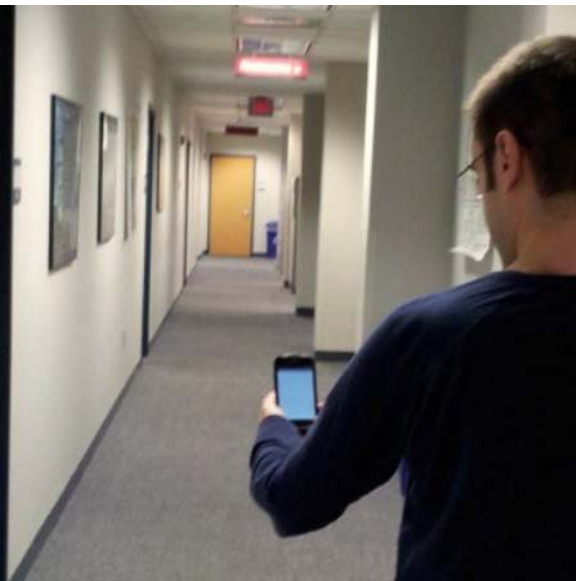
User Interface



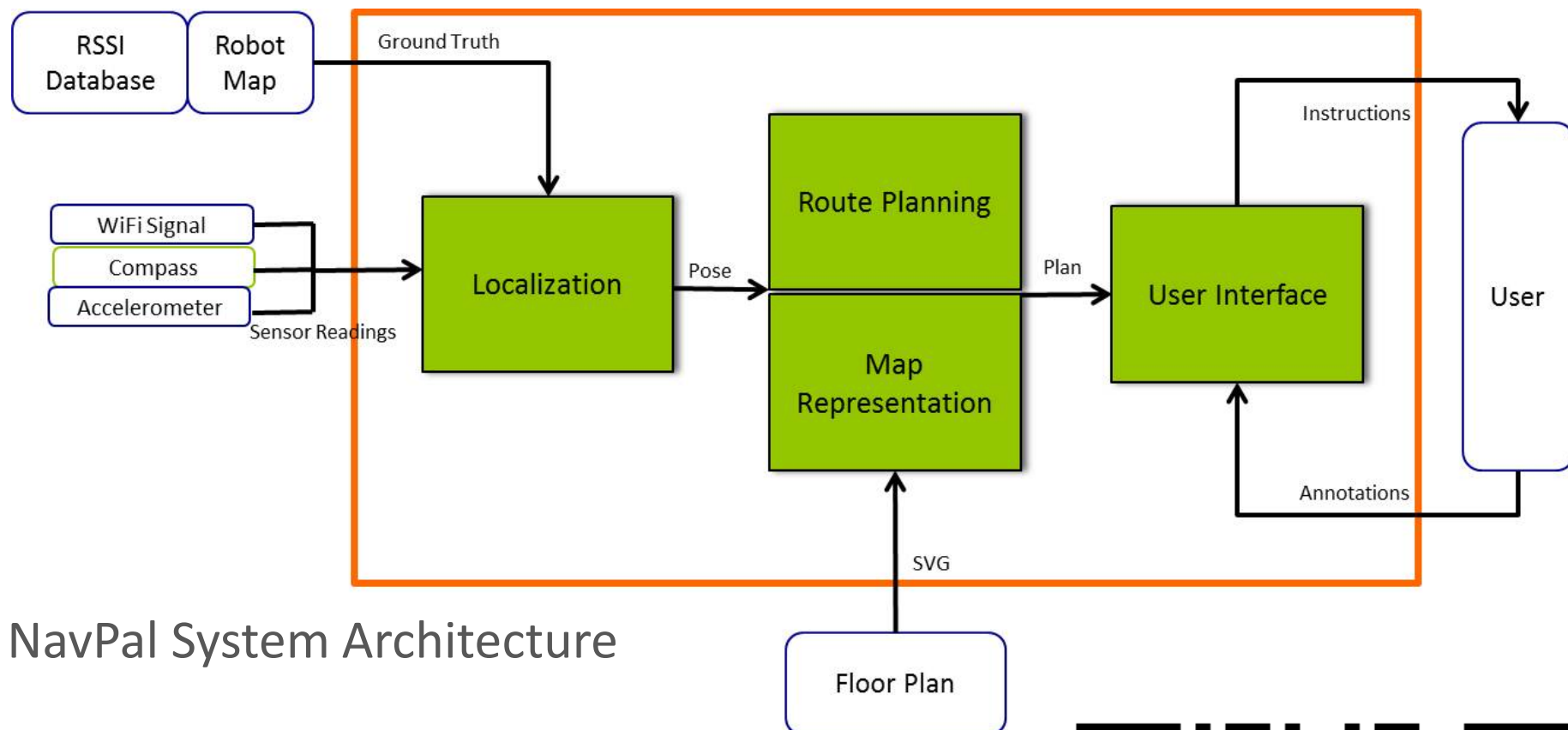
User feedback



Mapping with robots



Testing app at CMU



NavPal System Architecture

Partners



Sponsors

