Project Plan
Whirlpool Indoor Maps
The Capstone Experience

Team Whirlpool
Steph Brown
Jallal Elhazzat
Zoe Hayes
Gregory Richard
Christian White

Department of Computer Science and Engineering
Michigan State University
Fall 2015
Functional Specifications

• Indoor Mapping of Large Buildings
  ▪ Locate and book

• Google Integration
  ▪ Authenticate and navigate

• Directions/Navigation
  ▪ Indoor & outdoor
Functional Specifications

• Search
  ▪ Conference rooms & buildings

• Filter
  ▪ Capacity, availability, and logistics

• Favorites
  ▪ Fast & convenient
Design Specifications

- **Home Screen**
  - Calendar & relevant rooms
- **Search Screen**
  - Advanced filter
- **Room Screen**
  - Location & related info
- **Directions**
  - Current location & landmark
Screen Mockup: Home Screen
Screen Mockup: Search Screen

- Building
  - Riverview Hub 129
  - GHQ N253
  - GHQ N255
  - BHTC S200
  - Hilltop 211
  - Hilltop 211 8818
  - Hilltop 211 6006

- Capacity
  - Riverview Hub 129
  - GHQ N253
  - GHQ N255
  - BHTC S200
  - Hilltop 211
  - Hilltop 211 8818
  - Hilltop 211 6006

- Video Conferencing
  - Riverview Hub 129
  - GHQ N253
  - GHQ N255
  - BHTC S200
  - Hilltop 211
  - Hilltop 211 8818
  - Hilltop 211 6006

- Presenting Options
  - Riverview Hub 129
  - GHQ N253
  - GHQ N255
  - BHTC S200
  - Hilltop 211
  - Hilltop 211 8818
  - Hilltop 211 6006

- Available Now
Screen Mockup: Room Screen
Screen Mockup: Directions
Screen Mockup: Directions
Technical Specifications

• Android/iOS application

• Google Authentication and maps SDK

• Micello API for indoor mapping and turn by turn directions

• Real time updating and pulling of facility room information
System Architecture
System Components

• Hardware Platforms
  ▪ Google Cloud
  ▪ Whirlpool Database

• Software Platforms / Technologies
  ▪ xCode, Android Studio
  ▪ Swift, Java, HTML, JavaScript
  ▪ Phone Geo-location
Testing

• Test-driven development (TDD)
  • Swift & Java

• Android application
  ▪ Nexus 7, Samsung S5, Samsung S6

• iOS application
  ▪ iPhone 5s, iPhone 6, iPad
Risks

• Geo-locating within buildings.
  ▪ GPS, floors, and the approximation
  ▪ Mitigation: WIFI (for now)

• Implementing Micello API and SDK
  ▪ Micello: Javascript for IOS, SDK Android
  ▪ Mitigation: Webviews

• Turn by turn navigation
  ▪ Challenge with the indoor positioning
  ▪ Mitigation: User select a starting point

• Google map integration with Micello
  ▪ Switching between the two maps slows response time
  ▪ None