

CS 4351: Requirements Engineering

# WRS Evolution

Requirements Elicitation

whoosh 

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## Revision History

Date	Version	Changes	Editor
10/5/15	1.0	Creation	J. Nguyen
10/13/15	1.1	Preliminary Requirements, Issues	J. Nguyen, A. Borodin
10/15/15	1.2	WRS, Traceability Matrix	J. Nguyen, A. Borodin

## [1] Introduction

### 1.1. Purpose

This document is meant to record the efforts of our team in defining the problem domain, goals, requirements, and specifications for the Whoosh app. By recording all of this information in one document, all stakeholders will share the same understanding of why and how we are developing the Whoosh application.

### 1.2. Scope

The Whoosh application will be only available on the Android Operating System and is restricted to helping handicapped people navigate parts of the UTD campus. The areas covered by the application are restricted to the central campus. Additionally, the app will provide contact information to the University Office of AccessAbility.

The application is for smart phones because they are becoming increasingly popular throughout the world, especially among college aged students. Since Android phones are the most ubiquitous of smartphones, the Whoosh team chose to spend our development time on that platform. Given limited development time, the Whoosh team also decided that only the central campus would be able to be mapped out in time to an acceptable granularity for the application. Linking Whoosh users to the Office of AccessAbility is seen as important as the application's users will most likely find their services useful.

### 1.3. Objectives and Success Criteria

1. Navigate around campus using a smartphone application which avoids non-accessible routes (ie. stairs).
2. Provide contact information for the Office of AccessAbility from within the application.

### 1.4. Definitions, Acronyms, and Abbreviations

- Movement-friendly: Describes a path that is feasible for those with movement impairments to travel on.
- Central Campus: The collection of the buildings on campus which surround the mall. All buildings in the central campus are reachable via the mall.
- Student-important: Describes locations which students are likely to visit and are not faculty/staff exclusive.
- Android: An operating system for mobile phones developed by Google
- The Office of Student AccessAbility (OSA): Office at the university dedicated to providing services for students, faculty, and visitors with a disability.
- app - Application, typically referring to a mobile application.

- UTD - University of Texas at Dallas.

## 1.5. Overview

This document includes an introduction to the Whoosh application, followed by preliminary definitions of the domain, functional, and non-functional requirements. It then contains a list of issues with each element of these three defined fields. Afterwards is a section stating the world surrounding the application and then a section which includes the formal requirements and specifications. Following this, there is a short section containing a link to a prototype and then a section of the application mockups. The final section lists the references used in the creation of this document.

## [2] Preliminary Definition

### 2.1. Preliminary Domain

PD_ID	Preliminary Domain Description
PD1	People with movement impairments require the the use of crutches and/or a wheelchair.
PD2	The UTD campus is comprised of several main buildings. Individual buildings have multiple floors.
PD3	Frequent construction projects often close previously accessible routes.
PD4	Certain routes between two destinations are not accessible by individuals in wheelchairs or on crutches. These modes of transportation place certain constraints on the routes that can be traversed (ramps instead of curbs, elevators instead of stairs, etc.).
PD5	There are no tools to aid in navigating the UTD campus in a wheelchair or on crutches.
PD6	GPS technology is not currently feasible for real-time navigation inside buildings.

### 2.2. Preliminary Functional Requirements

P FR_ID	Preliminary FR Description
PFR1	The application should provide navigational instructions between two specified points on the UTD campus.

PFR2	The application should provide contact information for the Office of Student Accessibility, and other contacts useful to movement-impaired individuals.
PFR3	The application should provide the ability to browse individual building floor plans, featuring accessibility-relevant elements.

### 2.3. Preliminary Non-Functional Requirements

PNFR_ ID	Preliminary NFR Description
PNFR1	The application should be able to provide navigational instructions without a persistent data connection.
PNFR2	The application UI should be designed in such a way as to enable the average user to make use of its features without additional instruction.
PNFR3	The application UI should be designed in such a way as to enable usage while in transit.
PNFR4	The application should return navigation results in a reasonable amount of time.
PNFR5	The application should maintain the privacy of user-input data; such data should be used solely to fulfil the primary functionality offered to the user.

## [3] Issues with the Preliminary Definition Given

### 3.1. Domain Issues

#### 3.1.1. DI1

Domain Issue ID	Domain Issue Description	
DI1	PD1	People with movement impairments who require the use of crutches and/or a wheelchair.
	Some movement impairments are the result of another condition which may affect the user's ability to use the application.	



	Option 1	Assume that the user has personal assistance who can utilize the app for them.
	Option 2	Figure out which movement impairments are the most common and prioritize those first.
	Option 3	Research different categories of movement impairments and their underlying causes. Develop the app in such a way that the majority of the causes will be handled.
	Choice	Option 3
	Rationale	Option three provides the best overall support for the users which this app is intended for. In pursuing option three, option one will also be covered for cases in which the user's condition requires a personal assistant.

### 3.1.2. DI2

Domain Issue ID	Domain Issue Description	
DI2	PD2	The UTD campus is comprised of several main buildings. Individual buildings have multiple floors.
	Ambiguous or incomplete. What constitutes the UTD Campus? Does it include parking lots or residential areas?  How are multiple floors handled?	
	Option 1	Exclude parking and residential areas. Define the main campus to be areas and buildings reachable via the campus mall.
	Option 2	Include all of UTD, from its classroom and services buildings to residential areas and parking lots.
	Choice	Option 1
	Rationale	Given the time and resource constraint of the project, option 1 is the best choice as it subtracts the added complexity of option two.

Notes		May be revised later in future iterations of the project, where more manpower and time is available.
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### 3.1.3. DI3

Domain Issue ID	Domain Issue Description	
DI3	PD3	Frequent construction projects often close previously accessible routes.
	How will closed off areas affect navigation? How will those areas be kept track of?	
	Option 1	Get all data as normal. Warn users when route may be under construction and unusable.
	Option 2	Have updates of construction and closed off areas. Add and update data accordingly.
	Choice	Option 2
	Rationale	Option two provides best way of handling the construction at UTD as it avoids possible harm caused by leading the user astray.

### 3.1.4. DI4

Domain Issue ID	Domain Issue Description	
DI4	PD4	Certain routes between two destinations are not accessible by individuals in wheelchairs or on crutches.
	How will such routes be handled?	
	Option 1	Add all possible routes, including ones which are inaccessible by the movement impaired. However, add option to find movement-friendly routes.
	Option 2	Add all possible routes, including ones which are not movement-friendly, but prioritize movement-friendly options.
	Option 3	Only consider movement-friendly routes.
	Choice	Option 3

	Rationale	Given the time and resource constraints of the project, it is more feasible to develop option three as it excludes the added complexity of non-movement-friendly routes. Additionally, it also focuses more on the application's intended audience.
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### 3.1.5. DI5

Domain Issue ID	Domain Issue Description	
DI5	PD5	There are no tools to aid in navigating the UTD campus in a wheelchair or on crutches.
	What aid should be provided in navigating the UTD campus? What other features should be provided in this case?	
	Option 1	Have the application focus on navigation with additional features for users to obtain assistance they may require.
	Option 2	Focus solely on providing the navigation functionality if the application.
	Choice	Option 1
	Rationale	Option 1 provides necessary features for the users of the application such as requesting accommodations and reaching emergency services.

### 3.1.6. DI6

Domain Issue ID	Domain Issue Description	
DI6	PD6	GPS technology is not currently feasible for real-time navigation inside buildings.
	Will navigation be automatic? How will users with occupied hands utilize the application?	
	Option 1	Provide turn by turn directions via touchscreen interface through one-handed operations.
	Option 2	Provide ability for turn by turn directions with additional hands-free options.

	Choice	Option 1
	Rationale	Option one provides the best usability until GPS technology is improved for real-time navigation. Most users will be able to perform one-handed operations. Additionally, a touch-screen interface won't be susceptible to background noise in contrast with option 2.

## 3.2. Functional Requirements Issues

### 3.2.1. FRI1

FR Issue ID	Description	
FRI1	PFR1	The application should provide navigational instructions between two specified points on the UTD campus.
	Are all navigational directions movement-friendly? What if the user is hard of seeing? What limitations are there to the points on the UTD Campus?	
	Assumptions from previous sections: <ul style="list-style-type: none"> <li>● All routes provided by the app are movement friendly</li> <li>● The app will only cover Central Campus</li> <li>● Easily identifiable visuals will be utilized</li> </ul>	
	Option 1	The application will provide routes covering central campus between any two arbitrary locations.
	Option 2	The application will provide routes covering central campus, however routes starting points and destinations can only be from specific locations (i.e. Pre-Existing nodes).
	Option 3	The application will provide routes covering central campus but can choose between a specific or automatically detected starting points. Destinations will remain specific.
	Choice	Option 3

	Rationale	Option 3 seems to be the best choice as it's the most common use case. Typically a users expect to have their start picked up by default and have an idea of where they need to go.
Satisfied by	FR3, FR4, FR5, FR6, FR8, FR9	

### 3.2.2. FRI2

FR Issue ID	Description	
FRI2	PFR2	The application should provide contact information for the Office of Student Accessibility, and other contacts useful to movement-impaired individuals.
	How will the information be presented to the user? Specifically, what information will be provided to the user? How will we know if the information is correct?	
	Assumptions: <ul style="list-style-type: none"> <li>● Contact Information will be kept up-to-date by team</li> <li>● App will allow users to contact those of interest</li> <li>● App will utilize clear visible graphics to accommodate the hard of seeing</li> <li>● App will make clear distinction between call and email options</li> </ul>	
	Option 1	Present the information in a pop-up window triggered by an icon at the top of the screen, overlaid on the map
	Option 2	Dedicate a section to contacts and extra information, separate from the map
	Choice	Option 2
	Rationale	Option two makes a better case as more information can be displayed. It also allows for less clutter on the app's navigation screen.
	Satisfied by	FR7, FR9

### 3.2.3. FRI3

FR Issue ID	Description
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FRI3	PFR3	The application should provide the ability to browse individual building floor plans.
	Which buildings are being referred to? What will browsing the buildings allow the user to do?	
	Assumptions: <ul style="list-style-type: none"> <li>● Only buildings from Central Campus will be browseable</li> <li>● Buildings will be displayed with clear visible graphics for users to see</li> </ul>	
	Option 1	The application will allow users to look through buildings and floor plans.
	Option 2	The application will allow users to look through buildings and floor plans with the option to initiate navigation from that view.
	Choice	Option 2
	Rationale	Option two makes the most sense as users navigating a building may want to navigate to or from there.
Satisfied by	FR1, FR2, FR9	

### 3.3. Non-Functional Requirements (NFR) Issues

#### 3.3.1. NFRI1

NFR Issues ID	Description	
NFRI1	PNFR1	The application should be able to provide navigational instructions without a persistent data connection.
	"Persistent" is ambiguous. Is a data connection necessary at start-up? Is a data connection necessary at the time of a routing request?	
	Option 1	A data connection is necessary only during application start-up. All functionality shall be

		available afterwards without requiring an active data connection.
	Option 2	A data connection shall be necessary during start-up, and upon navigation requests. Navigation instructions shall be available without an active data connection after they have been generated. All other functionality shall be available without an active data connection.
	Choice	1
	Rationale	Reliability of cellular data coverage is spotty in larger buildings and lower floors. A university visitor may not have access to the campus WIFI network. Thus, routing requests must be serviceable without an active data connection. At the same time, data must be kept current to account for changes in accessible routes. Requiring an active data connection only at start-up satisfies both of the above concerns.
Satisfied by	NFR1	

### 3.3.2. NFR12

NFR Issues ID	Description	
NFR12	PNFR2	The application UI should be designed in such a way as to enable the average user to make use of its features without additional instruction.
	The requirement is not specific enough to be testable. How is an “average user” defined? Is there a specific list of features that must be tested?	
	Option 1	Define “average user” as one using a smartphone on a daily basis, with prior experience in mobile mapping/routing applications (such as Google Maps or Apple Maps).

	Option 2	Define “features” as the 3 primary use cases (navigation, browsing, directory).
	Choice	Both options are necessary to address the issue.
	Rationale	<p>The application targets current or prospective students (visitors). Thus, an assumption of familiarity with mobile mapping application conventions is reasonable (Option 1).</p> <p>All three primary use cases are necessary to meet the goals of this application. Thus, they must all be usable without extra instruction in order to satisfy the intent of this NFR (Option 2).</p>
Satisfied by	NFR2	

### 3.3.3. NFR13

NFR Issues ID	Description	
NFR13	PNFR3	The application UI should be designed in such a way as to enable usage while in transit.
	What are the limitations of usage “while in transit”? What paradigms exist to address these limitations?	
	Option 1	Single-handed operation (well-placed and large controls)
	Option 2	Hands-free operation (text-to-speech and voice commands)
	Choice	1
	Rationale	While hands-free operation would provide the best user experience in theory, environment and technology constraints make this option infeasible (lack of indoor GPS tracking necessitates user interaction to advance directions, ambient noise inhibits voice recognition).



Satisfied by	NFR3
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### 3.3.4. NFRI4

NFR Issues ID	Description	
NFRI4	PNFR4	The application should return navigation results in a reasonable amount of time.
	In order to be testable, “reasonable” must be defined.	
	Option 1	sub-second
	Option 2	1 to 5 seconds
	Option 3	5 to 15 seconds
	Choice	2
	Rationale	In the interest of consistency with NFR1, navigation instructions must be calculated locally on the mobile device. Limited computing power must then be contended with, possibly making a sub-second response time unrealistic (Option 1). At the same time, application response that exceeds 5 seconds would be considered a poor experience according to contemporary standards and expectations (Option 3). Thus, Option 2 is a reasonable compromise.
Satisfied by	NFR4	

### 3.3.5. NFRI5

NFR Issues ID	Description	
NFRI5	PNFR5	The application should maintain the privacy of user-input data; such data should be used solely to fulfil the primary functionality offered to the user.
	“maintain privacy”, “user-input data”, and “primary functionality” must be concretely defined in order to test compliance.	

	Option 1	“maintain privacy” should be defined as preventing the dissemination of user-input data beyond local device memory or storage.
	Option 2	“user-input data” should be defined as search terms and routing origin/destination selections.
	Option 3	“primary functionality” shall be defined as the 3 primary use cases (navigation, browsing, directory).
	Choice	1, 2 and 3
	Rationale	All three options (definitions) are necessary in order to satisfy the intent of this requirement.
Satisfied by	NFR5, NFR6	

## [4] WRS

### 4.1. W

#### 4.1.1. Problem

Problem ID	Problem Description	Corresponding Goals
P1	Campus is too vast to feasibly develop full application given current time and resource constraints.	G1, G7
P2	Current GPS capabilities are not feasible for real-time indoor GPS tracking, possibly affecting standard use of navigational apps.	G2, G5
P3	Campus is difficult to navigate for users with movement impairments.	G2, G3
P4	Users may have a hard time finding campus accommodations and contact information, or may be unfamiliar with the UTD campus.	G4

P5	Application could be confusing or difficult for users to utilize.	G5
P6	Application could cause harm to the user via incorrect/dangerous navigational routes, misuse of data, and more..	G6

#### 4.1.2. Goals

Goal ID	Goal Description	Backward Traceability	Forward Traceability
G1	Application will be a proof of concept featuring navigation between ATEC and Student Services Building.	P1	FO1, NFO1
G2	Application should provide adequate instructions and accurate depiction.	P2, P3	FO4, NFO2
G3	Make the UTD campus easier to navigate for those with movement impairments.	P3	NFO2, NFO3, NFO4
G4	Provide necessary contact, service, and general campus information.	P4	FO2, FO3
G5	Have the application be easy to use and understand.	P2, P5	FO4, NFO2, NFO3
G6	Ensure that safety of the user's navigation, private information, and other factors that could impact the user.	P6	FO1, NFO5
G7	Application will be limited to areas deemed important to students, e.g. classrooms, art rooms, student services, etc.	P1	FO1

### 4.1.3. Improved Understanding of Domain, Stakeholders, Functional, and Non-Functional Objectives

#### 4.1.3.1. Domain

Domain ID	Domain Description
D1	People with movement impairments who are able to perform one-handed operations on a smartphone.
D2	Buildings located in the Central Campus of UTD. Buildings contain multiple floors.
D3	Frequent construction projects which affect accessible routes.
D4	Movement friendly routes between destinations on campus.
D5	UTD is a movement-friendly campus, however no pre-existing tools/applications exist to help navigate and assist movement-impaired individuals.
D6	Real-time tracking is not feasible due to current GPS technology.

#### 4.1.3.2. Stakeholders

- Prospective Users of the application (mobility-impaired students attending UTD)
- Team Whoosh (Us)
- Dr. Lawrence Chung
- Dr. Chung’s graduate students aiming to make a similar application

#### 4.1.3.3. Functional Objectives

Based on the above information and our goals, the functional objectives of Whoosh are:

FR Objective ID	Objective Description	Alleviates Problems	Achieves Goals

FO1	The application should provide navigation between Student-Important locations inside the ATEC and SSB buildings.	P1, P3, P6	G1, G6, G7
FO2	The application should feature a dedicated section to provide information about and the means to contact the Office of Student Accessibility, and other contacts useful to movement-impaired individuals.	P4	G4
FO3	The application should provide the ability to browse the Central Campus and individual building floor plans and initiate navigation from that view.	P4	G4
FO4	The application should have the ability to progress through navigational instruction in lieu of progression via real-time GPS tracking.	P2, P5	G2, G5

#### 4.1.3.4. Non-Functional Objectives

Objective ID	Objective Description	Alleviates Problems	Achieves Goals
NFO1	The application should be able to provide navigational instructions without a persistent data connection.	P2	G1
NFO2	The application UI should be designed in such a way as to enable the average user to make use of its features without additional instruction.	P5	G2, G3, G5
NFO3	The application UI should be designed in such a way as to enable usage while in transit.	P5	G3, G5
NFO4	The application should return navigation results in a reasonable amount of time.	P2, P3	G3
NFO5	The application should maintain the privacy of user-input data; such data should be used solely to fulfill the primary functionality offered to the user.	P6	G6

## 4.2. RS

### 4.2.1. Functional Requirements

#### 4.2.1.1. FR1

FR ID	Description
FR1	The user shall be able to browse a map of the UTD's Central Campus.
Satisfies Functional Requirement Issue	FRI3 (Indirectly)
Satisfies Objectives	FO3

#### 4.2.1.2. FR2

FR ID	Description
FR2	The user shall be able to select the ATEC or SSB building when browsing UTD's Central Campus.
FR2.a	When the user selects a building from the campus map, the application shall display a detailed floor plan for the first floor of the selected building, with Student-Important locations identified.
Satisfies Functional Requirement Issue	FRI3
Satisfies Objectives	FO3, FO1

#### 4.2.1.3. FR3

FR ID	Description
FR3	The user shall be able to select Student-Important location as a start/end location while browsing the floor plans.
Satisfies Functional Requirement Issue	FRI1
Satisfies Objectives	FO1

#### 4.2.1.4. FR4

FR ID	Description
FR4	The application shall be able to detect the user's location to the best of the ability of the underlying Android system.
Satisfies Functional Requirement Issue	FRI1
Satisfies Objectives	FO1

#### 4.2.1.5. FR5

FR ID	Description
FR5	The user shall be able to search a database of Student-Important locations, and select a particular result to navigate to.
Satisfies Functional Requirement Issue	FRI1
Satisfies Objectives	FO1

#### 4.2.1.6. FR6

FR ID	Description
FR6	The application shall be able to return a set of navigational instructions for a start and end point specified by the user.
FR6.a	The route shall be calculated in such a way as to include only movement-friendly steps.
FR6.b	The route shall be calculated such that all intermediate steps are feasible for navigation.

FR6.c	The route shall be calculated in such a way as to optimize the estimated amount of time to navigate it.
Satisfies Functional Requirement Issue	FRI1
Satisfies Objectives	FO1

#### 4.2.1.7. FR7

FR ID	Description
FR7	The application shall feature a section providing information and the ability to contact Student Services, the Office of Student Accessibility, and other people of interest.
Satisfies Functional Requirement Issue	FRI2
Satisfies Objectives	FO2

#### 4.2.1.8. FR8

FR ID	Description
FR8	The application shall provide an interface to display a set of navigational instructions produced in accordance with FR6.
FR8.a	Each step shall correspond to a geographical point of interest on the calculated route.
FR8.b	Each step shall provide a time and distance estimate to the following step.
FR8.c	Each step shall provide a time and distance estimate to the following step.
FR8.d	When the user selects the next or previous step, the interface shall bring the corresponding geographic point into focus on a moving floor plan map.



Satisfies Functional Requirement Issue	FRI1
Satisfies Objectives	FO1, FO4

#### 4.2.1.9. FR9

FR ID	Description
FR9	The user shall be able to return to Navigation from the Information Section, and vice versa.
Satisfies Functional Requirement Issue	FRI1, FRI2, FRI3
Satisfies Objectives	FO1, FO2, FO3

### 4.2.2. Non-Functional Requirements

#### 4.2.2.1. NFR1

Requirement ID	Requirement Description
NFR1	The application shall require a data connection only during start-up, thereafter making all functionality available offline.
Satisfies Non-functional Requirement Issues	NFRI1
Satisfies Objectives	NFO1

#### 4.2.2.2. NFR2

Requirement ID	Requirement Description
NFR2	The application UI shall be designed in such a way as to enable a user already familiar with Google and Apple Maps mobile applications to make use of its primary features without additional instructions.
Satisfies Non-functional Requirement Issues	NFRI2
Satisfies Objectives	NFO2

#### 4.2.2.3. NFR3

Requirement ID	Requirement Description
NFR3	The application UI shall be designed in such a way as to enable single-handed operation.
Satisfies Non-functional Requirement Issues	NFRI3
Satisfies Objectives	NFO3

#### 4.2.2.4. NFR4

Requirement ID	Requirement Description
NFR4	The application shall provide navigation results within 5 seconds of complete and valid user input.
Satisfies Non-functional Requirement Issues	NFRI4
Satisfies Objectives	NFO4

#### 4.2.2.5. NFR5

Requirement ID	Requirement Description
NFR5	The application shall limit representation of user-input data, such as search terms and routing destinations, to local device memory and storage.
Satisfies Non-functional Requirement Issues	NFRI5
Satisfies Objectives	NFO5

#### 4.2.2.6. NFR6

Requirement ID	Requirement Description
NFR6	The application shall limit usage of user-input data, such as search terms and routing destinations, to map browsing and navigation functionality.
Satisfies Non-functional Requirement Issues	NFRI5
Satisfies Objectives	NFO5

## [5] Preliminary Prototype

An interactive prototype of our app can be found here: <https://marvelapp.com/109ggde#8134718>

[6] Prototype Interface Mock-ups



Fig 6.1 - Campus Browsing

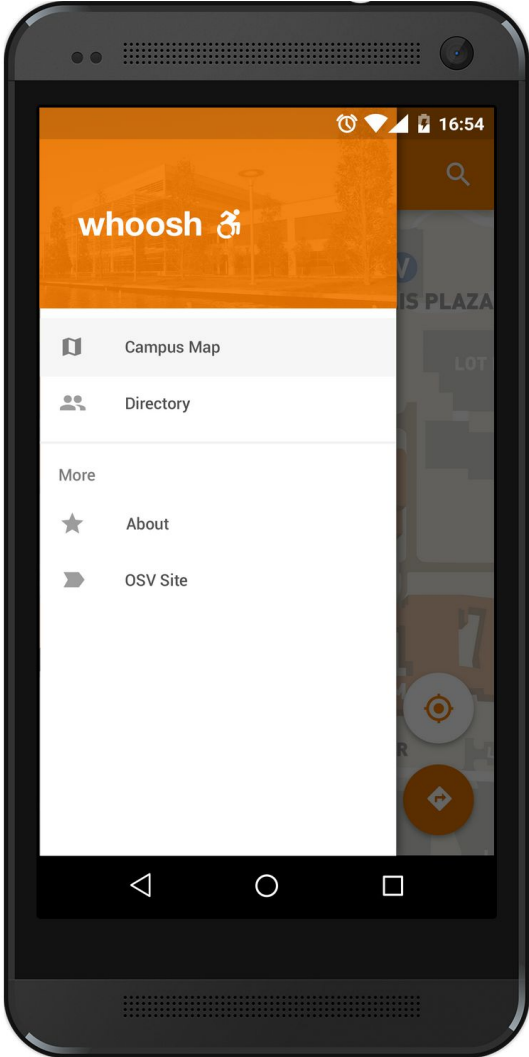


Fig 6.2 - App Menu

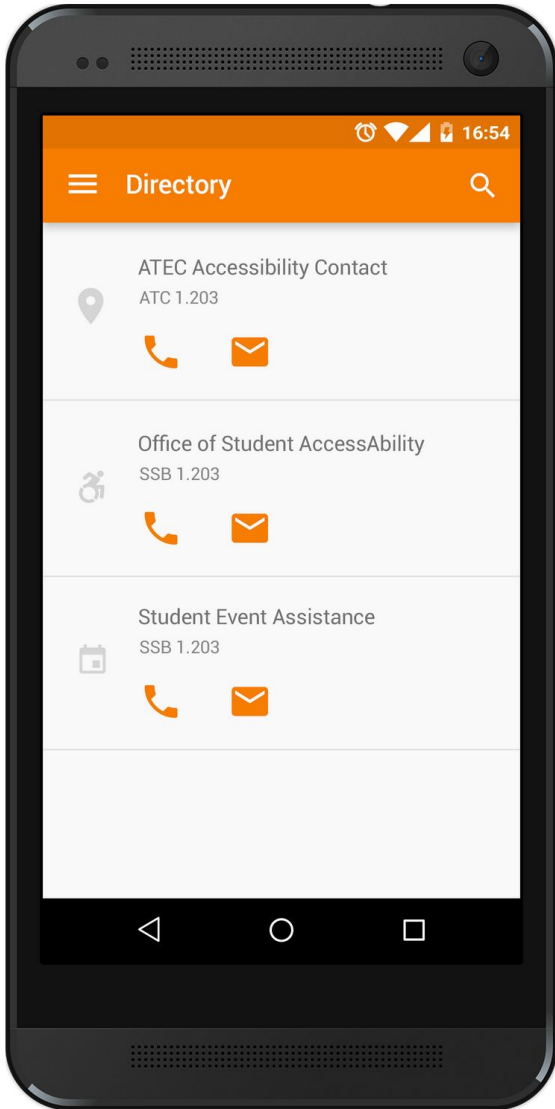


Fig 6.3 - Contacts of Interest

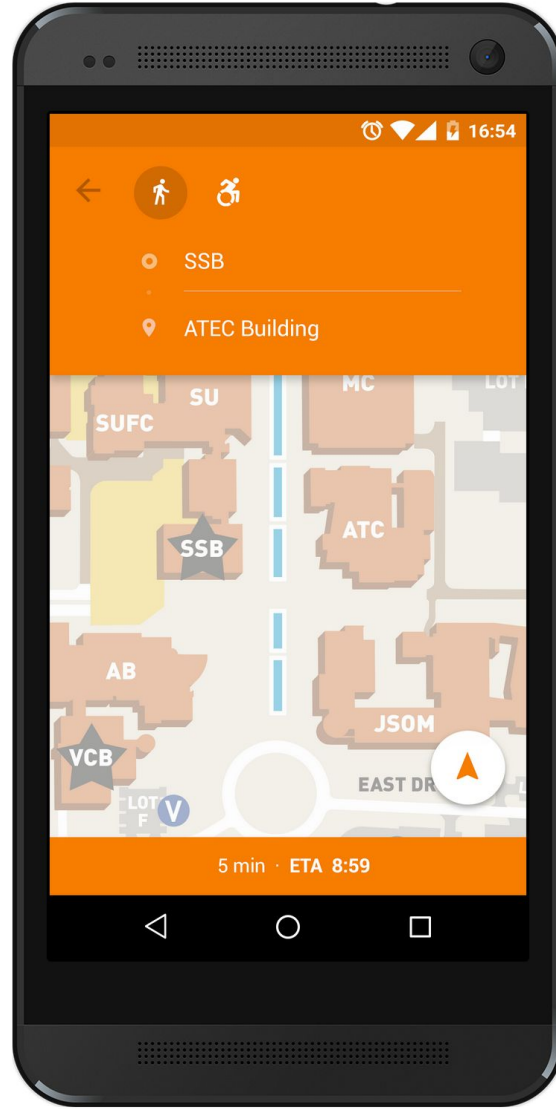


Fig 6.4 - Destination Selection

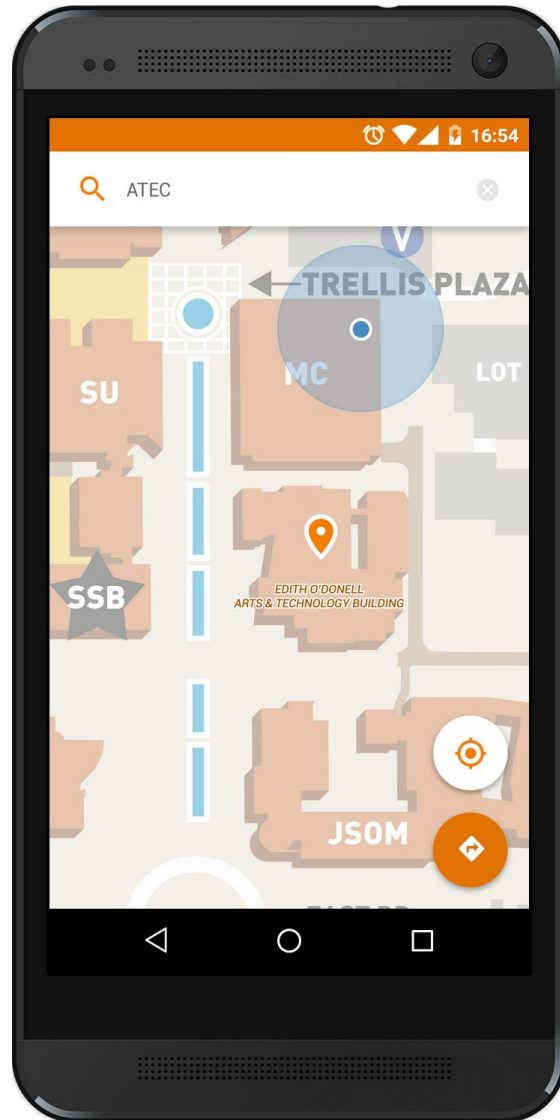


Fig 6.5 - Destination Search

## [7] Traceability

### 7.1. Objectives to Requirements

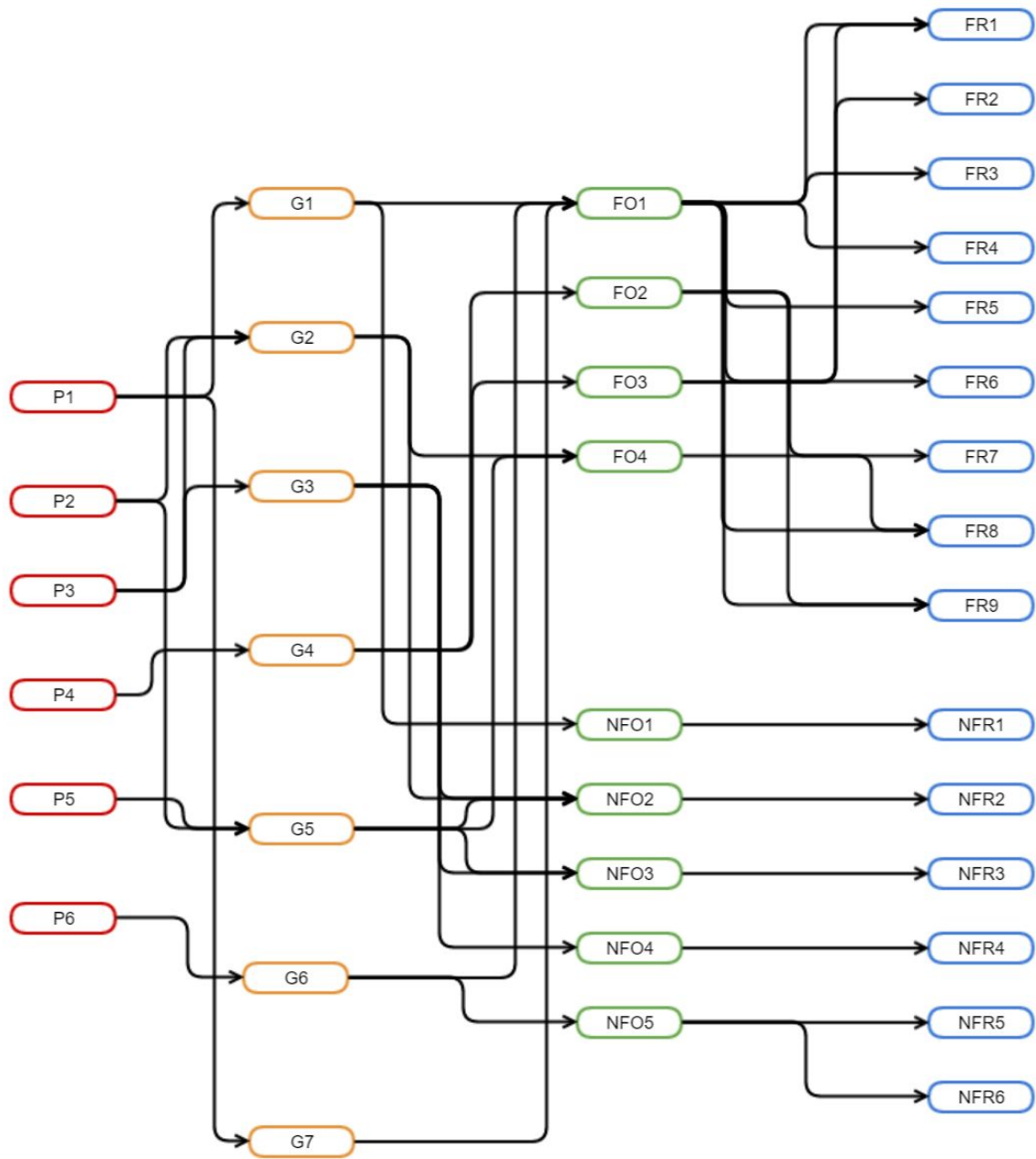
#### 7.1.1. Problems to Requirements Traceability Chart

Problems (P)

Goals (G)

Objectives (FO, NFO)

Requirements (FR, NFR)



### 7.1.2. Objectives to Requirements Traceability Matrix

Objectives to Requirements Traceability Matrix										
Objectives to Requirements Traceability Matrix	Objectives	FO1	FO2	FO3	FO4	NFO1	NFO2	NFO3	NFO4	NFO5
<b>Requirements</b>										
FR1				x						
FR2	x		x							
FR3	x									
FR4	x									
FR5	x									
FR6	x									
FR7		x								
FR8	x				x					
FR9	x	x	x							
NFR1						x				
NFR2							x			
NFR3								x		
NFR4									x	
NFR5										x
NFR6										x

## 7.2. Functional Requirements to Design Elements

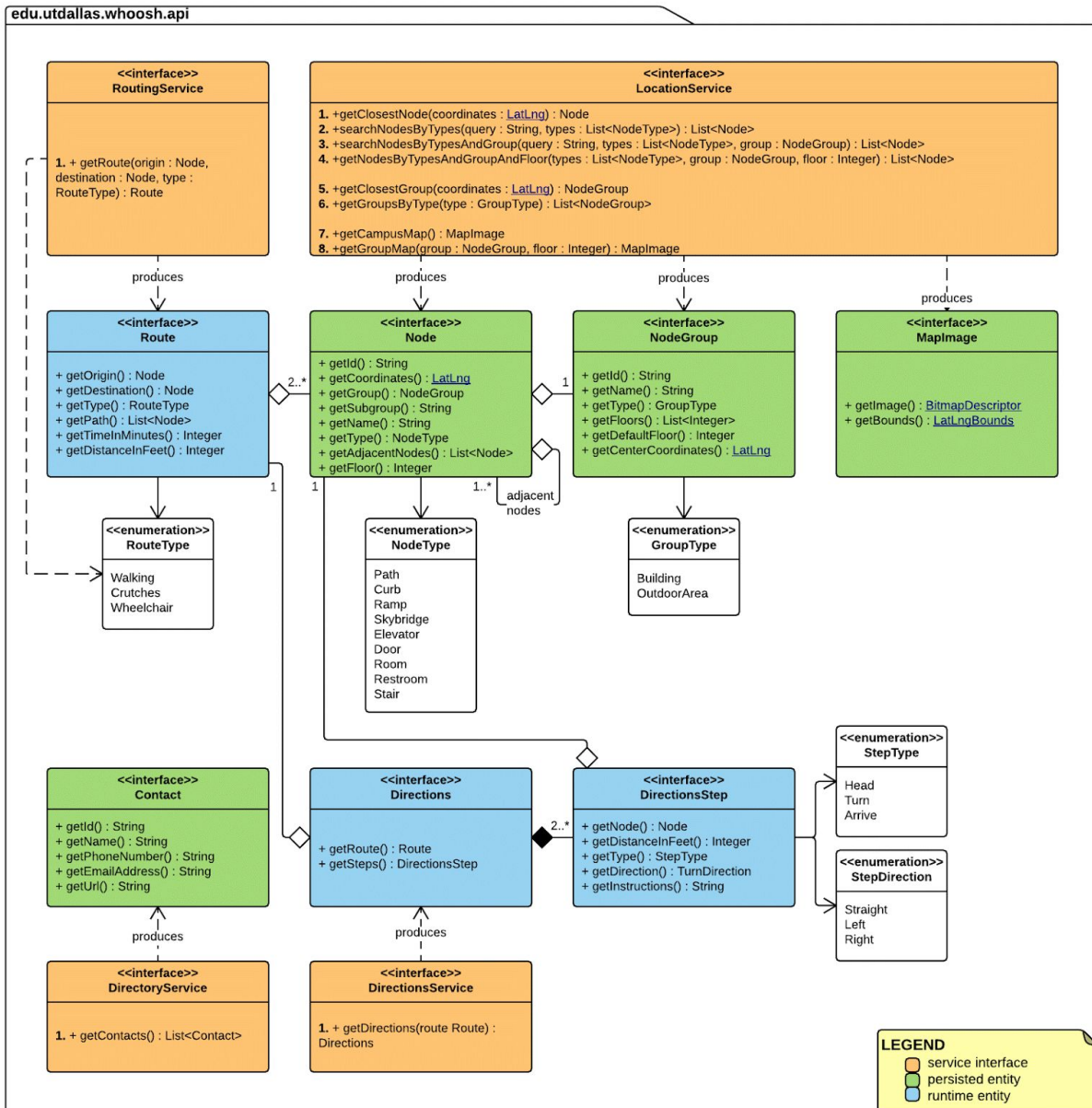
Please refer to Diagram 7.2.1 below for details about the referenced Design Elements.



### Functional Requirements to Design Elements Traceability Matrix

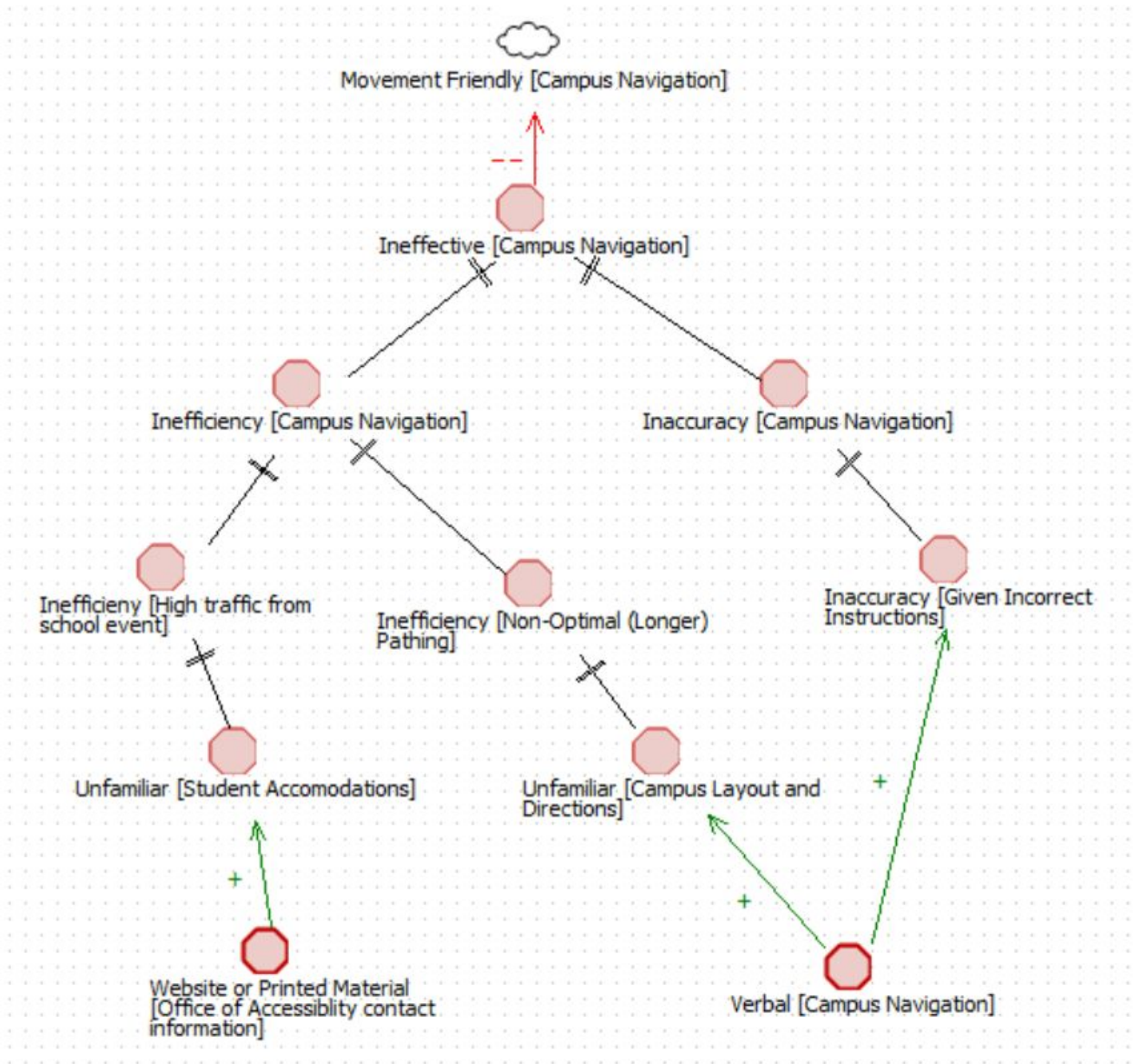
Objectives to Requirements Traceability Matrix	Design Elements	LocationService.1	LocationService.2	LocationService.3	LocationService.4	LocationService.5	LocationService.6	LocationService.7	LocationService.8	RoutingService.1	DirectoryService.1	DirectionsService.1
<b>Requirements</b>												
FR1								x				
FR2							x					
FR2.a				x					x			
FR3				x								
FR4		x										
FR5			x	x								
FR6										x		
FR6.a										x		
FR6.b										x		
FR6.c										x		
FR7											x	
FR8												x
FR8.a												x
FR8.b												x
FR8.c												x
FR8.d												x
FR9								x	x	x	x	x

## 7.2.1. Diagram - Design Elements

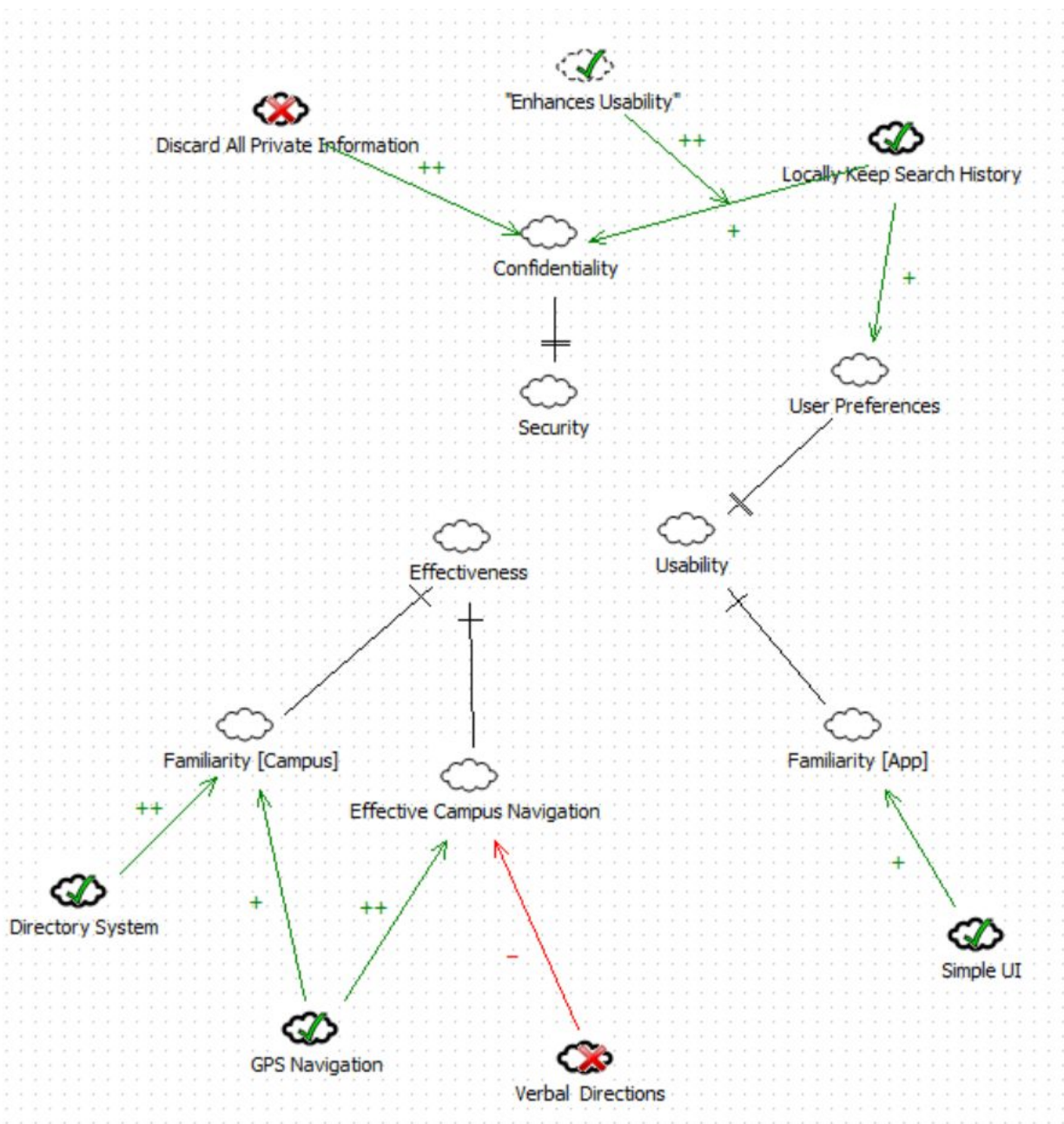


## [8] PIG and SIG Diagrams

### 8.1. Problem Interdependency Graph



## 8.2. Softgoal Interdependency Graph (High-Level)



### 8.3. Softgoal Interdependency Graph (NFR's)

#### [9] References

UTD's Official Site: <http://www.utdallas.edu/>

UTD Campus Map: <http://www.utdallas.edu/maps/>

UTD Office of Accessibility <http://www.utdallas.edu/studentaccess/>

Dr. Chung's website: <http://www.utdallas.edu/~chung/CS4351/syllabus.htm>