

NAVUP
Software Requirements Specification
University of Pretoria

Darren Adams	- u14256232
Keanan Jones	- u13036892
Lesego Makaleng	- u15175716
Dedre Olwage	- u15015239
Kamogelo Tsipa	- u13010931

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1 Introduction

1.1 Purpose

This document serves the purpose of providing an intensive description for the NavUP system(product). It will also identify the possible requirements and restrictions for the NavUP system(product). This document will help the developer to gain insight on what the system(product) should do, to better understand how the system should be implemented in the implementation phase.

1.2 Scope

The system(product) to be developed is called NavUP. NavUP will serve as a navigation application. NavUP intends to provide different users with optimal routes to destinations across the University of Pretoria campus. Furthermore NavUP provides a way saving and searching locations, both indoors and outdoors. NavUP will also facilitate search-ability of POIs and events. The Wi-Fi infrastructure within campus will be used for administering location and navigation services.

1.3 Definitions, Acronyms and Abbreviations

Term	Definition
POI	Point of Interest
Wi-Fi	Wireless network infrastructure
Developer	Person/s developing the system. COS301 Software Engineers

1.4 Overview

In this document, an Overall Description will be provided for the NavUP system(product). In the Overall Description, the Product Perspective, Product Functions, User Characteristics and Constraints will be discussed. Following the Overall Description, will be an elaboration on the Specific Requirements for the NavUP system(product). For the Specific Requirements, External Interface Requirements, Functional Requirements, Performance Requirements, Design Constraints, Software Sytem Attributes and Other Requirements will be identified and discussed. Thereafter, any relevant appendixes and indexes needed by this document will be provided.

2 Overall Description

This section provides an overview of the system as a whole. We will explain how the system works, as well as how it interacts with other systems.

2.1 Product Perspective

NavUP is a mobile application used by students at the University of Pretoria. NavUP provides navigation of campus, providing traffic congestion and location services. NavUP will rely on other NavUP devices for real-time statistics and will interact with a primary server for pre-determined locations, events, POIs and venues. Both NavUP server and NavUP mobile will be present on the same network.

2.1.1 System Interfaces

Todo: Identifying interacting subsystems first needs to be done.

2.1.2 User Interfaces

Interaction between user and system will be achieved through the use of GUIs.

- **User registration GUI** [Use case diagram for registration]
- **User login GUI** [Use case diagram for login]
- **User CRUD profile GUI** [Use case diagram for user profile CRUD]
- **Location Search GUI** [Use case diagram for location search]
- **Location Navigation GUI** [Use case diagram for location navigation]

2.1.3 Hardware Interfaces

2.1.4 Software Interfaces

2.1.5 Communication Interfaces

2.1.6 Memory

2.1.7 Operations

2.1.8 Site Adaptation Requirements

2.2 Product Functions

General functions for the NavUP system(product) include:

- The ability to use several Wi-Fi connection points as navigation tools
- The ability to calculate optimal routes from one destination to another, bases on the user's needs (i.e it must cater for routes for those with disabilities etc.).
- The ability to provide accurate information about pedestrain traffic based on how many devices are connected to certain Wi-Fi connection points.

- The ability to reroute the user based on certain preferences.
- The ability to calculate the user's current location while indoors and while outdoors.
- The ability to search for locations, save locations, and providing directions to a location.

2.3 User Characteristics

2.4 Constraints

2.5 Assumptions and Dependencies

3 Specific Requirements

3.1 External Interface Requirements

- System Interfaces
- User Interfaces
- Hardware Interfaces
- Software Interfaces
- Communication Interfaces

3.2 Functional Requirements

3.3 Performance Requirements

3.4 Design Constraints

3.5 System Software Attributes

3.6 Other Requirements

Appendixes

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