1. Introduction
	* Societal Problem
	* Current Traffic Avoidance Methods
	* Statistics
	* Solution Overview
	1. Purpose (*Lab 1: Product Description)*
* Providing Customized Traffic Monitoring
* How It Will Be Used
* Who Will Use It (*Lab 1: Target Market Customer Base)*
* What It Will Do (*Lab 1: Product Features & Capabilities)*
	+ Virtual Checkpoints (GPS)
	+ Real-Time Data Exchange
	+ Traffic Analysis
	+ Driver Profiles
* What It Won’t Do
	+ Prevent Traffic Congestion
	+ Guarantee Decreased Delay
	+ Guarantee Information Availability
	+ Direct Obstruction Identification
	+ Detect Emergency Response Vehicles
	+ Provide Turn-by-turn Directions
	1. Scope
* Reduced Geographical Area
	+ Old Dominion University
	+ Select Highway Corridors
* Pre-determined Simulated Driver Data
* Pre-recorded Routes (Real GPS Data)
* Processing Simulated Travel Data on Server (Pseudo Real-Time)

*Table: Prototype Features Table*

* 1. Definitions and Acronyms

See *Glossary*

* 1. References

See *References (Lab 1)*, add CS 411/Lab 1

* 1. Overview

Summary of Product Specification Contents

1. General Description
	1. Prototype Architecture Description (*Lab 1: Prototype Architecture*)
* MFCD (Prototype)

*Figure: MFCD Phase 1*

* Prototype Algorithms

*Table: Algorithms* ……………………………………………………..(**TO DO**)

* Working Mobile Application
	+ GUI Screens

*Figure: GUI Site Map*

* Virtual Machine Server
	+ Apache
	+ MySQL
	+ PHP MyAdmin
	1. Prototype Functional Description
* Mobile Application
	+ GUI: Login
	+ GUI: New User
	+ GUI: New/Edit Route
	+ GUI: End of Trip
	+ GUI: Delay Notification
	+ GUI: Settings
* Driver Profile
	+ Store/Edit Custom Routes
	+ Set Pre-analysis Times
	+ Track Statistics
* Virtual Checkpoints
* Traffic Wizard Process Flow

*Figure: Traffic Wizard Process Flow (Modified Process on website)*

* + Data Exchange Flow

*Figure: Checkpoint Algorithm (Dropbox->Web and Slide Images -> algorithms-checkpoint-flow)*

* + Server Communication (*Lab 1: Comm. Between. Smartphone and Server)*

*Figure: Data Exchange Flow (Data Flow on website)*

* Simulation Console

Figure: Simulation Console…………………………………..(**TO DO**)

* 1. External Interfaces
		1. Hardware Interfaces
	+ Smartphone
	+ GPS Module
	+ 3G Internet Module
		1. Software Interfaces
	+ MySQL Database Interface
	+ PHP/Java/Python/Perl (TBD) Server Interface
	+ Simulation Console Interface (.NET)
		1. User Interfaces
	+ Smartphone App

*Figure: GUI Sitemap*

* + 1. Communication Protocols / Interfaces
	+ TCP/IP
	+ UDP
1. Specific Requirements (COLLABORATION)\*\*\*\*
	1. Functional Requirements
		1. Databases

*Figure: Database Schema*

* + - 1. Driver Profile Database

*Figure: Customer Database ERD (site)*

* + - 1. Virtual Checkpoint Database

*Figure: Route Database ERD (site)*

* + - 1. Speed Limit Database

*Figure: Speed Limit Database ERD*……………………(**TO DO**)

* + 1. Algorithms
			1. Aggregate Speeds
			2. Checkpoint Allocation
			3. Checkpoint Reallocation
			4. Route Analysis

*Figure: Route Analysis Algorithm (site)*

* + - 1. Next Checkpoint ETA
			2. Driver Generator
		1. Simulation Console
			1. Region Selection
			2. Traffic Scenario Selection
			3. Simulation Runtime Execution
			4. Traffic Activity Display
		2. GUI
			1. Smartphone Application (w/ *Figures (screenshots)*)
* GUI: Login
* GUI: New User
* GUI: New/Edit Route
* GUI: End of Trip
* GUI: Delay Notification
* GUI: Settings
	+ - 1. Simulation Console(figures)……………….…..……….(**TO DO**)
	1. Performance Requirements
		1. Database Read/Write Speed
		2. Wireless Data Transmission Speed/Fidelity
		3. Algorithm Efficiency
	2. Assumptions and Constraints
		+ Assumptions: Driver base

*Table: Assumptions Table*………………………………(**TO DO**)

* 1. Non-functional Requirements
		1. Security
		2. Maintainability
		3. Reliability
			1. Server Uptime/Redundancy