

Lab 2 Section 3 Collaborative Outline

3. Specific Requirements

3.1. Functional Requirements

3.1.1. Databases (**Thomas Kennedy**)

Figure: Database Schema

3.1.1.1. Driver Profile Database

Figure: Customer Database ERD (site)

3.1.1.2. Virtual Checkpoint Database

Figure: Route Database ERD (site)

3.1.1.3. Speed Limit Database

Figure: Speed Limit Database ERD.....(TO DO)

3.1.2. Algorithms(**Nick MacLeod**)

3.1.2.1. Aggregate Speeds

3.1.2.2. Checkpoint Allocation

3.1.2.3. Checkpoint Reallocation

3.1.2.4. Route Analysis

Figure: Route Analysis Algorithm (site)

3.1.2.5. Next Checkpoint ETA

3.1.2.6. Driver Generator

3.1.3. Simulation Console(**Andrew Crossman**)

3.1.3.1. Region Selection

3.1.3.2. Traffic Scenario Selection

3.1.3.3. Simulation Runtime Execution

3.1.3.4. Traffic Activity Display

3.1.4. GUI(**Andrew McKnight**)

3.1.4.1. Smartphone Application (w/ *Figures (screenshots)*)

- GUI: Login
- GUI: New User
- GUI: New/Edit Route
- GUI: End of Trip
- GUI: Delay Notification
- GUI: Settings

3.1.4.2. Simulation Console(figures).....(TO DO)

3.2. Performance Requirements(**Binh Dong**)

3.2.1. Database Read/Write Speed

3.2.2. Wireless Data Transmission Speed/Fidelity

3.2.3. Algorithm Efficiency

3.3. Assumptions and Constraints(**Collaborative**)

- Assumptions: Driver base

Table: Assumptions Table.....(TO DO)

3.4. Non-functional Requirements(**Sujani Godavarthi**)

3.4.1. Security

3.4.2. Maintainability

3.4.3. Reliability

3.4.3.1. Server Uptime/Redundancy