Vehicle Intersection Control

MCMASTER UNIVERSITY

Draft System Requirements

SE 4G06

GROUP 6

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Revisions

Date	Revision Number	Authors	Comments
November 7, 2016	Revision 0	Alex Jackson Jean Lucas Ferreira Justin Kapinski Matthew Hobers Radhika Sharma Zachary Bazen	N/A

Table 1: VIC Table of Revisions

***** These headings to be double checked against template to ensure no topics missed *****

1 Project Drivers

1.1 The Purpose of the Project

The purpose of this project is to create a system that allows autonomous cars to navigate through intersections. This will be accomplished by providing an appropriate order for the vehicles to proceed through the intersection. When multiple autonomous cars arrive at an intersection simultaneously, due to the lack of a decision making protocol, the cars have no way of determining in which order to proceed.

VIC (Vehicle Intersection Control) will allow autonomous vehicles to make navigation decisions at intersections. In addition, VIC will be able to dynamically handle changing scenarios at an intersection without running into deadlock or stalemate situations. To ensure safety, VIC will allow cars to navigate through the intersection only after a unanimous consensus has been made.

The following document will outline the functional and nonfunctional requirements of VIC. Other topics that will be covered pertaining to VIC will include: Scope, Project Drivers, Project Constraints, and Project Issues.

1.2 The Client, the Customer, and Other Stakeholders

1.2.1 Client

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1.2.2 Customer

Insert Text Here.

1.2.3 Stackholders

Insert Text Here.

1.3 Users of the Product

Insert Text Here.

2 Project Constraints

2.1 Mandated Constraints

Insert text here.

2.2 Naming Conventions and Definitions

2.2.1 Naming Conventions

Test

2.2.2 Definitions

N/A

2.3 Relevant Facts and Assumptions

Insert Text Here.

3 Functional Requirements

This section is taken from IEEE

TRK-1: Track requirement 1
TRK-2: Track requirement 2
⋮
TRK-3: Track requirement n

VHL-1: Vehicle requirement 1
VHL-2: Vehicle requirement 2
⋮
VHL-3: Vehicle requirement n

ITC-1: Intersection control requirement 1
ITC-2: Intersection control requirement 2
⋮
ITC-3: Intersection control requirement n

4 Nonfunctional Requirements

4.1 Look and Feel Requirements

4.1.1 Appearance Requirements

Insert Text Here.

4.1.2 Style Requirements

Insert Text Here.

4.2 Usability and Humanity Requirements

4.2.1 Ease of Use Requirements

Insert Text Here.

4.2.2 Personalization and Internationalization Requirements

Insert Text Here.

4.2.3 Learning Requirements

Insert Text Here.

4.2.4 Understandability and Politeness Requirements

Insert Text Here.

4.2.5 Accessibility Requirements

Insert Text Here.

4.3 Performance Requirements

4.3.1 Speed Requirements

Insert Text Here.

4.3.2 Safety-Critical Requirements

Insert Text Here.

4.4 Precision Requirements

Insert Text Here.

4.4.1 Reliability or Availability Requirements

Insert Text Here.

4.4.2 Robustness or Fault-Tolerance Requirements

Insert Text Here.

4.4.3 Capacity Requirements

Insert Text Here.

4.4.4 Scalability or Extensibility Requirements

Insert Text Here.

4.4.5 Longevity Requirements

Insert Text Here.

4.5 Operational an Environmental Requirements

4.5.1 Expected Physical Environment

Insert Text Here.

4.5.2 Requirements for Interacting with Adjacent Systems

Insert Text Here.

4.5.3 Production Requirements

Insert Text Here.

4.5.4 Release Requirements

Insert Text Here.

4.6 Maintainability and Support Requirements

4.6.1 Maintenance Requirements

Insert Text Here.

4.6.2 Supportability Requirements

Insert Text Here.

4.6.3 Adaptability Requirements

Insert Text Here.

4.7 Security Requirements

4.7.1 Access Requirements

Insert Text Here.

4.7.2 Integrity Requirements

Insert Text Here.

4.7.3 Privacy Requirements

Insert Text Here.

4.7.4 Audit Requirements

Insert Text Here.

4.7.5 Immunity Requirements

Insert Text Here.

4.8 Cultural and Political Requirements

4.8.1 Cultural Requirements

Insert Text Here.

4.8.2 Political Requirements

Insert Text Here.

4.9 Legal Requirements

4.9.1 Compliance Requirements

Insert Text Here.

4.9.2 Standards Requirements

Insert Text Here.

5 Project Issues

5.1 Open Issues

Insert Text Here.

5.2 Off-the-Shelf Solutions

Insert Text Here.

5.3 New Problems

Insert Text Here.

5.4 Migration to the New Product

Insert Text Here.

5.5 Risks

Insert Text Here.

5.6 Costs

Insert Text Here.

5.7 User Documentation and Training

Insert Text Here.

5.8 Waiting Room

Insert Text Here.