Cretaceous Gardens Controller

Software Requirements Specification

SRS Version 1.0

Team #3
29 October 2019

CS 460 Software Engineering

Contents

1 Introduction

The purpose of this document is to *specify* the requirements for the development of the Cretaceous Gardens Controller (CGC) for our billionaire philanthropist clients. The specification is formalized and diagrammed in order to guide the eventual implementation of the system. Information encountered in the corresponding *Requirements Definition Document* is reiterated and restated here where relevant.

The CGC must

After this introduction [1], Section **??** gives an overview of the system. Section **??** delves into more detail with subsections **??** and **??** that feature a more granular view of the *Control Logic* and the *External Interfaces*. Section **??** provides the definition of technical terms that will be commonly used.

[1] Introduction and document aesthetics by Ezequiel Ramos

2 General Description

This section [2] *will provide a general overview of the whole system. Providing how the system interacts with the hardware interfaces and introduce the basic functionality of it. It will also describe what parts will be used in the system and what functionality is available for each type. Moreover, the constraints and assumptions for the system will be presented.*

2.1 Product Perspective

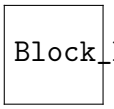

Figure 1: Block Diagram

2.2 Product Functions

[2] General Description by Santiago Marin Cejas

2.3 User Features

2.4 Constraints

2.5 Assumptions

We assume that the infrastructure is all redundent. The CGC is installed on redundent servers. the network backbone has physical redundent links to appropriate devices like the cameras, the PA speakers, and the electric fence. We will also program redundency into the logic. Like the ability to have another car available in case of an emergency or if the car breaks down.

Another assumption is that messages would be encrypted in order to provide the security needed, so the messages can not be intercepted and modified.

3 Specific Requirements

3.1 Interfaces

The Interfaces [3] *make up all the pieces that the CGC communicates with. The CGC itself must communicate with everything, but a lot of interfaces can function on their own. The car interface is an example of one that needs to be able to funtion on it's own.*

Pay Kiosk

[3] External Interfaces by Anas Gauba

Incoming Events

1.

Outgoing Events

1.

Token

Incoming Events

1.

Outgoing Events

1.

Car

Incoming Events

1.

Outgoing Events

1.

T-Rex Monitor

Incoming Events

1.

Outgoing Events

1.

Camera Network

Incoming Events

1.

Outgoing Events

1.

Electric Fence

Incoming Events

1.

Outgoing Events

1.

Global Alarm System

Incoming Events

1.

Outgoing Events

1.

CGC Station

Incoming Events

1.

Outgoing Events

1.

GPS Server

Incoming Events

1.

Outgoing Events

1.

3.2 Control Logic

[4]

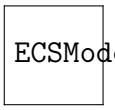

Figure 2: Elevator Control System Normal Function Model

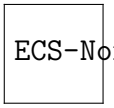

Figure 3: Elevator Control System Normal Function Model

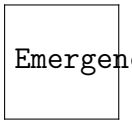

Figure 4: Elevator Control System Normal Function Model

4 Design Constraints

The constraints [5] *on the ECSs software will be fewer than the system as a whole but there will still be constraints present.*

[4]Control Logic by Siri Khalsa
[5]Design Constraints by Matthew Stone

4.1 Client

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4.2 Safety

-

4.3 Regulations

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4.4 Security

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5 Definition of Terms

The following is a list of definitions [6] *of the most commonly used technical terms within this document, whose meaning may not be immediately apparent to the lay reader. Most definitions come from no specific source; instead they are defined by the authors in the context of their use in this document and originate from the vocabulary shared across the general references cited . In the event that a definition was taken directly from a source, it is followed by a citation*

CGC: Acronym for Cretaceous Gardens Controller

DVR: Acronym for Digital Video Recorder

Electrical Conduction: The movement of electrically charged particles through a transmission medium.

GPS: Acronym forGlobal Positioning System

Hardwired Ethernet: This references the latest IEEE standard for Ethernet utilizing physical cables.

[6]Definition of Terms by Anas Gauba

Network: All nodes with which the CGC interacts, the links that connect them to each other and to the CGC, the CGC itself, and all related databases.

Node: The generic term that refers to any device connected to the CGC in any way. This includes autonomous vehicles, tokens, the T.Rex monitor, all electric fence panels, all kiosks, and all cameras.

Safely Inactive: A state in which a vehicle is fully functional and ready to be dispatched.

Safely Occupied: A state in which a vehicle contains at least one person, is locked, and is ready to depart.

Token: An interactive device used by the visitor that grants access to locations.