# Cretaceous Gardens Controller

Software Requirements Specification

SRS Version 1.0

Team #3 29 October 2019

CS 460 Software Engineering

# Contents

1	Intr	oduction	2
<b>2</b>	Gen	eral Description	3
	2.1	Product Perspective	3
	2.2	Product Functions	3
	2.3	User Features	3
	2.4	High Level Constraints	4
	2.5	Assumptions	4
3	Specific Requirements 4		
	3.1	External Interfaces	4
	3.2	Control Logic	9
4	Design Constraints 9		
	4.1	Client	9
	4.2	Safety	9
	4.3	Regulations	9
	4.4	Security	9
5	Sample Use Cases 9		
_	5.1	Bookkeeper	10
	5.2	CGC Station Operator	11
	5.3	Emergency Personnel	12
	5.4	Enclosure Maintenance Personnel	14
	5.5	Guest	15
	5.6	Guest Vehicle	21
	5.7	Network Maintenance Personnel	24
	5.8	Patrol Vehicle	25
	5.9	Sales department	26
	5.10	System Administrator	28
	5.11	System Auditor	29
	5.12		31
	5.13	Tyrannosaurus Rex	32
	5.14	Veterinarian	34
	5.15	Zookeeper	35
6	Defi	nition of Terms	37

## 1 Introduction

The purpose of this document is to *specify* the requirements for the development of the Cretaceous Gardens Controller (CGC). 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.

After this introduction <sup>1</sup>, Section 2 gives an overview of the system. Section 3 delves into more detail with subsections 3.2 and 3.1 that feature a more granular view of the *Control Logic* and the *External Interfaces*. Section 6 provides the definition of technical terms that will be commonly used.

<sup>&</sup>lt;sup>1</sup>Introduction by Ezequiel Ramos

# 2 General Description

This section <sup>2</sup> provides a general overview of the whole system. How the system interacts with the hardware interfaces and its basic functionality are introduced here. A description of parts to be used in the system and the available functionalities for each type are also provided. Some high level constraints and assumptions for the system will be also be presented. It should be noted that a more detailed specification of constraints is covered in its own section.

# 2.1 Product Perspective

## 2.2 Product Functions

### 2.3 User Features

<sup>&</sup>lt;sup>2</sup>General Description by Ezequiel Ramos and Santiago Cejas

## 2.4 High Level Constraints

## 2.5 Assumptions

We assume that the infrastructure is all redundant. The CGC is installed on redundant servers. The network backbone has physical redundant links to appropriate devices like the cameras, the PA speakers, and the electric fence. We will also program redundancy 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

Section Introduction

#### 3.1 External Interfaces

The External Interfaces<sup>3</sup> 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 function on it's own.

#### Pay Kiosk

The Pay Kiosk interface triggers events in situations where the visitor interaction is required.

<sup>&</sup>lt;sup>3</sup>External Interfaces by Anas Gauba

### **Incoming Events**

- 1. Register visitor(demographics)/request money.
- 2. Accept money(type)/build token.

### **Outgoing Events**

- 1. Activate token(id).
- 2. Dispense token(id).
- 3. Dispense change(money, receipt).
- 4. Log transaction.
- 5. Report health status to CGC.

#### Token

The events that the Token interface triggers are specifically related to locate the visitor.

### **Incoming Events**

- 1. Trigger Alarm.
- 2. Return to car(carID).

### **Outgoing Events**

1. Report location to GPS Server(gpsID).

#### Car

The Car interface triggers events in situations where the visitor interacts with the car as well as the internal sensors that the car is communicating with.

### **Incoming Events**

- 1. Read token(tokenID)/Unlock doors or deny access.
- 2. Activate car()[Normal Mode]/Go to south end to pick up visitors.
- 3. Activate car()[Emergency Mode]/Go to north end to pick up visitors.
- 4. Arrived(Destination)[Normal Mode]/pick up or drop off visitors following the conditioned the protocol.
- 5. Arrived(Destination)[Emergency Mode]/pick up or drop off visitors following the conditioned the protocol.
- 6. Weight detected.
- 7. Change driving mode(modeName).
- 8. Activate intercom.

### **Outgoing Events**

- 1. The GPS current location(id).
- 2. Alert visitors(carID).
- 3. Trigger alarm.
- 4. Report health status to CGC.

#### **T-Rex Monitor**

The T-Rex Monitor interface triggers events in situations where the actions of T Rex can be monitored appropriately.

### **Incoming Events**

1. Inject tranquilizer.

### **Outgoing Events**

- 1. Report T-Rex health.
- 2. Report health status to CGC.
- 3. Report location to GPS Server(gpsID).

#### Camera Network

The Camera Network interface triggers events in situations where each specific cameras operations can be easily monitored.

### **Incoming Events**

- 1. Delete recording(cameraID, date range).
- 2. Activate recording(cameraID).
- 3. Monitor streaming(cameraID).

### **Outgoing Events**

- 1. Camera outage(cameraID).
- 2. Report health status to CGC.

#### **Electric Fence**

The Electric Fence interface triggers events in the case of any possible distortion in the panels.

### **Incoming Events**

1. Null.

### **Outgoing Events**

- 1. Electricity distortion/trigger an emergency mode.
- 2. Report health status to CGC.

#### Global Alarm System

The Global Alarm System interface triggers events in situations whenever there are annoucements to be made all across the park.

#### **Incoming Events**

- 1. Trigger alarms[Emergency Mode]/play emergency alarm sound.
- 2. Trigger alarms[Normal Mode]/play Public Service Annoucement (PSA).
- 3. Disable alarms.

## **Outgoing Events**

1. Report health status to CGC.

#### **CGC Station**

The CGC Station interface triggers events in situations where an employee has to respond in specific situations.

#### **Incoming Events**

1. Review health status of all the associated devices.

### **Outgoing Events**

- 1. Activate tranquilizer.
- 2. Deactivate emergency mode.
- 3. Activate intercom.

#### **GPS** Server

The GPS Server interface triggers events in situations of tracking the gps devices.

## **Incoming Events**

1. Track location(gpsID).

## **Outgoing Events**

1. Report location(gpsID).

## 3.2 Control Logic

4

# 4 Design Constraints

Section Intro

### 4.1 Client

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## 4.2 Safety

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# 4.3 Regulations

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# 4.4 Security

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# 5 Sample Use Cases

intro saying categorized by actor with diagrams blah blah blah these uses are just samples

<sup>&</sup>lt;sup>4</sup>Control Logic by Siri Khalsa

## 5.1 Bookkeeper

brief description of actor

Use Case: \*DoSomething (the name of the action to be executed by actor)\*

**Primary Actor:** \*ThatWhichWishesToDoSomething (name of actor)\*

Goal in Context: \*that which is to be accomplished by the action\*

Preconditions: \*states of the actor and system prior to the action\*

**Trigger:** \*that which initiates the action (e.g. actor breaks out of enclosure)\*

Scenario: \*sequence of actions from trigger to goal\*

- 1. first event
- 2. second event
- 3. ...

Exceptions: \*edge cases, potential hazards, errors, etc\*

```
some exception some other exception
```

...

**Priority:** \*level of implementation importance (e.g. correct change is a must)\*

When Available: \*when or during which interval of time the action is to supported by the system\*

Frequency of Use: \*number of uses per unit of time (e.g. annually, billions per second, etc)\*

Channel to Primary Actor: \*means through which the system interacts with actor\*

Channels to Secondary Actors: \*means through which the primary and secondary actors interact\*

some channel some other channel

**Secondary Actors:** \*intermediary or auxillary actors required to complete the goal\*

**Open Issues:** \*itemization of current problems with any of the above\*

some issue some other issue

...

## 5.2 CGC Station Operator

brief description of actor

Use Case: \*DoSomething (the name of the action to be executed by actor)\*

**Primary Actor:** \*ThatWhichWishesToDoSomething (name of actor)\*

Goal in Context: \*that which is to be accomplished by the action\*

Preconditions: \*states of the actor and system prior to the action\*

**Trigger:** \*that which initiates the action (e.g. actor breaks out of enclosure)\*

Scenario: \*sequence of actions from trigger to goal\*

- 1. first event
- 2. second event
- 3. ...

Exceptions: \*edge cases, potential hazards, errors, etc\*

```
some exception some other exception
```

**Priority:** \*level of implementation importance (e.g. correct change is a must)\*

When Available: \*when or during which interval of time the action is to supported by the system\*

Frequency of Use: \*number of uses per unit of time (e.g. annually, billions per second, etc)\*

Channel to Primary Actor: \*means through which the system interacts with actor\*

Channels to Secondary Actors: \*means through which the primary and secondary actors interact\*

```
some channel some other channel
```

**Secondary Actors:** \*intermediary or auxillary actors required to complete the goal\*

Open Issues: \*itemization of current problems with any of the above\*

```
some issue some other issue
```

## 5.3 Emergency Personnel

brief description of actor

Use Case: \*DoSomething (the name of the action to be executed by actor)\*

**Primary Actor:** \*ThatWhichWishesToDoSomething (name of actor)\*

Goal in Context: \*that which is to be accomplished by the action\*

**Preconditions:** \*states of the actor and system prior to the action\*

**Trigger:** \*that which initiates the action (e.g. actor breaks out of enclosure)\*

Scenario: \*sequence of actions from trigger to goal\*

- 1. first event
- 2. second event
- 3. ...

Exceptions: \*edge cases, potential hazards, errors, etc\*

```
some exception some other exception
```

**Priority:** \*level of implementation importance (e.g. correct change is a must)\*

When Available: \*when or during which interval of time the action is to supported by the system\*

Frequency of Use: \*number of uses per unit of time (e.g. annually, billions per second, etc)\*

Channel to Primary Actor: \*means through which the system interacts with actor\*

Channels to Secondary Actors: \*means through which the primary and secondary actors interact\*

some channel

some other channel

. . .

**Secondary Actors:** \*intermediary or auxillary actors required to complete the goal\*

**Open Issues:** \*itemization of current problems with any of the above\*

some issue

some other issue

...

#### 5.4 Enclosure Maintenance Personnel

brief description of actor

Use Case: \*DoSomething (the name of the action to be executed by actor)\*

**Primary Actor:** \*ThatWhichWishesToDoSomething (name of actor)\*

Goal in Context: \*that which is to be accomplished by the action\*

Preconditions: \*states of the actor and system prior to the action\*

**Trigger:** \*that which initiates the action (e.g. actor breaks out of enclosure)\*

Scenario: \*sequence of actions from trigger to goal\*

- 1. first event
- 2. second event
- 3. ...

Exceptions: \*edge cases, potential hazards, errors, etc\*

some exception

some other exception

...

**Priority:** \*level of implementation importance (e.g. correct change is a must)\*

When Available: \*when or during which interval of time the action is to supported by the system\*

Frequency of Use: \*number of uses per unit of time (e.g. annually, billions per second, etc)\*

Channel to Primary Actor: \*means through which the system interacts with actor\*

Channels to Secondary Actors: \*means through which the primary and secondary actors interact\*

```
some channel some other channel
```

**Secondary Actors:** \*intermediary or auxillary actors required to complete the goal\*

**Open Issues:** \*itemization of current problems with any of the above\*

```
some issue some other issue
```

#### 5.5 Guest

brief description of actor

Use Case: \*DoSomething (the name of the action to be executed by actor)\*

**Primary Actor:** \*ThatWhichWishesToDoSomething (name of actor)\*

Goal in Context: \*that which is to be accomplished by the action\*

**Preconditions:** \*states of the actor and system prior to the action\*

**Trigger:** \*that which initiates the action (e.g. actor breaks out of enclosure)\*

Scenario: \*sequence of actions from trigger to goal\*

- 1. first event
- 2. second event
- 3. ...

Exceptions: \*edge cases, potential hazards, errors, etc\*

```
some exception some other exception
```

• • •

**Priority:** \*level of implementation importance (e.g. correct change is a must)\*

When Available: \*when or during which interval of time the action is to supported by the system\*

Frequency of Use: \*number of uses per unit of time (e.g. annually, billions per second, etc)\*

Channel to Primary Actor: \*means through which the system interacts with actor\*

Channels to Secondary Actors: \*means through which the primary and secondary actors interact\*

```
some channel some other channel
```

**Secondary Actors:** \*intermediary or auxillary actors required to complete the goal\*

**Open Issues:** \*itemization of current problems with any of the above\*

some issue

some other issue

...

Use Case: \*DoSomething (the name of the action to be executed by actor)\*

**Primary Actor:** \*ThatWhichWishesToDoSomething (name of actor)\*

Goal in Context: \*that which is to be accomplished by the action\*

**Preconditions:** \*states of the actor and system prior to the action\*

**Trigger:** \*that which initiates the action (e.g. actor breaks out of enclosure)\*

Scenario: \*sequence of actions from trigger to goal\*

- 1. first event
- 2. second event
- 3. ...

Exceptions: \*edge cases, potential hazards, errors, etc\*

some exception some other exception

...

**Priority:** \*level of implementation importance (e.g. correct change is a must)\*

When Available: \*when or during which interval of time the action is to supported by the system\*

Frequency of Use: \*number of uses per unit of time (e.g. annually, billions per second, etc)\*

Channel to Primary Actor: \*means through which the system interacts with actor\*

Channels to Secondary Actors: \*means through which the primary and secondary actors interact\*

```
some channel some other channel
```

**Secondary Actors:** \*intermediary or auxillary actors required to complete the goal\*

**Open Issues:** \*itemization of current problems with any of the above\*

```
some issue some other issue
```

Use Case: \*DoSomething (the name of the action to be executed by

**Primary Actor:** \*ThatWhichWishesToDoSomething (name of actor)\*

Goal in Context: \*that which is to be accomplished by the action\*

Preconditions: \*states of the actor and system prior to the action\*

**Trigger:** \*that which initiates the action (e.g. actor breaks out of enclosure)\*

Scenario: \*sequence of actions from trigger to goal\*

- 1. first event
- 2. second event
- 3. ...

actor)\*

Exceptions: \*edge cases, potential hazards, errors, etc\*

```
some exception some other exception
```

. . .

**Priority:** \*level of implementation importance (e.g. correct change is a must)\*

When Available: \*when or during which interval of time the action is to supported by the system\*

Frequency of Use: \*number of uses per unit of time (e.g. annually, billions per second, etc)\*

Channel to Primary Actor: \*means through which the system interacts with actor\*

Channels to Secondary Actors: \*means through which the primary and secondary actors interact\*

```
some channel some other channel
```

• • •

Secondary Actors: \*intermediary or auxillary actors required to complete the goal\*

Open Issues: \*itemization of current problems with any of the above\*

```
some issue some other issue
```

...

Use Case: \*DoSomething (the name of the action to be executed by actor)\*

**Primary Actor:** \*ThatWhichWishesToDoSomething (name of actor)\*

Goal in Context: \*that which is to be accomplished by the action\*

**Preconditions:** \*states of the actor and system prior to the action\*

**Trigger:** \*that which initiates the action (e.g. actor breaks out of enclosure)\*

Scenario: \*sequence of actions from trigger to goal\*

- 1. first event
- 2. second event
- 3. ...

Exceptions: \*edge cases, potential hazards, errors, etc\*

```
some exception some other exception
```

•••

**Priority:** \*level of implementation importance (e.g. correct change is a must)\*

When Available: \*when or during which interval of time the action is to supported by the system\*

Frequency of Use: \*number of uses per unit of time (e.g. annually, billions per second, etc)\*

Channel to Primary Actor: \*means through which the system interacts with actor\*

Channels to Secondary Actors: \*means through which the primary and secondary actors interact\*

```
some channel some other channel
```

**Secondary Actors:** \*intermediary or auxillary actors required to complete the goal\*

**Open Issues:** \*itemization of current problems with any of the above\*

some issue

some other issue

...

#### 5.6 Guest Vehicle

brief description of actor

Use Case: \*DoSomething (the name of the action to be executed by actor)\*

**Primary Actor:** \*ThatWhichWishesToDoSomething (name of actor)\*

Goal in Context: \*that which is to be accomplished by the action\*

**Preconditions:** \*states of the actor and system prior to the action\*

**Trigger:** \*that which initiates the action (e.g. actor breaks out of enclosure)\*

Scenario: \*sequence of actions from trigger to goal\*

- 1. first event
- 2. second event
- 3. ...

Exceptions: \*edge cases, potential hazards, errors, etc\*

some exception

some other exception

. . .

**Priority:** \*level of implementation importance (e.g. correct change is a must)\*

When Available: \*when or during which interval of time the action is to supported by the system\*

Frequency of Use: \*number of uses per unit of time (e.g. annually, billions per second, etc)\*

Channel to Primary Actor: \*means through which the system interacts with actor\*

Channels to Secondary Actors: \*means through which the primary and secondary actors interact\*

```
some channel some other channel
```

**Secondary Actors:** \*intermediary or auxillary actors required to complete the goal\*

**Open Issues:** \*itemization of current problems with any of the above\*

```
some issue some other issue
```

Use Case: \*DoSomething (the name of the action to be executed by actor)\*

**Primary Actor:** \*ThatWhichWishesToDoSomething (name of actor)\*

Goal in Context: \*that which is to be accomplished by the action\*

**Preconditions:** \*states of the actor and system prior to the action\*

**Trigger:** \*that which initiates the action (e.g. actor breaks out of enclosure)\*

Scenario: \*sequence of actions from trigger to goal\*

- 1. first event
- 2. second event
- 3. ...

Exceptions: \*edge cases, potential hazards, errors, etc\*

```
some exception some other exception
```

**Priority:** \*level of implementation importance (e.g. correct change is a must)\*

When Available: \*when or during which interval of time the action is to supported by the system\*

Frequency of Use: \*number of uses per unit of time (e.g. annually, billions per second, etc)\*

Channel to Primary Actor: \*means through which the system interacts with actor\*

Channels to Secondary Actors: \*means through which the primary and secondary actors interact\*

```
some channel some other channel
```

**Secondary Actors:** \*intermediary or auxillary actors required to complete the goal\*

**Open Issues:** \*itemization of current problems with any of the above\*

```
some issue some other issue
```

### 5.7 Network Maintenance Personnel

brief description of actor

Use Case: \*DoSomething (the name of the action to be executed by actor)\*

**Primary Actor:** \*ThatWhichWishesToDoSomething (name of actor)\*

Goal in Context: \*that which is to be accomplished by the action\*

Preconditions: \*states of the actor and system prior to the action\*

**Trigger:** \*that which initiates the action (e.g. actor breaks out of enclosure)\*

Scenario: \*sequence of actions from trigger to goal\*

- 1. first event
- 2. second event
- 3. ...

Exceptions: \*edge cases, potential hazards, errors, etc\*

some exception some other exception

. . .

**Priority:** \*level of implementation importance (e.g. correct change is a must)\*

When Available: \*when or during which interval of time the action is to supported by the system\*

Frequency of Use: \*number of uses per unit of time (e.g. annually, billions per second, etc)\*

Channel to Primary Actor: \*means through which the system interacts with actor\*

Channels to Secondary Actors: \*means through which the primary and secondary actors interact\*

```
some channel some other channel
```

**Secondary Actors:** \*intermediary or auxillary actors required to complete the goal\*

Open Issues: \*itemization of current problems with any of the above\*

```
some issue some other issue
```

...

#### 5.8 Patrol Vehicle

brief description of actor

Use Case: \*DoSomething (the name of the action to be executed by actor)\*

**Primary Actor:** \*ThatWhichWishesToDoSomething (name of actor)\*

Goal in Context: \*that which is to be accomplished by the action\*

Preconditions: \*states of the actor and system prior to the action\*

**Trigger:** \*that which initiates the action (e.g. actor breaks out of enclosure)\*

Scenario: \*sequence of actions from trigger to goal\*

- 1. first event
- 2. second event
- 3. ...

Exceptions: \*edge cases, potential hazards, errors, etc\*

```
some exception some other exception
```

**Priority:** \*level of implementation importance (e.g. correct change is a must)\*

When Available: \*when or during which interval of time the action is to supported by the system\*

Frequency of Use: \*number of uses per unit of time (e.g. annually, billions per second, etc)\*

Channel to Primary Actor: \*means through which the system interacts with actor\*

Channels to Secondary Actors: \*means through which the primary and secondary actors interact\*

```
some channel some other channel
```

**Secondary Actors:** \*intermediary or auxillary actors required to complete the goal\*

Open Issues: \*itemization of current problems with any of the above\*

```
some issue some other issue
```

## 5.9 Sales department

brief description of actor

Use Case: \*DoSomething (the name of the action to be executed by actor)\*

**Primary Actor:** \*ThatWhichWishesToDoSomething (name of actor)\*

Goal in Context: \*that which is to be accomplished by the action\*

**Preconditions:** \*states of the actor and system prior to the action\*

**Trigger:** \*that which initiates the action (e.g. actor breaks out of enclosure)\*

Scenario: \*sequence of actions from trigger to goal\*

- 1. first event
- 2. second event
- 3. ...

Exceptions: \*edge cases, potential hazards, errors, etc\*

some exception some other exception

**Priority:** \*level of implementation importance (e.g. correct change is a must)\*

When Available: \*when or during which interval of time the action is to supported by the system\*

Frequency of Use: \*number of uses per unit of time (e.g. annually, billions per second, etc)\*

Channel to Primary Actor: \*means through which the system interacts with actor\*

Channels to Secondary Actors: \*means through which the primary and secondary actors interact\*

some channel

some other channel

. . .

**Secondary Actors:** \*intermediary or auxillary actors required to complete the goal\*

**Open Issues:** \*itemization of current problems with any of the above\*

some issue

some other issue

...

## 5.10 System Administrator

brief description of actor

Use Case: \*DoSomething (the name of the action to be executed by actor)\*

**Primary Actor:** \*ThatWhichWishesToDoSomething (name of actor)\*

Goal in Context: \*that which is to be accomplished by the action\*

**Preconditions:** \*states of the actor and system prior to the action\*

**Trigger:** \*that which initiates the action (e.g. actor breaks out of enclosure)\*

Scenario: \*sequence of actions from trigger to goal\*

- 1. first event
- 2. second event
- 3. ...

Exceptions: \*edge cases, potential hazards, errors, etc\*

some exception

some other exception

...

**Priority:** \*level of implementation importance (e.g. correct change is a must)\*

When Available: \*when or during which interval of time the action is to supported by the system\*

Frequency of Use: \*number of uses per unit of time (e.g. annually, billions per second, etc)\*

Channel to Primary Actor: \*means through which the system interacts with actor\*

Channels to Secondary Actors: \*means through which the primary and secondary actors interact\*

```
some channel some other channel
```

• • •

**Secondary Actors:** \*intermediary or auxillary actors required to complete the goal\*

Open Issues: \*itemization of current problems with any of the above\*

```
some issue some other issue
```

...

# 5.11 System Auditor

brief description of actor

Use Case: \*DoSomething (the name of the action to be executed by actor)\*

**Primary Actor:** \*ThatWhichWishesToDoSomething (name of actor)\*

Goal in Context: \*that which is to be accomplished by the action\*

**Preconditions:** \*states of the actor and system prior to the action\*

**Trigger:** \*that which initiates the action (e.g. actor breaks out of enclosure)\*

Scenario: \*sequence of actions from trigger to goal\*

- 1. first event
- 2. second event
- 3. ...

Exceptions: \*edge cases, potential hazards, errors, etc\*

```
some exception some other exception
```

...

**Priority:** \*level of implementation importance (e.g. correct change is a must)\*

When Available: \*when or during which interval of time the action is to supported by the system\*

Frequency of Use: \*number of uses per unit of time (e.g. annually, billions per second, etc)\*

Channel to Primary Actor: \*means through which the system interacts with actor\*

Channels to Secondary Actors: \*means through which the primary and secondary actors interact\*

```
some channel some other channel
```

Secondary Actors: \*intermediary or auxillary actors required to complete the goal\*

**Open Issues:** \*itemization of current problems with any of the above\*

some issue

some other issue

...

## 5.12 System Technician

brief description of actor

Use Case: \*DoSomething (the name of the action to be executed by actor)\*

**Primary Actor:** \*ThatWhichWishesToDoSomething (name of actor)\*

Goal in Context: \*that which is to be accomplished by the action\*

**Preconditions:** \*states of the actor and system prior to the action\*

**Trigger:** \*that which initiates the action (e.g. actor breaks out of enclosure)\*

Scenario: \*sequence of actions from trigger to goal\*

- 1. first event
- 2. second event
- 3. ...

Exceptions: \*edge cases, potential hazards, errors, etc\*

some exception some other exception

•••

**Priority:** \*level of implementation importance (e.g. correct change is a must)\*

When Available: \*when or during which interval of time the action is to supported by the system\*

Frequency of Use: \*number of uses per unit of time (e.g. annually, billions per second, etc)\*

Channel to Primary Actor: \*means through which the system interacts with actor\*

Channels to Secondary Actors: \*means through which the primary and secondary actors interact\*

```
some channel some other channel
```

**Secondary Actors:** \*intermediary or auxillary actors required to complete the goal\*

Open Issues: \*itemization of current problems with any of the above\*

```
some issue some other issue
```

## 5.13 Tyrannosaurus Rex

brief description of actor

Use Case: LeaveEnclosure

Primary Actor: The main exhibit, the mighty T.Rex

Goal in Context: To get somewhere that happens to be outside the enclosure.

**Preconditions:** Actor is not sedated, the system is not in maintenance mode nor emergency mode, and the enclosure is operational.

**Trigger:** The T.Rex sees or smells something outside the enclosure.

#### Scenario:

- 1. The actor looks through the enclosure, toward an imagined nearfuture destination beyond the enclosure.
- 2. The actor walks toward the target destination.
- 3. The actor is impeded by the electric fence.
- 4. The actor becomes fearful.
  - (a) The actor retreats from the fence.

OR

- (b) The actor attacks the fence.
- 5. The electric fence increases its voltage.
- 6. The scenario may repeat from either act 1, from act 3, or continues such that:
  - (a) the enclosure is breached and the actor heads toward the target destination.

OR

(b) the actor relinquishes the desire to head toward the target destination.

Exceptions: \*edge cases, potential hazards, errors, etc\*

Actor Perishes.

...

**Priority:** \*level of implementation importance (e.g. correct change is a must)\*

When Available: \*when or during which interval of time the action is to supported by the system\*

Frequency of Use: \*number of uses per unit of time (e.g. annually, billions per second, etc)\*

Channel to Primary Actor: \*means through which the system interacts with actor\*

Channels to Secondary Actors: \*means through which the primary and secondary actors interact\*

some channel some other channel

**Secondary Actors:** \*intermediary or auxillary actors required to complete the goal\*

Open Issues: \*itemization of current problems with any of the above\*

some issue some other issue

...

### 5.14 Veterinarian

brief description of actor

Use Case: \*DoSomething (the name of the action to be executed by actor)\*

**Primary Actor:** \*ThatWhichWishesToDoSomething (name of actor)\*

Goal in Context: \*that which is to be accomplished by the action\*

Preconditions: \*states of the actor and system prior to the action\*

**Trigger:** \*that which initiates the action (e.g. actor breaks out of enclosure)\*

Scenario: \*sequence of actions from trigger to goal\*

- 1. first event
- 2. second event
- 3. ...

Exceptions: \*edge cases, potential hazards, errors, etc\*

```
some exception some other exception
```

**Priority:** \*level of implementation importance (e.g. correct change is a must)\*

When Available: \*when or during which interval of time the action is to supported by the system\*

Frequency of Use: \*number of uses per unit of time (e.g. annually, billions per second, etc)\*

Channel to Primary Actor: \*means through which the system interacts with actor\*

Channels to Secondary Actors: \*means through which the primary and secondary actors interact\*

```
some channel some other channel
```

**Secondary Actors:** \*intermediary or auxillary actors required to complete the goal\*

Open Issues: \*itemization of current problems with any of the above\*

```
some issue some other issue
```

# 5.15 Zookeeper

brief description of actor

Use Case: \*DoSomething (the name of the action to be executed by actor)\*

**Primary Actor:** \*ThatWhichWishesToDoSomething (name of actor)\*

Goal in Context: \*that which is to be accomplished by the action\*

**Preconditions:** \*states of the actor and system prior to the action\*

**Trigger:** \*that which initiates the action (e.g. actor breaks out of enclosure)\*

Scenario: \*sequence of actions from trigger to goal\*

- 1. first event
- 2. second event
- 3. ...

Exceptions: \*edge cases, potential hazards, errors, etc\*

```
some exception some other exception
```

**Priority:** \*level of implementation importance (e.g. correct change is a must)\*

When Available: \*when or during which interval of time the action is to supported by the system\*

Frequency of Use: \*number of uses per unit of time (e.g. annually, billions per second, etc)\*

Channel to Primary Actor: \*means through which the system interacts with actor\*

Channels to Secondary Actors: \*means through which the primary and secondary actors interact\*

some channel

some other channel

. . .

**Secondary Actors:** \*intermediary or auxillary actors required to complete the goal\*

Open Issues: \*itemization of current problems with any of the above\*

some issue

some other issue

...

## 6 Definition of Terms

The following is a list of definitions <sup>5</sup> 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:** Global Positioning System

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

**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.

<sup>&</sup>lt;sup>5</sup>Definition of Terms by Anas Gauba

**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.