

Autonomous Pool Playing Robot

Low-Level Software Design

Ernest Selman
selmae@mcmaster.ca
1201291

Guy Meyer
meyerg@mcmaster.ca
1320231

Eric Le Fort
leforte@mcmaster.ca
1308609

Andrew Danha
danhaas@mcmaster.ca
1223881

Derek Savery
saverydj@mcmaster.ca
1219142

Max Moore
moorem8@mcmaster.ca
1320009

January 5, 2017

Contents

1 Overview 2

1.1 Naming Conventions & Definitions 2

1.1.1 Definitions 3

1.1.2 Acronyms & Abbreviations 3

2 Hazards 3

2.1 HAZARD-NAME 3

2.2 HAZARD-NAME 3

List of Tables

1 Revision History 1

2 Definitions 3

3 Acronyms and Abbreviations 3

List of Figures

Date	Revision #	Comments	Authors
05/01/2017	0	- Initial document creation	Eric Le Fort

Table 1: Revision History

1 Overview

1.1 Naming Conventions & Definitions

This section outlines the various definitions, acronyms and abbreviations that will be used throughout this document in order to familiarize the reader prior to reading.

1.1.1 Definitions

Table 2 lists the definitions used in this document. The definitions given below are specific to this document and may not be identical to definitions of these terms in common use. The purpose of this section is to assist the user in understanding the requirements for the system.

Table 2: Definitions

Term	Meaning
X-axis	Distance along the length of the pool table
Y-axis	Distance across the width of the pool table
Z-axis	Height above the pool table
End-effector	The end of the arm that will strike the cue ball
θ	Rotational angle of end-effector
Cue	End-effector
Personal Computer	A laptop that will be used to run the more involved computational tasks such as visual recognition and the shot selection algorithm
Camera	Some form of image capture device (e.g. a digital camera, smartphone with a camera, etc.)
Table State	The current positions of all the balls on the table
Entity	Classes that have a state, behaviour and identity (e.g. Book, Car, Person, etc.)
Boundary	Classes that interact with users or external systems

1.1.2 Acronyms & Abbreviations

Table 3 lists the acronyms and abbreviations used in this document.

Table 3: Acronyms and Abbreviations

Acronym/Abbreviation	Meaning
VR	Visual Recognition
PC	Personal Computer
μC	Micro-Controller
CRC	Class Responsibility Collaboration

2 Hazards

2.1 HAZARD-NAME

2.2 HAZARD-NAME