Hazard Analysis
Chess Connect

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Table 1: Revision History

Date	Developer(s)	Change
Date1	Name(s)	Description of changes
Date2	Name(s)	Description of changes
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Contents

1 Introduction

2 Scope and Purpose of Hazard Analysis

3 System Boundaries and Components

4 Critical Assumptions

5 Failure Mode and Effect Analysis

The following table (Table 2) is a breakdown of the failure modes and and effects analysis (FMEA) for the Chess Connect system.

6 Safety and Security Requirements

6.1 Access Requirements

ACR1. Example

6.2 Integrity Requirements

INR2. Example

6.3 Privacy Requirements

PRR3. Example

6.4 Audit Requirements

ADR4. Example

6.5 Immunity Requirements

IMR5. Example

7 Roadmap

[Which safety requirements will be implemented as part of the capstone timeline? Which requirements will be implemented in the future? —SS]

Component	Failure	Causes	Detection	Recommended Action	Probability of Occurence	Ref.
Web Application	Loss of Internet connection	(a) Internet outage (b) Loss of power (c) Internet time-out	Ping the Internet and wait for the response	Alert the user to check Internet connection	0.3	TBD
Microcontroller	Bad inputs	(a) If a player knocks down multiple pieces in their turn (b) Loss of power (c) Faulty components and/or connections	Monitoring inputs	Prompt the user to return the system to previous state and redo the turn	0.4	TBD
Microcontroller	Loss of Bluetooth connection	(a) Distance between microcontroller and host is too large (b) Physical barriers between microcontroller and host (c) Failed to initialise connection	Continuously monitor Bluetooth connection	Prompt user to re-establish connection before continuing	0.2	TBD
Hall Sensor	Bad inputs	(a) Sensitivity loss over a period of time (b) Interference from external magnetic objects (c) Distance between sensor and object too large	Monitoring Hall sensor inputs	(a) Prompt the user to clear area of obstacles from the board (b) The sensor should be replaced after the recommended use time	0.1	TBD

Table 2: Failure Mode and Effects Analysis