

BatSignal: System Design Document

Bryan Young
youngb2@wit.edu

Joe Moraal
moraalj@wit.edu

Zach Thornton
thorntonz@wit.edu

Computer Science 2015
Wentworth Institute of Technology

1 June 2015

Contents

1	Introduction	3
1.1	Purpose and Scope	3
1.2	Project Executive Summary	3
1.2.1	System Overview	4
1.2.2	Design Constraints	4
1.2.3	Future Contingencies	4
1.3	Document Organization	4
1.4	Points of Contact	4
1.5	Project References	4
1.6	Glossary	4
2	System Architecture	4
2.1	System Hardware Architecture	4
2.2	System Software Architecture	4
2.3	Internal Communications Architecture	4
3	Human-Machine Interface	4
3.1	Inputs	4
3.2	Outputs	4
4	Detailed Design	4
4.1	Hardware Detailed Design	4
4.2	Software Detailed Design	4
A	Appendix	4

1 Introduction

1.1 Purpose and Scope

This document describes the hardware and software components of the BatSignal distributed sensor network. This document is intended for use by developers implementing BatSignal.

1.2 Project Executive Summary

BatSignal is a distributed sensor network designed to collect audio and analyze the captures for cues indicating distress or emergency, and to alert staff of such situations. The system is designed to be physically scaled according to the needs of the location of installation.

1.2.1	System Overview
1.2.2	Design Constraints
1.2.3	Future Contingencies
1.3	Document Organization
1.4	Points of Contact
1.5	Project References
1.6	Glossary
2	System Architecture
2.1	System Hardware Architecture
2.2	System Software Architecture
2.3	Internal Communications Architecture
3	Human-Machine Interface
3.1	Inputs
3.2	Outputs
4	Detailed Design
4.1	Hardware Detailed Design
4.2	Software Detailed Design
A	Appendix