

# SENG2011

## Project Report

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### 1 Executive Summary

Project Vampire is an electronic records management system for the handling of medical blood inventories.

The project aims to replace paper-based records systems, with the usual benefits of digital records management - such as reducing costs and improving usability. However, there are some concerns as to whether a digital system can be relied upon to manage a critical resource with human lives at stake. To provide assurance, our system uses formal verification techniques to ensure that it conforms to safety requirements.

Our system integrates with pre-existing business processes of blood inventory management. For example, there are built-in processes for the expiration of blood, distinction between blood types, requests and acceptance of donated blood, to list a few.

Our system comprises of a graphical interface that interacts with a verified data store service. The implementation details will be detailed in their respective sections.

Our final project and report will describe a minimum viable product to demonstrate that safety and assurance requirements can be met with a digital records management system.

## 2 Requirements

### 2.1 Stakeholders

- **Blood inventory staff [Vampire employee]**
  - ★ Handles the physical delivery of requested blood to hospitals.
  - ★ Physically disposes of expired blood by sending it to a blood disposal service.
- **Hospital staff**
  - ★ Can request blood to treat patients.
  - ★ Can query the level of different types of blood in Vampire's inventory.
- **Batmobile admin [Vampire employee]**
  - ★ Deposits blood into the system.
- **Pathology staff**
  - ★ Tests all blood within the system.
- **Blood donor**
  - ★ Donates blood to the Batmobile.
  - ★ Can see the outcome of their blood donation.
- **Emergency donor**
  - ★ Upon hitting a critically low supply of blood in the system, these people will donate blood via the Batmobile.
- **Headquarters**
  - ★ Business owners.
  - ★ Manage all critical and sensitive actions.
- **Blood dump**
  - ★ Will eliminate blood in a medically suitable fashion.
- **Blood donation facility**
  - ★ Will work in conjunction with the Batmobile to offer a venue in which blood donors are able to visit to donate blood.

## 2.2 Priority Description

- **P1 (Priority 1, Must have)**

- ★ All these requirements form the minimum viable product, crucial to launch.

- **P2 (Priority 2, Should have)**

- ★ All these requirements should be done in the time frame, but are not critical to launch, can be delayed for future release.

- **P3 (Priority 3, Could have)**

- ★ All these requirements are features we would like, but in the time frame we may delay them to future releases to focus on priority 1 and priority 2.

- **P4 (Priority 4, Would have)**

- ★ Features we do not expect to have but show the road map of where we see our product down the line.

## 2.3 Requirements List

- 1.