**1. Introduction**

1. **Purpose**

This document provides a detailed view of the architecture and the user interface design of the CLup system. Building on the RASD document, it gives a more refined technical and functional description of the system, explaining it on a much lower level. To provide the full description of the system, UML diagrams will be used since they are the de facto industry standard. While actual implementation is not part of the document, it outlines the presumed implementation, integration and test plan, to help the software development team in the realization of the application. The purpose of the document is primarily to guide software developers, but it can also provide useful information to end users and investors.

1. **Scope**

CLup is a simple application that helps store managers with handling large crowds inside their store and store customers with planning more efficient and safe grocery shops. The target audience for this application includes every person that shops for groceries in a store, which includes almost all demographics fall into this category. Faced with a worldwide pandemic of the COVID-19 virus countries across the world imposed strict health measures in line with the recommendations of the WHO. To combat the spread of the virus, governments introduced decrees that limited the movement of the population to a certain degree. Only essential movement, such as: going to work, grocery shopping or outdoor exercise, was deemed acceptable. Although successful in the mitigation of the disease, the act put a serious strain on society on many levels. To help reduce the stress and anxiety, many aspects of everyday life involving close contact can be considered and improved upon. This project aims to help with, and resolve the issues surrounding grocery shopping. As we all know, grocery shopping is an essential activity which involves close contact inside the store. Since the COVID-19 virus spreads mainly through airborne particles, this activity plays a key role in its mitigation. To reduce crowding inside the stores, supermarkets need to restrict access to their store and keep the number of people inside below the optimal maximum capacity. The main idea is to enable store customers to enter a queue from home (or wherever they find themselves) through simple interaction with the application. Besides that, the application will give customers the option to "book a visit" to the grocery store. This feature will allow them to view available time slots for their grocery shop, book the most convenient one, and optionally indicate an approximated duration of their visit to further improve the accuracy of the waiting time estimation of the system.

1. **Definitions, Abbreviations, Acronyms**
   1. WHO-World Health Organization
   2. RASD-Requirements Analysis and Specification Document
2. **Revision history**
3. **Reference documents**
4. **Document structure**

**2. ARCHITECTURAL DESIGN**

1. **Overview:** High-level components and their interaction
2. **Component view**
3. **Deployment view**
4. **Runtime view:**You can use sequence diagrams to describe the way components interact to accomplish specific tasks typically related to your use cases
5. **Component interfaces**
6. **Selected architectural styles and patterns:** Please explain which styles/patterns you used, why, and how
7. **Other design decisions**