Vision Document

for

Hot Zone System

Version 1.0 approved

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Revision History

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| --- | --- | --- | --- |
| **Name** | **Date** | **Reason For Changes** | **Version** |
| Wong Ka Ngai | 13/10/20 | Initial draft | 1.0 draft |
|  |  |  |  |

# Business Requirements

## Background

The current SARS-CoV-2 epidemic in Hong Kong is once again becoming more severe. In a bid to better understand transmission of the virus and hence get it under control, epidemiologists from the Centre for Health Protection (CHP) have focused on the histories of contacts between cases. Some clusters of infections are identified and thus transmission chains within them are determined. However, it is extremely time consuming to identify clusters based on contact tracing and clusters associated with environmental transmission may be missed. The outbreak of SARS at the Amoy Gardens back in 2003 had proven that environmental transmission is important in epidemic. Identifying clusters of cases linked by location can give early warning of possible hot-zones of infection to infection, so that it is easier to get the condition under control.

## Business Opportunity

CHP has requested a system to identify clusters of cases linked by location to get early warning of possible hot-zones of infection. Currently all data are managed using Excel spreadsheets and it has no method to cluster case by locations visited. Epidemiologists can analyze by themselves but it is time consuming and some locations may be missed. Such a system not only would save time, but also allow CHP to alert the public, do early investigation and contain the spread of the virus in those zones. This system can be further extended to analyze data from previous viral epidemics to find clusters that were not previously identified. With such system, CHP are more prepared to face future epidemics and can quickly identify hot-zones.

## Vision Statement

For CHP who wish to improve the quality and efficiency of location data recording and perform clustering, the Hot Zone System is a web application that will allow CHP staff to maintain records, cluster cases and visualize clustering results.

Unlike the current manual clustering processes, staff who use the Hot Zone System will not need to identify relationships from raw data, which will save them time, allow them to alert the public about such zones, and can better determine transmission chains. This helps to get the epidemic under control.

## Business Assumptions and Dependencies

AS-1: There is no further visits after an infection is confirmed.

AS-2: Users act in a disciplined way.

AS-3: Data given in each case is sufficient and correct.

DE-1: All data retrieved from Geodata Location Search API are correct.

# Scope and Limitations

## Major Features

FE-1: Identify clusters of cases based on geographical proximity of locations and time period.

FE-2: Visualize clustering results on Map.

FE-3: Create, view and modify case data.

FE-4: User authentication.

FE-5: Account management with different permission level for staff and admin.

## Limitations and Exclusions

LI-1: Users access the system through computers but not smartphones.

LI-2: Identified clusters have a small chance to be pure coincidences but not real hot zones.

# Stakeholders

**3.1 Stakeholder Profiles**

|  |  |  |
| --- | --- | --- |
| **Stakeholder** | **Major value** | **Major Interests** |
| CHP Management | Improved quality and efficiency of location data  recording; cost savings for government | The accuracy of clusters and that cost and employee time savings must justify development and usage costs. |
| CHP Epidemiologist | Improved productivity; automation of clustering; ability to visualize clustering results | Usability. Ease of clustering. Adequacy of cluster information. |
| CHP Staff (data entry operator) | Improved productivity; Improved usability to input data. | Simplicity of use. Ease of data management. |
| CHP Admin | No benefit; needs to accomplish user registrations for staff | Minimal new technology needed. Simple to accomplish user registrations. |

# Delivery and Deployment

## Product Roadmap

|  |  |  |  |
| --- | --- | --- | --- |
| **Feature** | **Release 1** | **Release 2** | **Release 3** |
| Target | October 2020 | November 2020 | November 2020 |
| FE-1, Identify clusters | Not implemented | Fully implemented |  |
| FE-2, Visualize clusters | Not implemented | Not implemented | Fully implemented |
| FE-3, Data management | retrieval of location data to create the records of locations  visited for a case | Fully implemented |  |
| FE-4, User authentication | Basic authentication | Fully implemented |  |
| FE-5. Account management | Not implemented | Not implemented | Fully implemented |

## Release Plan

**Release 1:**

|  |  |
| --- | --- |
| **Sprint 1** | **Sprint 2** |
| **Add new location to HotZone**  (a single GeoData location that satisfies the search criteria)  **Web-enabled** | **Add new location to HotZone with Selection**  (Select one from multiple GeoData Locations)  **Select existing location**  (cases with matching locations already known to HotZone)  **Basic authentication** |

## Deployment Considerations

The Hot Zone System will need to be in Django 3.1. There is no constraint on choice of OS. However, to access the system, it is recommended to use the latest version of Goggle Chrome. It is not recommended to access the system using smartphones. Videos no more than five minutes in length shall be developed to train users.