# 

# 

# 

# 

# Sub-System Interface Documentation

By

Team RakuNine

# 

# Main Controller

## Functionality

This subsystem manage access to the other controllers and controls the update interval for the respective APIs

## Input

* Data from Weather Subsystem
* Data from PSI Subsystem
* Data from Dengue Subsystem

## Output

* Response message to SMS Subsystem
* API data to Server
* Report to Email Subsystem
* Post message to Social Media Subsystem
* Form Data to Emergency Subsystem

## Usage Scenarios

1. When the server requests data from Main Controller, the Main Controller calls respective subsystem to get the data. After retrieving the data, Main Controller will fulfill Server requests.
2. Main Controller calls Weather subsystem, Dengue subsystem, PSI subsystem every 30 minutes for data update.
3. Every 30 minutes, Main Controller calls the Email subsystem to send the report.
4. Server sends data to Main Controller, Main Controller calls Emergency subsystem to pass the data.
5. Server sends sms response to Main Controller, Main Controller calls and sends the response to SMS subsystem

# 

# SMS Subsystem

## Functionality

This subsystem send and respond to Emergency SMS using external SMS API

## Input

* Response Message from Main Controller
* Message from Emergency subsystem

## Output

* Response message to Emergency subsystem

## Usage Scenarios

1. When Emergency subsystem sends the message to SMS subsystem, the SMS subsystem calls external SMS API to send out the message.
2. Main Controller sends response message to SMS subsystem, SMS subsystem calls and passes the response message to Emergency subsystem.

# 

# 

# Social Media Subsystem

## Functionality

This subsystem handles all social media related tasks (i.e posting status to facebook, or tweeting in twitter)

## Input

* Main Controller

## Output

* -

## Usage Scenarios

1. Whenever there is an emergency terrorist attack, main controller will call this component to update condition in social media.
2. Main controller will call this component every one hour to update PSI and weather status.

# 

# Email Subsystem

## Functionality

This subsystem send out a report to the Prime Minister Office through an external Email API every 30 minutes

## Input

* Report from Main Controller

## Output

* -

## Usage Scenarios

1. Every 30 minutes, Main Controller will call the Email system with the report. After receiving the report, the subsystem calls the external Email API to send out the report.

# 

# Weather Subsystem

## Functionality

This subsystem gets real time weather data from external weather API and stores it into the database.

## Input

* Data from external Weather API

## Output

* Latest weather information to Main Controller

## Usage Scenarios

1. Main Controller calls Weather subsystem every 30 minutes. Weather subsystem calls external weather API and get the latest weather information before storing it into the database.
2. Main Controller requests weather information from Weather subsystem. Weather subsystem retrieves and return the data to Main Controller

# Dengue Subsystem

## Functionality

This subsystem gets real time dengue cluster information from external dengue API and stores it into database

## Input

* Data from external Dengue API

## Output

* Dengue cluster to Main Controller

## Usage Scenarios

1. Main Controller calls Dengue subsystem every 30 minutes. Dengue subsystem calls external Dengue API and get the latest dengue information before storing it into the database.
2. Main Controller requests dengue cluster information from Dengue subsystem. Dengue Database subsystem retrieves and return the data to Main Controller

# 

# PSI Subsystem

## Functionality

This subsystem gets latest PSI data from external PSI API and stores it into database

## Input

* Data from external PSI API

## Output

* Latest PSI information to Main Controller

## Usage Scenarios

1. Main Controller calls PSI subsystem every 30 minutes. PSI subsystem calls external PSI API and get the latest PSI information before storing it into the database.
2. Main Controller requests PSI information from PSI subsystem. PSI subsystem retrieves and return the data to Main Controller

# 

# Emergency Subsystem

## Functionality

This subsystem get emergencies from the general public, stores them into the database and sends out emergency SMS to respective authorities

## Input

* Form Data from Main Controller
* Response message from SMS subsystem

## Output

* Message to be sent to SMS subsystem

## Usage Scenarios

1. Main Controller calls and sends form data to Emergency subsystem. Emergency subsystem saves the data into the database and calls the SMS subsystem to send out a emergency SMS.
2. SMS subsystem sends response message to Emergency subsystem. Emergency subsystem finds and update the emergency with the status ‘solved’.

# 

# UI API

## Functionality

This subsystem serves as data communication bridge between front-end user interfaces and back-end system.

## Input

* Data from Call Center Interface
* Data from System Controller

## Output

* API response to Public Interface
* Data to System Controller

## Usage Scenarios

1. Map and Live Feed functions in Public Interface will request data from UI API. UI API will then get data from System controller and transfer them back to the public interface.
2. Call Center will make an API request to UI API to save to all the data users have entered. UI API will save the data with the help of system controller.

# 

# Report Generator

## Functionality

This subsystem generates a status report about haze, dengue and terrorist attack condition in Singapore every 30 minutes.

## Input

* Data from System Controller

## Output

* Status Report

## Usage Scenarios

1. Report Generator will generate a report in pdf format based on the data received from System Controller.

# Public UI

## Functionality

This subsystem generates a map and live feed for front-end users to view information about haze, dengue and terrorist attack condition in Singapore

## Input

* Data from UI API

## Output

* Send API requests to UI API

## Usage Scenarios

1. Public UI will request data (i.e. information about haze, dengue and terrorist attack condition in Singapore) from UI API. Public UI will then display the requested data onto the live feed and map of Singapore.

# 

# Call Center UI

## Functionality

This subsystem displays an interface for call center operators to enter information about an incident obtained from members of the public.

## Input

* -

## Output

* Make post request to UI API

## Usage Scenarios

1. Call center operators receives a call from the public and obtain information about the incident. He/ she will then enter the obtained information into Call Center UI and send information to UI API