**Datoms Kolkata Flood Monitoring**

**Version – 0.1.0**

Phoenix Robotix Pvt. Ltd.

**Revision History**

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| --- | --- | --- | --- |
| **Revision No.** | **Date of Revision** | **Modified by** | **Description for Changes** |
| - | 11 June 2018 | Mubaraque Hussain | * Initial Draft |

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# **Overview**

Datoms Kolkata Flood Monitoring is meant for managing large no. of IoT devices used in various applications. It has various essential features for IoT device life-cycle management along with clients and user management.

# **Features**

The software will offer the following overall features:

1. Locate all Stations used for different purposes by Clients in Google Map

# **Terms**

Various terminologies used in the doc are:

|  |  |
| --- | --- |
| **Term** | **Meaning** |
| Device | A device refers to a single unit of physical device which will communicate with the platform.   * It might be sending data from more than one locations/stations * It can be used for only one application under a single client * A device will be identified physically by its QR Code that has been attached on its outer casing / enclosure * The individual parts of a device might have different QR Codes which are mapped with the QR codes of the device * A device is authenticated / uniquely identified by the platform through its Authentication Token (auth\_token). * The auth\_token of the device is mapped with the QR Code of the physical device during Device Provisioning |
| Application | An application represents a service which is offered to various clients. |
| Client | A client represents a single industry/organization who is using one/more of the applications.   * A client subscribes to an application for a specific time period * A client can have multiple locations/stations under an application * A client can have multiple stations deployed under an application which act as the data sources for the locations/stations |
| User | A user represents a single User Account which can be used to access the application / get alerts / notifications for the same.   * A client can have multiple users under various applications * A user can be one of type: Admin, Manager, User or Alerts Only with varying levels of access. * The access of a user to various applications / features can be managed by the Admin/Manager of the same organization. |

# **Detailed Description**

The various pages of the software are:

1. Dashboard
2. Dashboard

Dashboard page will show the geo-distribution of all the stations along with the status of the stations at a specific instance of time.

* All the stations will be shown on a map as per their location.
* The information of all stations will be updating on a regular interval of time.
* The status of the station will be represented by the icon for the station placed on the map. The status of the station will be determined as follows:

|  |  |  |
| --- | --- | --- |
| **Status** | **Representation** | **Condition** |
| Online | Green Colored Icon | The station has communicated with the server within last 15 mins (Condition-1) |
| Offline | Red Colored Icon | The station has not communicated with the server within last 15 mins (Condition-2) |
| Shutdown | Grey Colored Icon | The station has been marked as shutdown (Condition-3) |

*Table-1.1: Status of Station*

The conditions will be checked in the following manner:

Condition - 1

Yes

Condition - 3

No

No

Yes

*Fig-1.1: Determination of Station Status*

* The KPIs for Online, Offline & Shutdown stations will be shown at the top of the page.
* There will be a layered filter at the left side panel of the page from where the user can apply various layers and the filtered stations will be shown to the user accordingly.
* There will be some categories of stations & under each category there will be several sub-categories of stations from which user can filter the stations by selecting the checkboxes under each categories & sub-categories.
* If the user selects a category by selecting the checkbox, then all the checkboxes of its sub-categories will be selected & similarly by unselecting the category will unselect all the subcategories under the category.
* The filtered stations will be immediately shown after selecting each filter options.

Example:

*Let, there are two categories of stations from which the user can apply filters:*

* *Environment*
* *Water Level*

*From Environment category, user can filter the stations from the sub-categories mentioned below:*

* *Critical*
* *Non-Critical*

*From Water Level category, user can filter the stations from the sub-categories mentioned below:*

* *Water Level*
* *Many other parameters*

*User can select the checkboxes for the required categories & sub-categories to view the filtered stations.*

* Clicking on a station icon (Map Marker) will open up a Tooltip (Information Window) above the Map Marker on which the following details of a station will be displayed:
  + Name of the station
  + Address of the station
  + A colored circle showing status of the station
  + Time since the last data is sent by the station
  + Parameter Details of station, parameters will vary for different types of stations.
  + A Button to view last 24 hours’ trends of the Station Parameters in a Popup.
* In the Popup for last 24 hours’ trend, different types of stations will have different types of visualizations according to their parameters. There are 6 types of visualizations for data:
  + **Penstock & Sump Graph:** Showing the trends of both Penstock & Sump in a single graph with 2 layers & also shows the Min & Max values of both.
  + **Bar Graph for Rainfall:** Shows the Hourly trends of Rainfall in a Bar graph along with the Total, Min & Max values. Each bar indicates value of each hour.
  + **Open Canal Water Level Graph:** Shows the values of the Open Canal Water Level in an Area Graph with Min & Max values.
  + **Inlet & Outlet Graph:** Showing the trends of both Inlet & Outlet in a single graph with 2 layers & also shows the Min & Max values of both.
  + **Environmental Parameters Graphs:** Shows the values of multiple Environmental Parameters of a station in separate Area Graphs with Min, Max & Average values for each Parameters.
  + **Vehicle Tracking Map:** Shows the path of the vehicle travelled in last 24 hours by plotting the lines in a Map. Also shows few more details like Moving Since / Running for / Distance Covered.