# **Data description**

# Prox data

GASTech has installed proximity detectors throughout the building to enhance the safety and security of its employees. There are two types of proximity sensors, (1) <u>fixed sensors that register when a badge crosses a boundary</u> and a (2) <u>mobile sensor reader</u>. The mobile reader moves throughout the building and will register badges within a 4 foot radius. (Note: the mobile sensor scans for prox badges every second, but reports out in 1 minute aggregations).

There are 2 formats available for download, a CSV file or a file with JSON objects.

#### The CSV formats are as follows:

■ Fixed-prox

```
timestamp, type, prox-id, floor, zone
2016-05-31 07:15:00, fixed-prox, proxName002, 1, 1
2016-05-31 07:18:00, fixed-prox, proxName1001, 1, 1

Mobile prox
timestamp, type, prox-id, floor, x, y
2016-05-31 09:00:00, mobile-prox, proxName1001, 1, 174, 15
2016-05-31 09:09:00, mobile-prox, proxName2001, 2, 15, 78
```

The (x,y) coordinates are based per floor with the lower left of the provided map being (0,0) and the upper right being (189,111).

## The JSON formats are as follows:

The message format for fixed prox sensors will be

```
"message": {
          "zone": "4",
          "floor": "1",
          "datetime": "2016-5-14 23:59:46",
          "type": "fixed-prox",
          "proxCard": "proxName002"
}
```

The message format for mobile prox sensors will be

# Building Data

As part of this year's data, we are simulating a 3 story building with multiple air handling zones per floor. The data is sampled every 5 minutes.

Two main types of data are provided:

# **Building**

This is provided as a CSV and a JSON structure for this project.

CSV

The row header and sample row can be found in the .csv attachment. All data for all floors is in a single record.

JSON

The data is divided into 4 JSON objects, "general", "floor 1", "floor 2" and "floor 3". Each floor may have a different number of field/value pairs because each floor has a differing number of HVAC zones.

### Hazium

The GasTech headquarters has installed a limited number of Hazium sensors throughout the building. The sensors are part of the building air handling system. They are placed in an HVAC zone. Not all HVAC zones have sensors

```
So F_1_Z_1 is floor 1, zone 1.
```

For this project, this data is provided in CSV and JSON formats.

### CSV

```
Date/Time , F_#_Z_#: Hazium Concentration 2016-05-31 00:00:00, F_1_Z_1, 0.0 2016-05-31 00:05:00, F_1_Z_1, 0.0 2016-05-31 00:10:00, F_2_Z_1, 0.0
```

## ■ JSON

```
"message": {
          "F_1_Z_1: Hazium Concentration": "0.0",
          "type": "sensor",
          "Date/Time": "2016-05-31 00:00:00"
}
```