

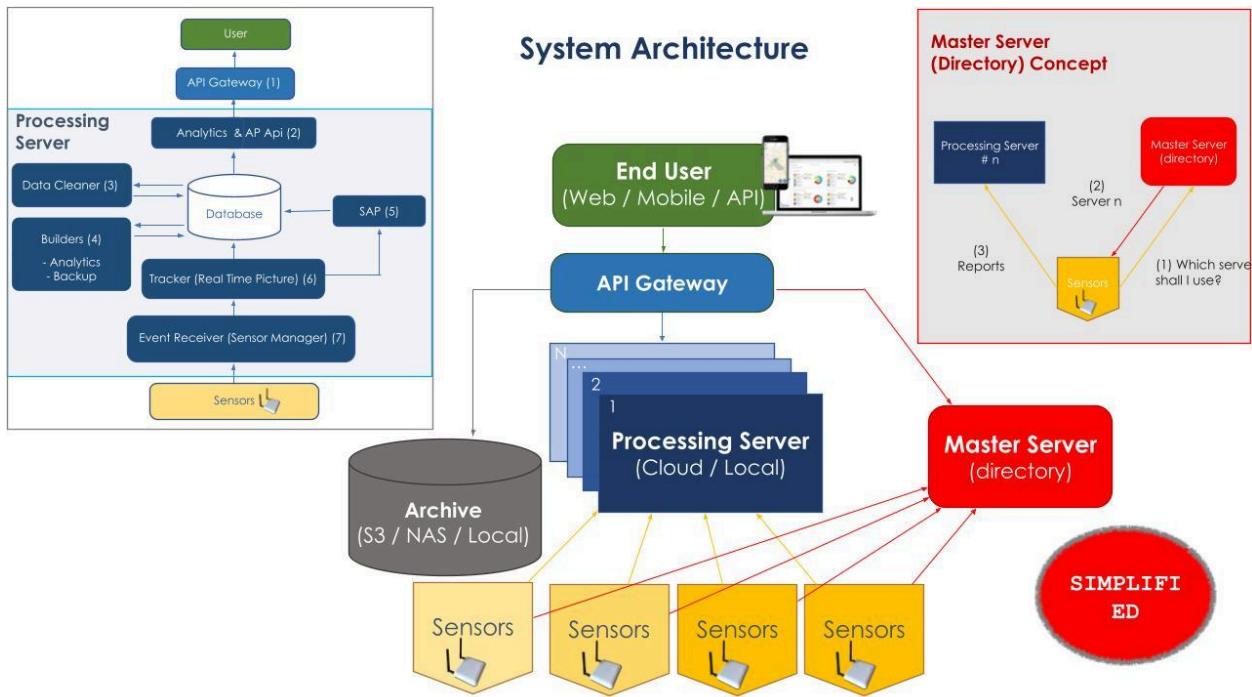
- I. Clear specification of background (software) and foreground (developments within TRUSTCHAIN)

The state of the art (starting point - background)

Correlation Systems is the manufacturer of IoT sensors that are tracking anonymized mobile devices on a city wide scale.

Those sensors are used for multiple purposes such as outdoor people counters, crowd management, monitoring the effectiveness of DOOH and OOH advertising and more.

1) Top Level System Architecture



How does the system work?

1. When a sensor is starting - he will connect to master server (a management server) which will inform the sensor where to find his production server
2. The sensor will detect data (WiFi headers) using a software defined radio (SDR), encrypt the MAC address in the server and report the data to the local production server (according to the allocation received before from the master server)
3. The processing server will associate between data received from multiple sensors, perform a process called “de-randomization” which is clustering of multiple messages generated by the same phone and store the processing results in a local database
4. In addition every day the raw data will be stored on an archive as CSV files, the archive can be local disk or external storage.
5. A single dashboard is using the master server in order to locate the correct processing server and show the detections to the customer using a dashboard.
6. An API server is using the same method as the dashboard and allow customers to retrieve data from the system database via APIs

In addition to the main system architecture, we are also able to install the whole system on a single server without connection to the internet in order to support customers that do not want to provide internet connection. This required a special version of the sensor.

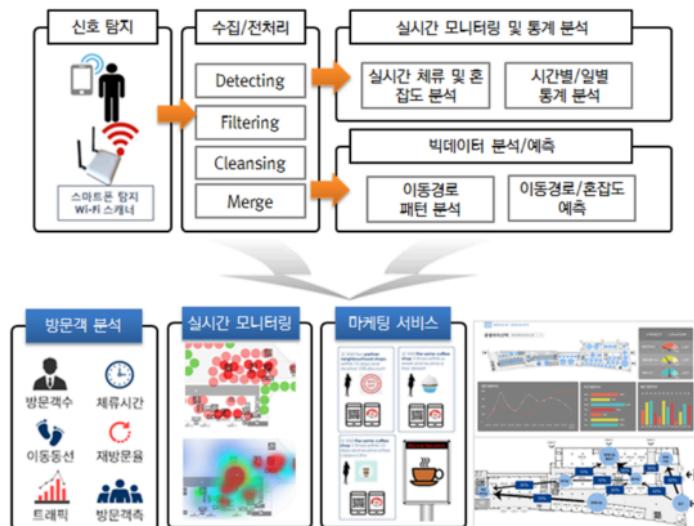
EDGE sensor - it is also possible to install the processing server software on the sensor and to have an EDGE device that can process and present the results from a single sensor. The functionality of this device is similar to the full system with the exception that functions that require multiple sensors (for example mobility) are not available under this configuration.

2) The dashboard

LBASense Dashboard Overview

1.1 Overview

LBASense is a real-time tourist analysis solution through Wi-Fi sensor-based big data collection and analysis. The main functions provide a variety of functions such as real-time visitor monitoring, movement pattern analysis (revisit rate, stay time, movement route), report function, equipment condition, etc. It also provides an Open API that can be linked to existing ERP. Applications provide big data-based real-time statistical information in various fields such as smart cities, events, advertising-marketing, disasters/safety/security, etc.



[Data flow chart of tourist analysis solution]

1.2 Composition

Division	Content
----------	---------

IoT Sensor Software (v1.0.4.0)	Software that collects Wi-Fi signals transmitted from smartphones in real time, de-identifies the collected data, and transmits them to a big data analysis server.
Analysis Software (V.1.1.10)	Software that collects and preprocesses data transmitted in real time, and provides monitoring and statistical analysis data in real time.

2 Dashboard access

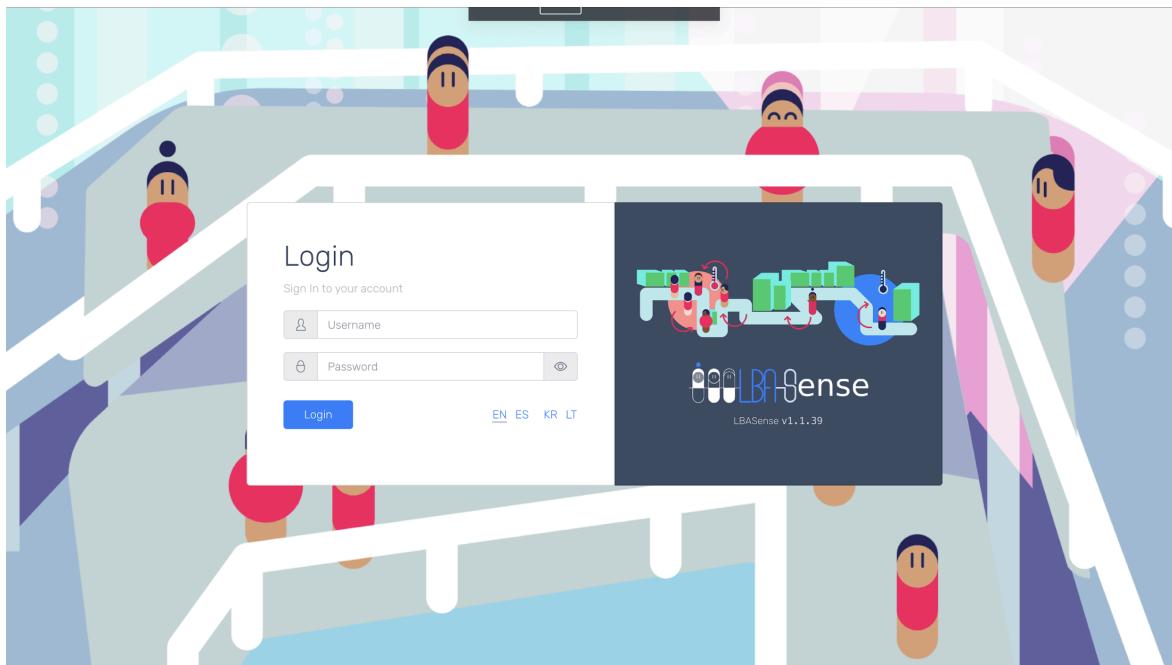
To access the tourist analysis, access the LBASense dashboard.

- Web site : <https://dashboard.lbasense.com>

2.1 User information

You can login using the user information issued when implementing the solution. After logging, you can search for the ID of the implemented site to check the data.

- ✓ Site Id:
- ✓ User information: User information is classified into three categories.
 - ID : user_username (User), user_suport(Maintenance team), user_manager(administrator)
 - password :



[Login Screen]

※ This site provides multilingual (Korean and English).

2.2 Dashboard Individual Menu Description

The LBASense dashboard is largely divided into four menus: data visualization, movement path analysis, system, and report. It analyzes big data collected from sensors and provides a variety of menus for users to easily analyze data using various visualization charts or graphs.

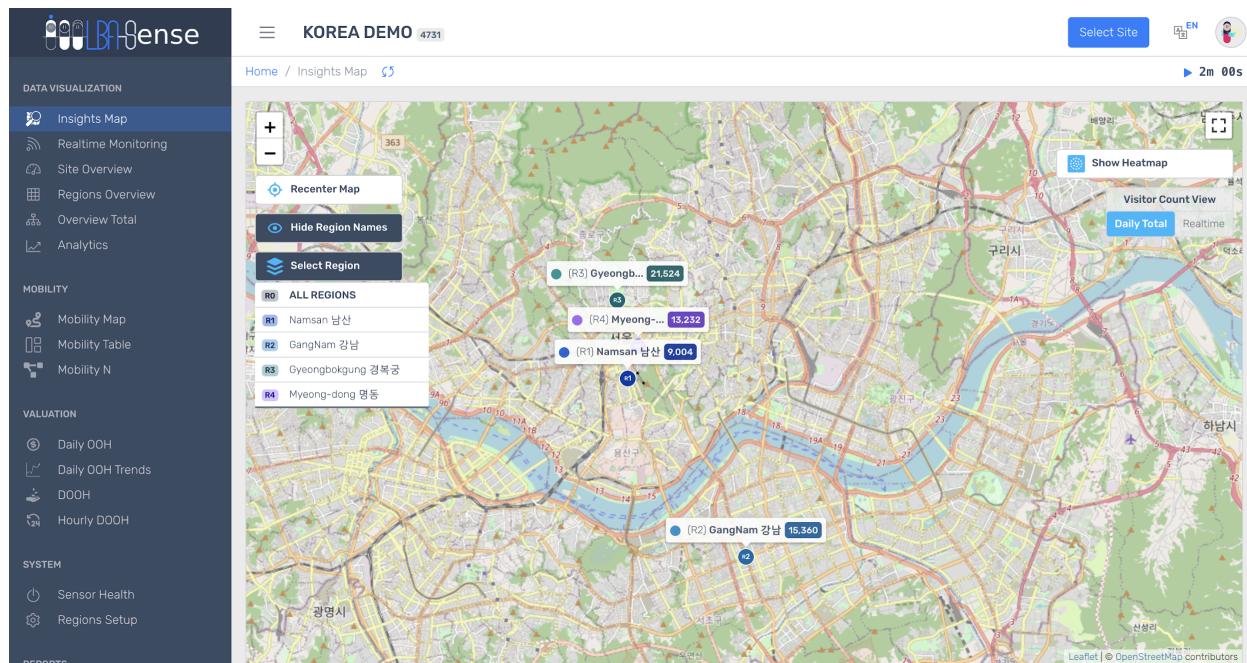
Large category	Medium Category	Small Category	Functional explanation
Dashboard	Login/Logout	-	The ability to log in or out of the product.
	Data Visualization	Insights Map	Statistical maps Provide analyzed data management and inquiry functions through data maps.
		Site Overview	Provides data management and inquiry functions analyzed by site visit status, daily trend, monthly trend, and annual trend.
		Region Overview	Provides data management and inquiry functions analyzed by regional status.
		Analytics	Provides data management and inquiry functions analyzed by region & date & day & hour.
	Mobility	Mobility Map	Provides a function of analyzing the route of tourists through a map.
	System	Sensor health	Provides sensor-related information (position, state, connection time, S/W version, operation time) management and inquiry functions.

		Region setup	It provides inquiry, registration, and modification functions for regional management.
	Report	Daily report	Generating reports by region and date and providing printing functions.
		CSV download	Download function is provided as a CSV file for the number of visitors per day, week, month, year, and hour.
API	Interlinked API		-API is a JSON format GET type. -Use API for analysis using user name and password used when logging in on another platform.

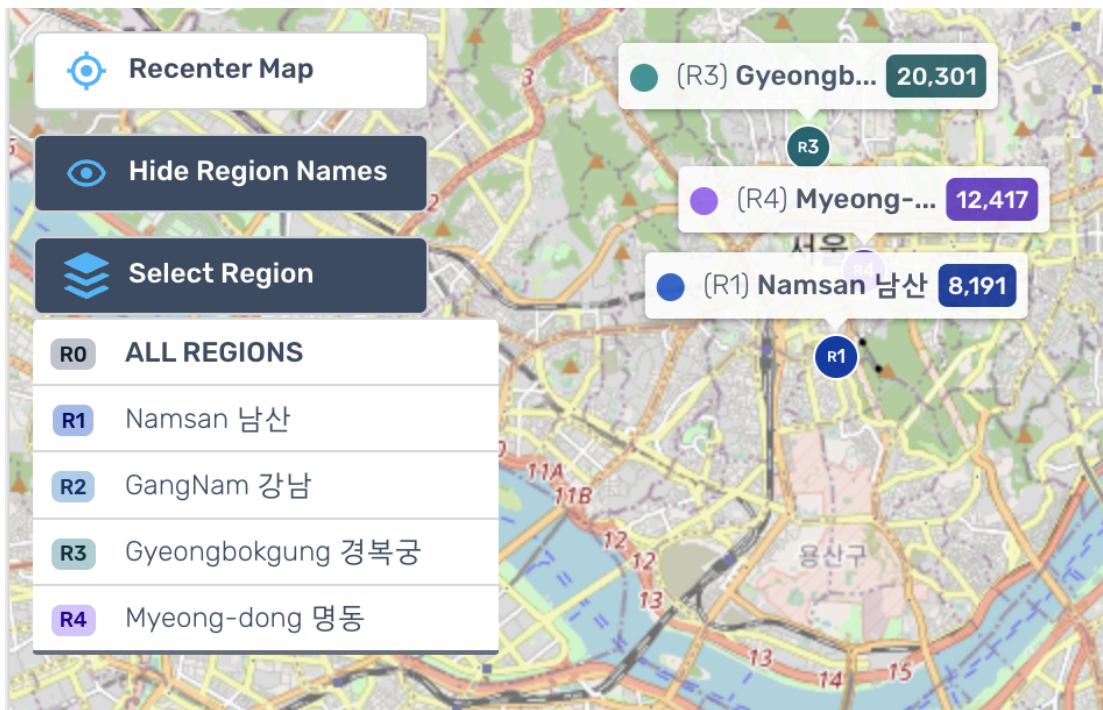
3 Data Visualization

3.1 Insights Map Menu

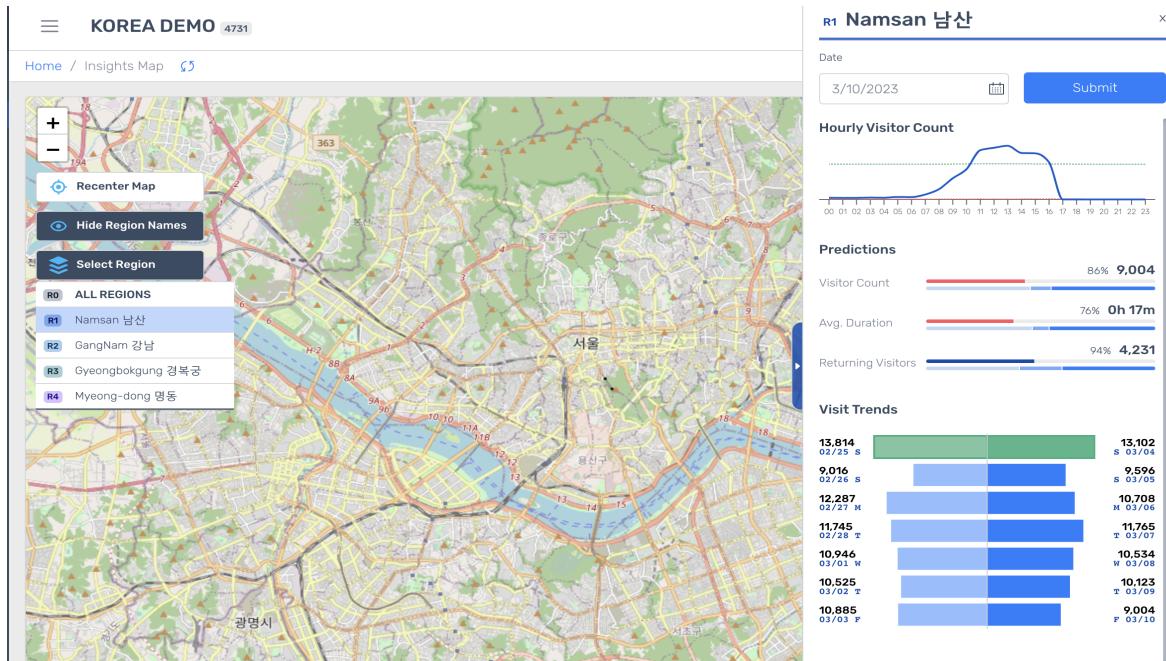
The **Insights Map** menu displays the floating population data of the area where the sensor is installed in real time, and allows you to check the sensor location and regional floating population analysis data on the map.



- Displays the location where the sensor is installed on the map, and displays the region ID, region name, and real-time floating population coefficient in the displayed area.

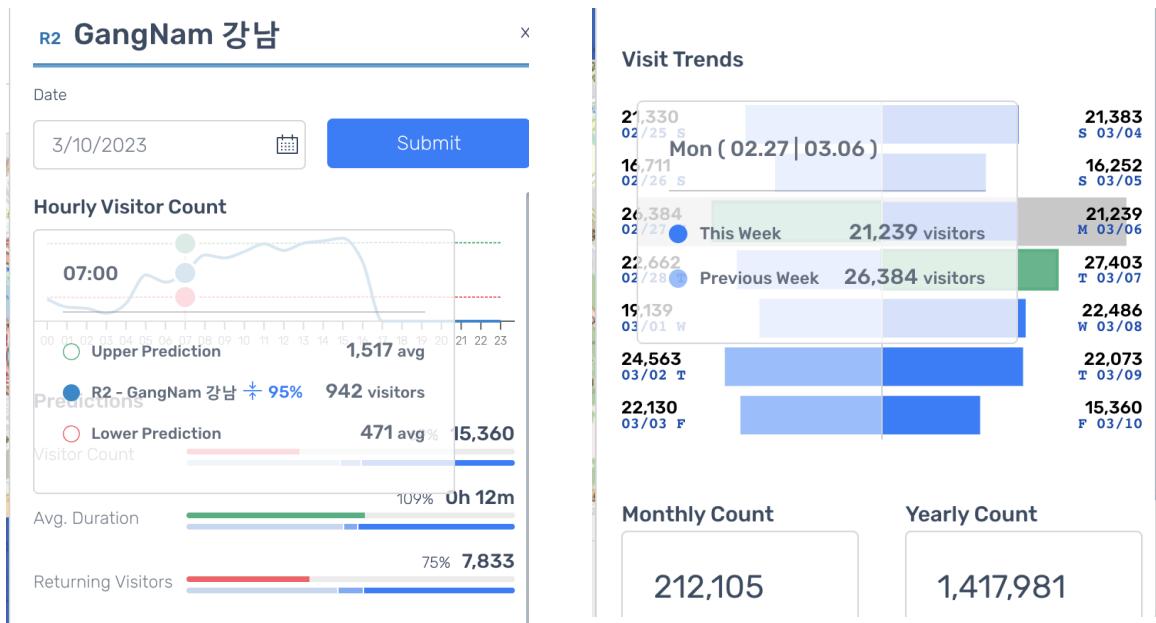


- If you select the region name on the map, you can check the details of the selected region (number of visitors by hour, status of visits, weekly visits, monthly and annual visits).
- Also, you can search for data by selecting a date.



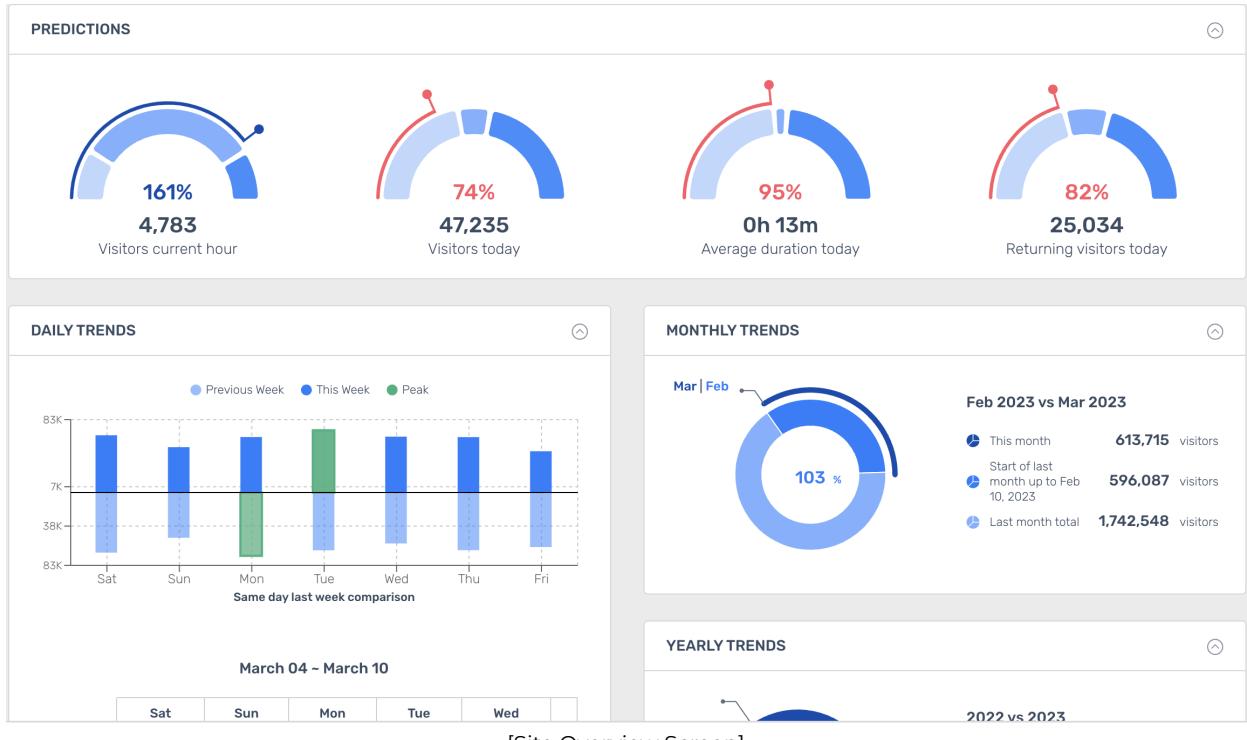
☞ Detailed data screen.

- If you mouse over the chart, you can also check the detailed data.



3.2 Site Overview Menu

The **site overview** menu displays data by statistically analyzing the floating population data of the entire area where sensors are installed, and provides data such as visit status, visit trend, and regional status.

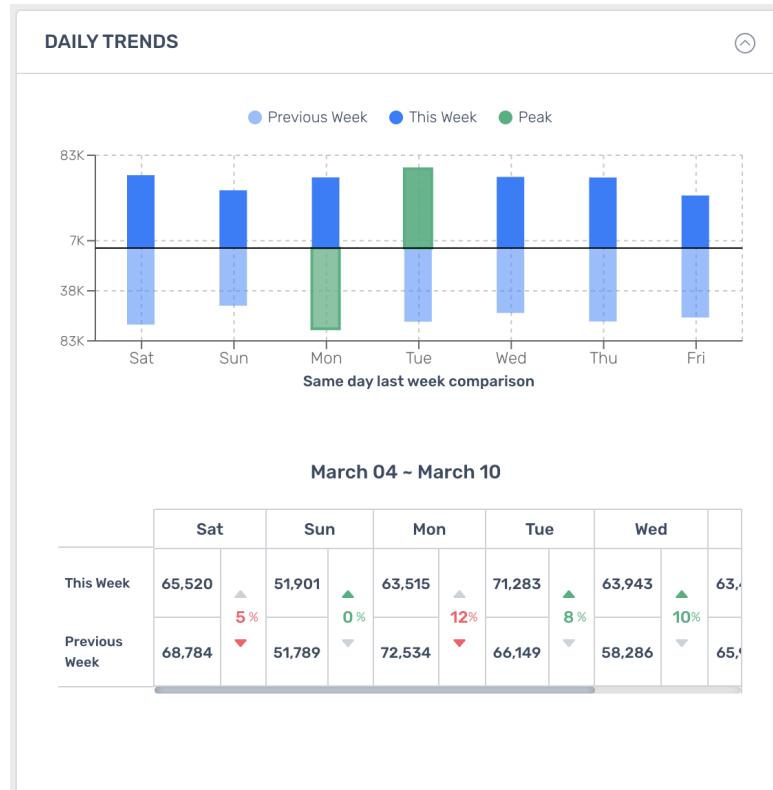


☞ Detailed data screen

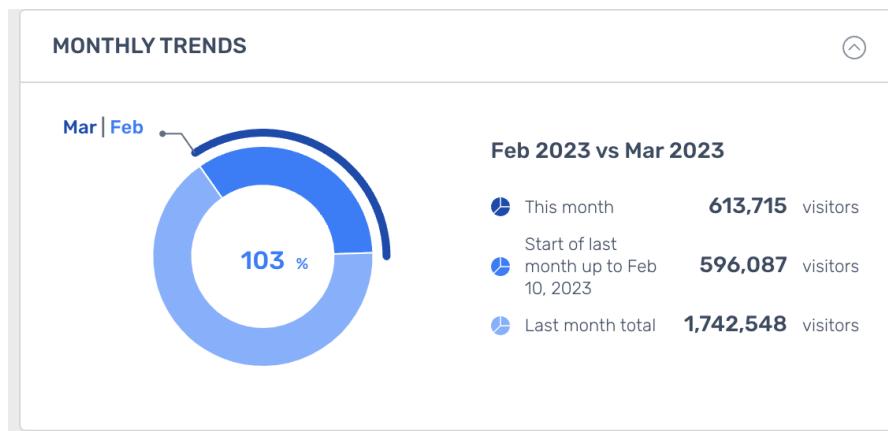
- Visiting status:
- By analyzing the data of the entire floating population of the site, the data is displayed through the chart with **visitors within an hour, today's visitor, today's average residence time, and today's revisit**.
- The visit status represents the range of the number of people measured today compared to the existing measurements, so you can check the information on the graph only when more than 10 matches of data are collected.



- Daily drift:
- Analysis of the site's overall floating population data and compare it with last week/this week to display it as a chart.

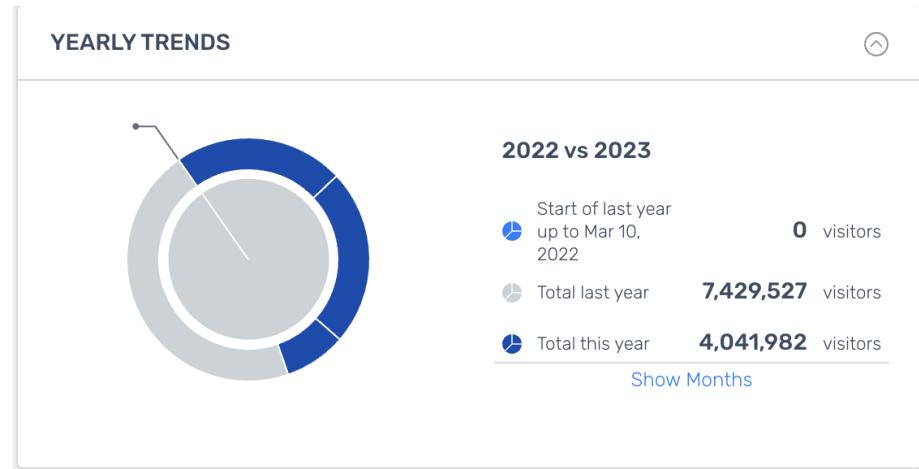


- Monthly drift:
- Analysis of the site's overall floating population data and compare it to last month/this month and display it as a chart.



[Monthly drift explanation screen]

- Yearly drift:
- Analysis of the site's overall floating population data and display it as a chart compared to last year/year.



[Yearly drift explanation screen]

3.3 Regions Overview Menu

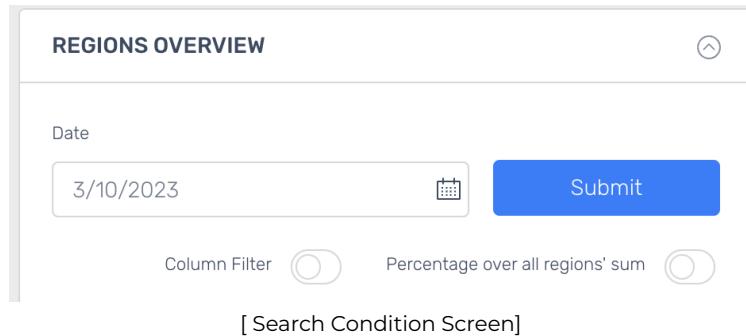
The Regions Overview menu displays data by statistics and analysis of the floating population data of the entire area where sensors are installed by region, and provides data such as visit status, visit trend, and regional status.

REGIONS OVERVIEW								
Date								
ID	Name	Visitors Current Hour	Visitors Last Hour	Average Duration	Returning Visitors	Visitor Count	Monthly Visitors	Yearly Visitors
R1	Namsan 남산	179 All Regions 1K	1,278 All Regions 6K	0h 19m All Regions 0h 13m	47% R1 Total Visitors 8.2K	8,191 All Regions 44K	106,380 All Regions 610K	688,708 All Regions 4M
R2	GangNam 강남	341 All Regions 1K	1,623 All Regions 6K	0h 12m All Regions 0h 13m	51% R2 Total Visitors 14.6K	14,573 All Regions 44K	211,318 All Regions 610K	1,417,194 All Regions 4M
R3	Gyeongbokgung 경복궁	506 All Regions 1K	2,527 All Regions 6K	0h 12m All Regions 0h 13m	54% R3 Total Visitors 20.3K	20,301 All Regions 44K	277,717 All Regions 610K	1,869,781 All Regions 4M
R4	Myeong-dong 명동	339 All Regions 1K	1,848 All Regions 6K	0h 17m All Regions 0h 13m	41% R4 Total Visitors 12.4K	12,417 All Regions 44K	175,913 All Regions 610K	1,107,849 All Regions 4M

[Regions Overview Screen]

- By analyzing the data of the entire floating population of the site, the data is displayed through the chart with **visitors within an hour, today's visitor, today's average residence time, and today's revisit**.

- Search conditions:



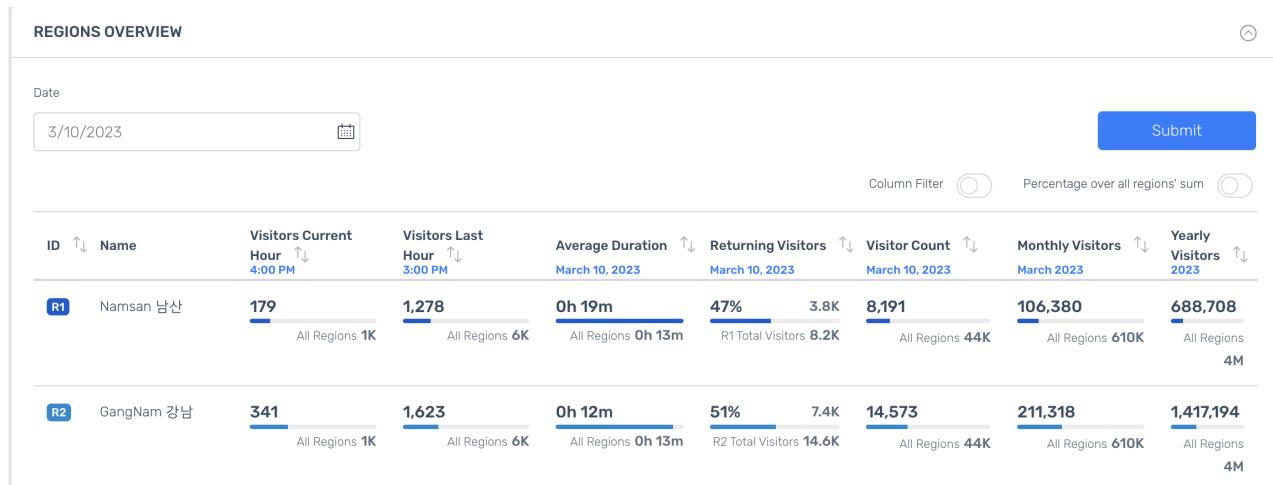
The screenshot shows a search interface titled "REGIONS OVERVIEW". It includes a date input field set to "3/10/2023" with a calendar icon, a "Submit" button, and two filter options: "Column Filter" and "Percentage over all regions' sum", each with a circular icon.

[Search Condition Screen]

☞ The searched data screen.

- Regional status:

- Display the floating population analysis data for all regions where sensors are installed. The analyzed data can be displayed in the form of a table grid to check the data with the regional ID, region name, last hour visitor, today visitor, monthly visitor, and annual visitor items.

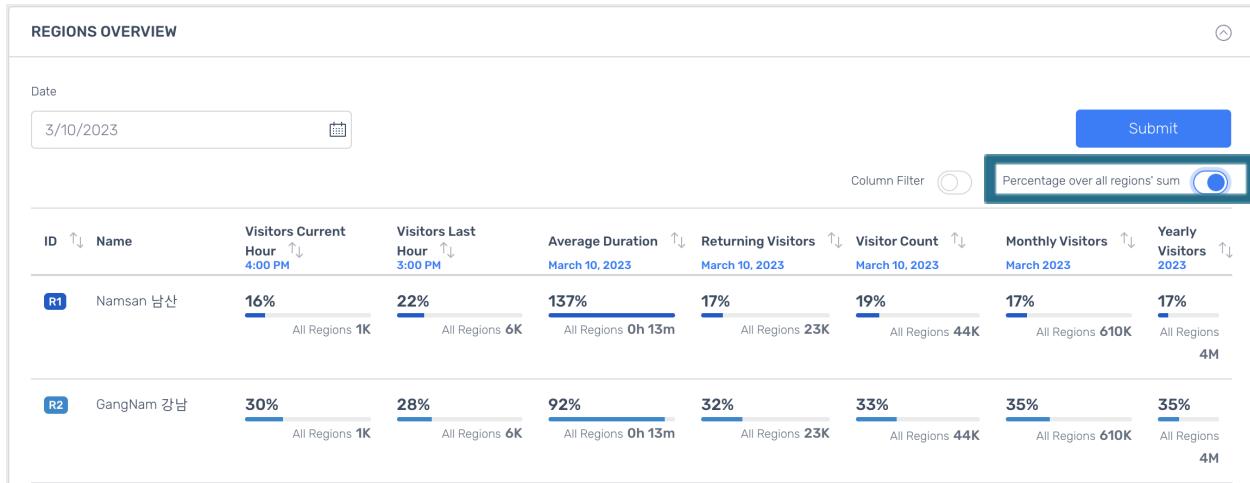


The screenshot displays a table titled "REGIONS OVERVIEW" showing regional status data. The columns include: ID (R1, R2), Name (Namsan, GangNam), Visitors Current Hour (4:00 PM, 341), Visitors Last Hour (3:00 PM, 1,278), Average Duration (0h 19m, 0h 12m), Returning Visitors (47%, 51%), Visitor Count (8,191, 14,573), Monthly Visitors (March 2023, March 2023), and Yearly Visitors (2023, 2023). Each row also includes a breakdown for "All Regions" (e.g., 1K visitors, 6K total visitors).

ID	Name	Visitors Current Hour	Visitors Last Hour	Average Duration	Returning Visitors	Visitor Count	Monthly Visitors	Yearly Visitors
R1	Namsan 남산	179 All Regions 1K	1,278 All Regions 6K	0h 19m All Regions 0h 13m	47% R1 Total Visitors 8.2K	8,191 All Regions 44K	106,380 All Regions 610K	688,708 All Regions 4M
R2	GangNam 강남	341 All Regions 1K	1,623 All Regions 6K	0h 12m All Regions 0h 13m	51% R2 Total Visitors 14.6K	14,573 All Regions 44K	211,318 All Regions 610K	1,417,194 All Regions 4M

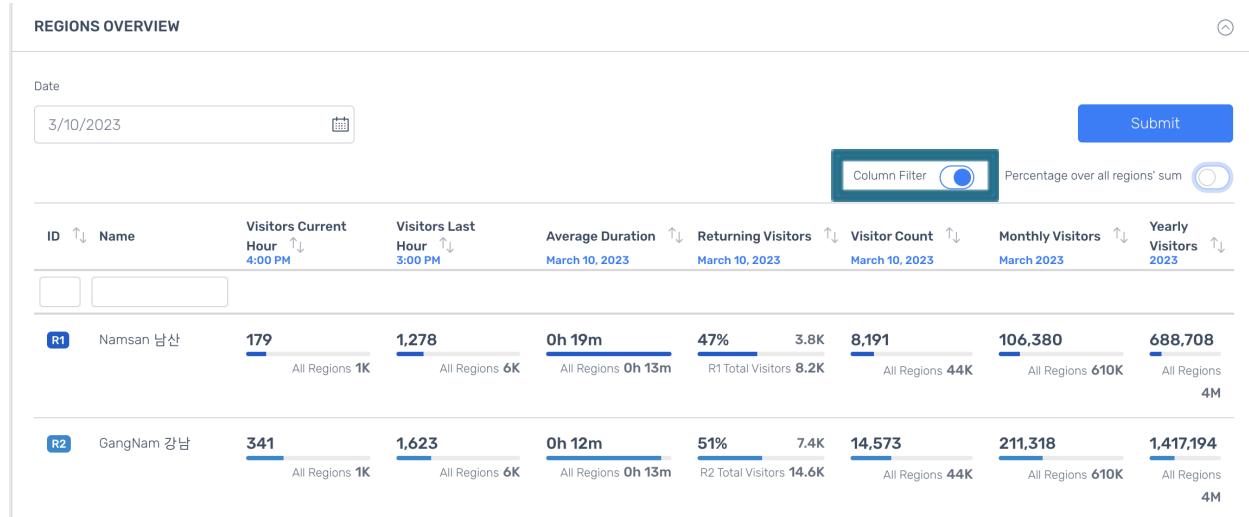
[Regional Status List Screen]

- Regional floating population data is analyzed in real time and displayed as data quantity or as a ratio of the total region.



[Data Detail Explanation Screen]

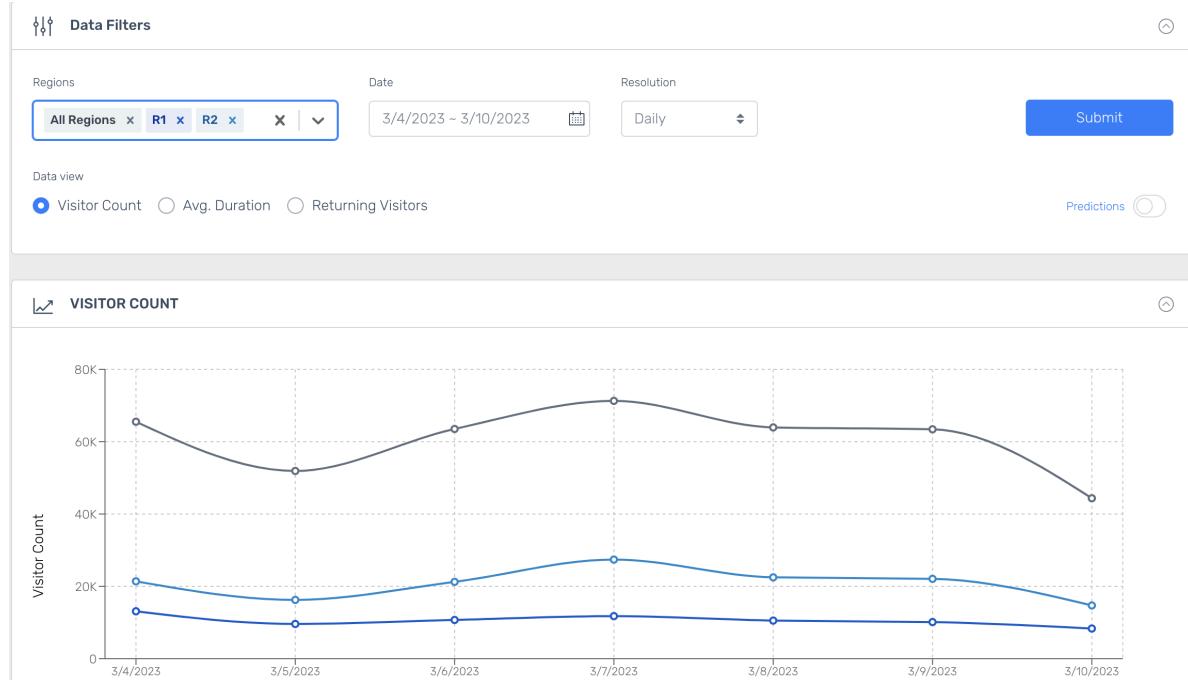
- Regional Name Inquiry:
- You can search for the region by region ID and region name you want to search for.



[Search by Region Names Screen]

3.4 Analytics menu

The Analytics menu provides the ability to analyze data by inquiring data collected from areas where sensors are installed under various search conditions.



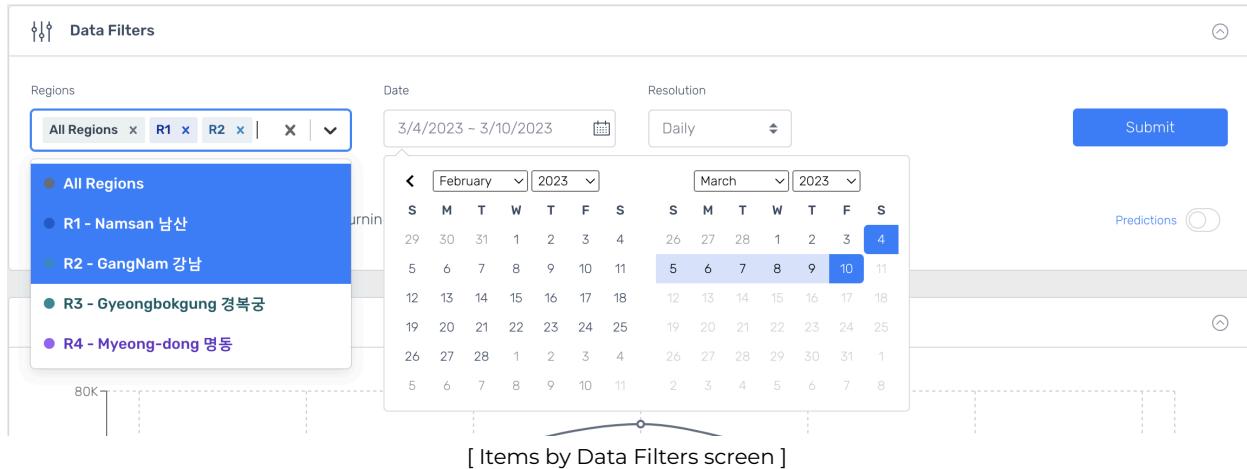
[Analytics Screen]

• Data Filter Screen:

- Select Regions: You can select the area of the installed sensor. (total area, Hwagae Marketplace)
- Select Date : You can select the start date and the last date.
- Select Resolution : You can select units per day or hour.
- Select Data View : You can select items of data that are inquired in search conditions.

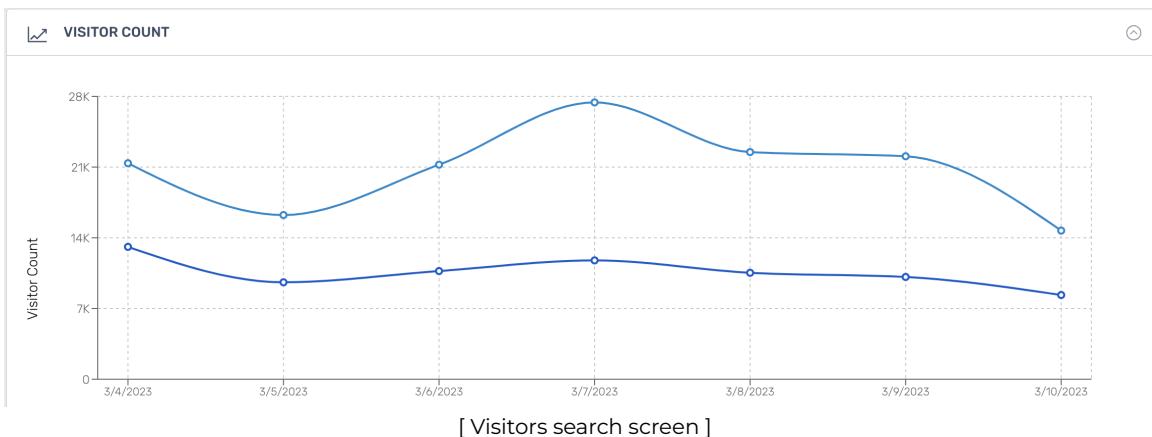
The screenshot shows the "Data Filters" interface. It includes fields for "Regions" (with "All Regions" selected), "Date" (set to "3/4/2023 - 3/10/2023"), "Resolution" (set to "Daily"), and a "Submit" button. Below these are "Data view" options: "Visitor Count" (selected), "Avg. Duration", and "Returning Visitors". A "Predictions" toggle switch is also present.

[Data Filters screen]



☞ Searched data screen

- Displays the number of visitors by region over time with data that meets the search conditions.



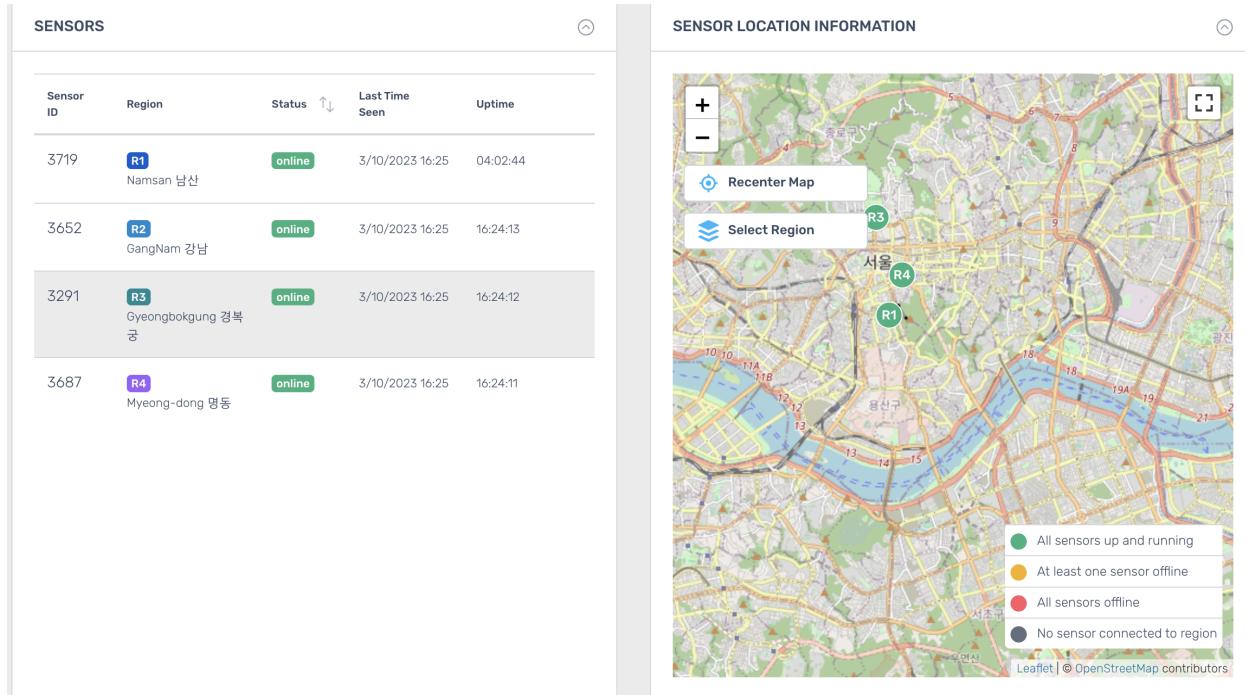
- If you put mouse over the chart, it displays detailed data as a pop-up



4 System

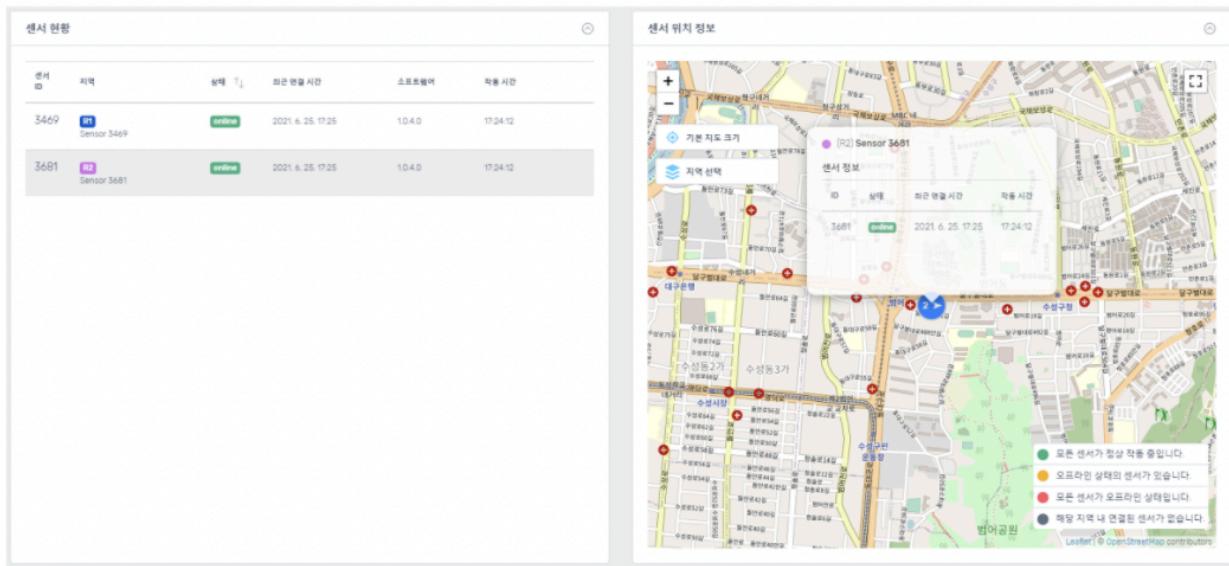
4.1 Sensor Health menu

The **Sensor Health menu** displays the sensor status of the entire area where the sensor is installed. The sensor status provides data using table grid shapes and maps.



[Sensor health screen]

- The sensor state is going to display with **sensor ID, region name, sensor state, recent connection time, software version information, operating time**, etc. of the data.
- Click 'Column' in the sensor status to move to the location of the selected sensor on the map on the right.
- If you click on the **area code** on the map, the sensor's information as **sensor ID, status, recent connection time, and operating time** will show up.



[Sensor health screen]

4.2 Regions Setup Menu

The **Region Setup menu** displays region information of the entire area where the sensor is installed. In this menu, you can edit region information (region name, region description, GPS coordinates).

REGIONS					
ID	Name	Description	Sensors	GPS Coordinates	Economic Value
R1	Namsan 남산	Sensor 3719	3719	LAT 37.55375864 LNG 126.9809696	13,000 WON
R2	GangNam 강남	Sensor 3652	3652	LAT 37.497905 LNG 127.027636	12,000 WON
R3	Gyeongbokgung 경복궁	Sensor 3291	3291	LAT 37.578208 LNG 126.976905	5,000 WON
R4	Myeong-dong 명동	Sensor 3687	3687	LAT 37.563815 LNG 126.985139	15,000 WON

[Regions Setup Menu]

- The regional status **displays regional ID, regional name, regional description, sensor status, and GPS coordinate information.**
- You can edit region information (**region name, region description, GPS coordinates**) using the **modification button** of each region information.

ID	Name	Description	Sensors	GPS Coordinates	Economic Value
	Namsan 남산	Sensor 3719	3719	LAT 37.55375864 LNG 126.9809696	13,000 WON

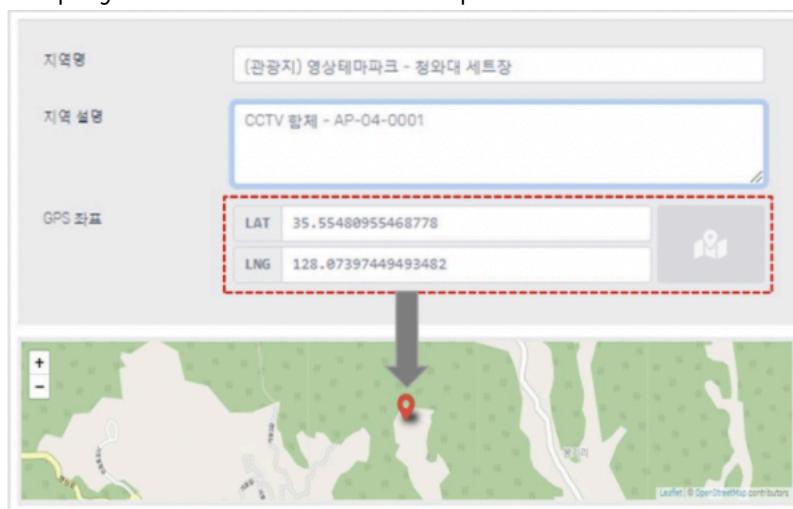
Form Fields:

- Name:** Namsan 남산
- Description:** Sensor 3719
- GPS Coordinates:** LAT 37.55375864, LNG 126.9809696
- Economic Value:** 13,000 WON

[Caution] When editing the region name, please check the sensor ID and correct it. If you need to change your sensor ID, you should ask your administrator.

• Modified item: .

- Region name: Enter the name of the area or management area where the sensor is installed. The name of the region is Max. You can enter up to 100 characters.
- Regional Description: Enter data that additionally explains the region name or management region name. You can enter up to 200 characters for regional descriptions.
- GPS Coordinates: Information for displaying the location of the sensor on a map. Check Latitude and Longitude information using a PC or mobile map app and enter it. Enter the location information value and click the Change button to display the location on the map.



[Detailed Edit Item Screen]

5 Report

5.1 Daily Report Menu

The **Daily Report menu** provides the analyzed floating population data in the form of a daily report. Report data items display data such as visit status, visit trend, and regional status.

The screenshot displays the 'Hamyang Deployment' interface for analyzing floating population data. On the left, a sidebar lists various report categories like '지역 통계' (Regional Statistics), '사이트 통계' (Site Statistics), and '통계 분석' (Statistical Analysis). The main area shows a summary dashboard with three circular gauges: one at 79% (6.252) labeled '방문자 수' (Number of visitors), another at 80% labeled '평균 체류 시간' (Average stay time), and a third at 80% labeled '재방문율' (Return rate). Below this is a bar chart titled '주간 현황' (Weekly Status) comparing visitor counts for different regions over a week. The chart shows values ranging from 0.000 to 10.000. At the top right, it indicates the date as '2021년 5월 7일 오후 5:28' and the location as '전체 지역 합계' (Total regional count).

[Daily Report Menu Screen]

- Search conditions:
- Regional status selection: You can select the area of the installed sensor.(Total number of regions, Hwagae Marketplace)
- Date Selection : You can select the date you want to create the report form.

This screenshot shows the '검색 조건' (Search Conditions) panel. It includes fields for selecting regions ('R1', 'R2') and dates ('2021. 6. 23. ~ 2021. 6. 25'). Below these are dropdown menus for selecting the number of days (5일, 6일, 2021) and a detailed calendar view for picking specific dates. The calendar highlights the 23rd, 24th, and 25th of June. A blue button labeled '적용하기' (Apply) is located at the bottom right.

🖨 Report Print Screen Sample



5.2 CSV Download Menu

The CSV download menu provides the analyzed floating population data as a CSV file. File items include daily number of visitors, weekly number of visitors, monthly number of visitors, annual number of visitors, hourly number of visitors, average residence time, revisit, and route.

📁 Visitor Count Daily

Date: Calendar Download

📁 Visitor Count Weekly

Start week: Calendar End week: Calendar Download

📁 Visitor Count Monthly

Date: Calendar Download

📁 Visitor Count Yearly

Start year: Down arrow End year: Down arrow Download

📁 Visitor Count Hourly

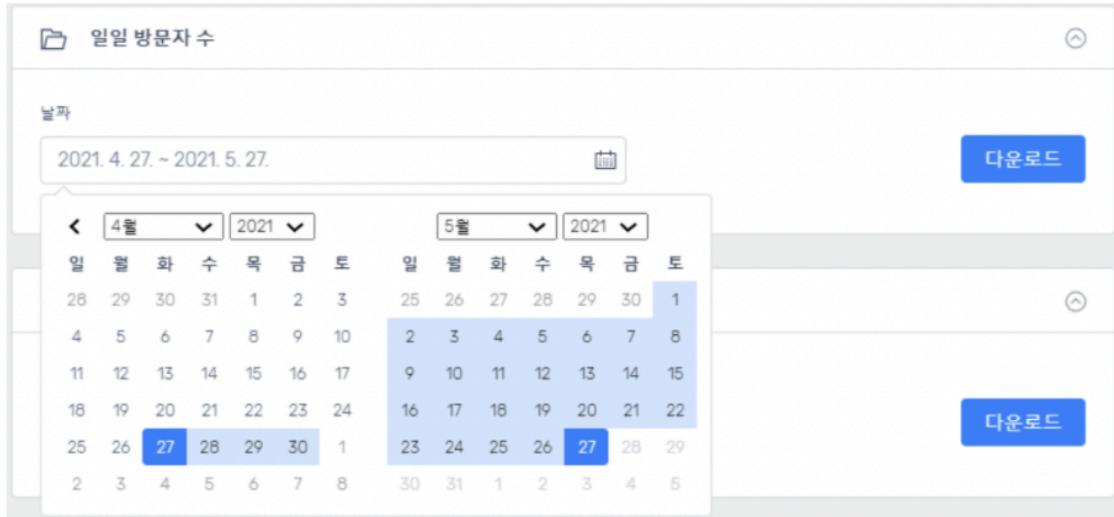
Date: Calendar Download

📁 Average Duration

Date: Calendar Download

[Download CSV menu]

- Search conditions:
- Date Selection: You can select the date you want to create the analyzed download.



[Search Condition Selection Screen]

3) APIs

Sample Call for Visitor Count

```
https://domain/api/Analytics/VisitorCount/?format=json&site_id={site_id}&user={username}&pass={password}&start_time={start_time}&end_time={end_time}&resolution={resolution}
```

Sample Response

```
{  
  "data": [  
    {  
      "date": "2023-03-21",  
      "region_data": [  
        {  
          "region": 0,  
          "count": 478  
        },  
        {  
          "region": 1,  
          "count": 345  
        },  
        {  
          "region": 2,  
          "count": 210  
        }  
      ]  
    }  
  ]  
}
```

```
        "region": 1,  
        "count": 478  
    }  
]  
}  
]  
}
```

Sample Call for Mobility

```
https://domain/api/Analytics/AnalyticsMobility/?format=json&site_id={site_id}&user={username}&pass={password}&start_time={start_time}&end_time={end_time}
```

Sample Response

```
{  
    "data": [  
        {  
            "date": "2023-03-21T00:00:00",  
            "mobility_data": [  
                {  
                    "region_from": 1,  
                    "region_to": 2,  
                    "count": 478,  
                    "percentage": 50,  
                    "valid": true,  
                },  
                {  
                    "region_from": 1,  
                    "region_to": 3,  
                    "count": 124,  
                    "percentage": 50,  
                    "valid": true,  
                }  
            ]  
        }  
    ]
```

```
}
```

```
]
```

```
}
```

4) Mobility

One of the key functions that those sensors and systems have called mobility, this function allows the system owner to analyze the movement patterns on a city wide scale.

The outcome of this function is X number of people who started their journey at point A followed by point B and finished at point C.

This information can be provided to any combination of points and at any length of movement patterns (called also Mobility N - where N represents the number of points in the mobility pattern).

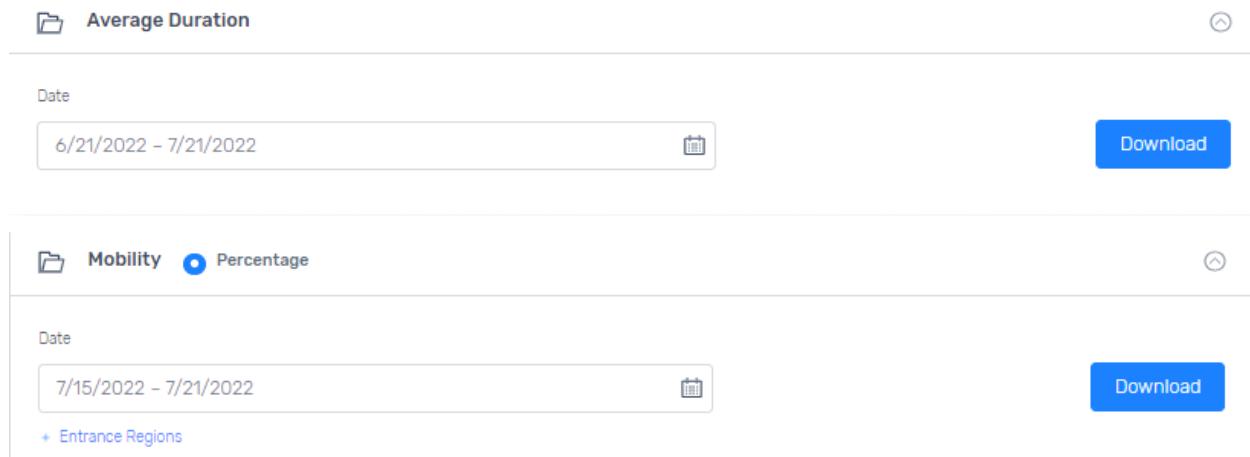
This information is generated by analyzing the raw data of the detections, whenever the same device is detected in a new location it creates a mobility pattern and the sum of the mobility points over a period of time is the outcome of mobility N analysis.

 [Visitor Count Weekly](#) 

Start week  End week  [Download](#)

 [Visitor Count Yearly](#) 

Start year  End year  [Download](#)



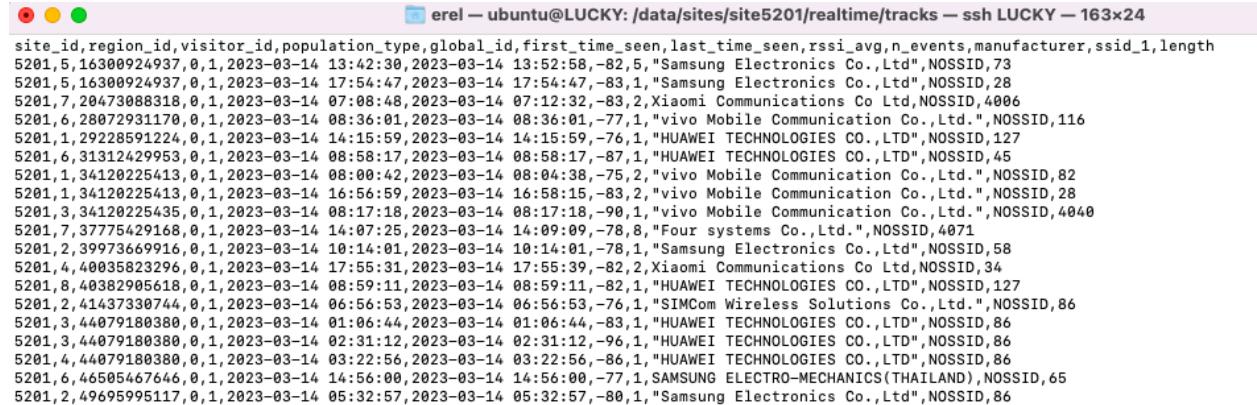
In our existing system mobility patterns can be generated in real time, using a process called tracking or offline using a process called “rebuild” which reprocesses all the past data.

The system processes the data on a daily basis, and by the end of the day the customer can decide what to do with the anonymized historic data which can be deleted or kept for future processing.

4) Data Privacy

The MAC addresses detected by the sensors are encrypted using a 2048 bits priority hashing algorithm which is based on a private keys mechanism. All sensors used by the same customer are required to use the same keys, while sensors associated with other customers can have different encryption keys. The encryption process is one-way hashing meaning that as long as the keys are the same, the same MAC address will be the same encrypted code.

Historical data is stored in CSV format.



```

site_id,region_id,visitor_id,population_type,global_id,first_time_seen,last_time_seen,rssi_avg,n_events,manufacturer,ssid_1,length
5201,5,16300924937,0,1,2023-03-14 13:42:30,2023-03-14 13:52:58,-82,5,"Samsung Electronics Co.,Ltd",NOSSID,73
5201,5,16300924937,0,1,2023-03-14 17:54:47,2023-03-14 17:54:47,-83,1,"Samsung Electronics Co.,Ltd",NOSSID,28
5201,7,204730888318,0,1,2023-03-14 07:08:48,2023-03-14 07:12:32,-83,2,Xiaomi Communications Co Ltd,NOSSID,4006
5201,6,28072931170,0,1,2023-03-14 08:36:01,2023-03-14 08:36:01,-77,1,"vivo Mobile Communication Co.,Ltd.",NOSSID,116
5201,1,29228591224,0,1,2023-03-14 14:15:59,2023-03-14 14:15:59,-76,1,"HUAWEI TECHNOLOGIES CO.,LTD",NOSSID,127
5201,6,31312429953,0,1,2023-03-14 08:58:17,2023-03-14 08:58:17,-87,1,"HUAWEI TECHNOLOGIES CO.,LTD",NOSSID,45
5201,1,34120225413,0,1,2023-03-14 08:00:42,2023-03-14 08:04:38,-75,2,"vivo Mobile Communication Co.,Ltd.",NOSSID,82
5201,1,34120225413,0,1,2023-03-14 16:56:59,2023-03-14 16:58:15,-83,2,"vivo Mobile Communication Co.,Ltd.",NOSSID,28
5201,3,34120225435,0,1,2023-03-14 08:17:18,2023-03-14 08:17:18,-90,1,"vivo Mobile Communication Co.,Ltd.",NOSSID,4040
5201,7,37775429168,0,1,2023-03-14 14:07:25,2023-03-14 14:09:09,-78,8,"Four systems Co.,Ltd.",NOSSID,4071
5201,2,39973669916,0,1,2023-03-14 10:14:01,2023-03-14 10:14:01,-78,1,"Samsung Electronics Co.,Ltd",NOSSID,58
5201,4,40035823296,0,1,2023-03-14 17:55:31,2023-03-14 17:55:39,-82,2,Xiaomi Communications Co Ltd,NOSSID,34
5201,8,40382905618,0,1,2023-03-14 08:59:11,2023-03-14 08:59:11,-82,1,"HUAWEI TECHNOLOGIES CO.,LTD",NOSSID,127
5201,2,41437330744,0,1,2023-03-14 06:56:53,2023-03-14 06:56:53,-76,1,"SIMCOM Wireless Solutions Co.,Ltd",NOSSID,86
5201,3,44079180380,0,1,2023-03-14 01:06:44,2023-03-14 01:06:44,-83,1,"HUAWEI TECHNOLOGIES CO.,LTD",NOSSID,86
5201,3,44079180380,0,1,2023-03-14 02:31:12,-96,1,"HUAWEI TECHNOLOGIES CO.,LTD",NOSSID,86
5201,4,44079180380,0,1,2023-03-14 03:22:56,2023-03-14 03:22:56,-86,1,"HUAWEI TECHNOLOGIES CO.,LTD",NOSSID,86
5201,6,46505467646,0,1,2023-03-14 14:56:00,2023-03-14 14:56:00,-77,1,SAMSUNG ELECTRO-MECHANICS(THAILAND),NOSSID,65
5201,2,49695995117,0,1,2023-03-14 05:32:57,2023-03-14 05:32:57,-80,1,"Samsung Electronics Co.,Ltd",NOSSID,86

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Raw Data

times_from	times_to	trace_counts	unique_trace_counts
2022-09-14 00:00:00	2022-09-14 03:00:00	22932	13
2022-09-14 03:00:00	2022-09-14 06:00:00	2581	10
2022-09-14 06:00:00	2022-09-14 09:00:00	10521	34
2022-09-14 09:00:00	2022-09-14 12:00:00	32710	29
2022-09-14 12:00:00	2022-09-14 15:00:00	43433	44
2022-09-14 15:00:00	2022-09-14 18:00:00	40296	28
2022-09-14 18:00:00	2022-09-14 21:00:00	37503	21
2022-09-14 21:00:00	2022-09-15 00:00:00	31043	7

Number of "K" tracks

The sensors

Our sensors are based on a Software Defined Radio which is able to listen passively to the WiFi 2.4 GHz (some versions are capable of monitoring the 5GHz band in addition to the 2.4GHz band) and to extract the WiFi headers that are transmitted over this frequency band.

- **OM2P**

OM2P	
WLAN Standard	802.11n (1x1)
Main Antenna	3dBi RP-SMA Omni
RF Power	MCS0: 400mw (26dBm) MCS7: 127mw (21dBm)
Receive Sensitivity	MCS0: -95dBm MCS7: -73dBm
Ethernet	2 (WAN & LAN)
POE	12-18v (non-802.3af)
Power Supply	12vdc, 110vac
LEDs	Power, Ethernet(2), Mesh
Temperature	0-50 C
Dimensions	3.75" x 2.75" x 1"
Certification	FCC / IC / CE

- **S100**

S100	
Processor	650 MHz
Antenna	Dual external antenna
WLAN standards	IEEE 802.11b/g/n 2.4 GHz (scanning interface, not for connectivity)
Memory	64 MB DDR
Ethernet	2 x 100 Mbps
LEDs	4 (Power, Ethernet (2), WiFi)
Certifications	KC, CE, RoHS
Operating temperature	0-50 C
Dimensions	11.22 cm x 2.53 cm x 8.68 cm (excluded antenna)
Weight	200 g
Outdoor enclosure available: dimensions	13.2 cm x 15.0 cm x 4.8 cm
DC Input	12 V / 1 A
PoE Input	Passive 36-57 V (standard 802.3af)
Consumption	

Supported ranges	1, 3, 5, 7, 10, 25, 100 meters.
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- ***Indoor sensor***

Indoor sensor	
Communication Protocol	LAN
Processor	1.5G-Z 64-bit quad-core ARM Cortex-A72
Memory/Storage	4GB / 32GB
Antenna	Dipole or Directional
Power Supply	5V (via USB type-C)
Power Consumption	Max 10W Average 4W
Operating Temperature	-30 ~ 75 C
Dimension	103mm x 144 x 36mm
LAN	1X 10/100/1000M LAN port (RJ45 interface)
WIFI	2.4GHz and 5GHz 802.11a/b/g/n/ac
Enclosure Box	Aluminium IPo/
Mounting Option	Available
Supported Detection Ranges	Software controlled up to 100 meters (Open Space)

- ***Outdoor Sensor***

Outdoor Sensor	
Communication Protocol	LAN
Processor	1.5G-Z 64-bit quad-core ARM Cortex-A72
Memory/Storage	4GB / 32GB
Antenna	1 antenna (external)
Power Supply	802.11af-PoE
Power Consumption	Max 4.7W Average 3.37W
Operating Temperature	-30 ~ 75 C
Dimension	212mm x 220 mm x 84mm
LAN	1X 10/100/1000M LAN port (RJ45 interface)
WIFI	2.4GHz and 5GHz 802.11a/b/g/n/ac
Enclosure Box	Aluminium IP67
Mounting Option	Available
Supported Detection Ranges	Software controlled up to 100 meters (Open Space)

- **Sensor with GPS**

Communication Protocol	LAN
Processor	1.5G-Z 64-bit quad-core ARM Cortex-A72
Memory/Storage	4GB / 32GB
Antenna	GPS antenna, omnidirectional antenna
Power Supply	Power cables
Power Consumption	Max 4.7W Average 3.37W
Operating Temperature	-15 ~ 50 C
Dimension	197mm x 147 x 86mm
LAN	1X 10/100/1000M LAN port (RJ45 interface)
WIFI	2.4GHz and 5GHz 802.11a/b/g/n/ac
Enclosure Box	Plastic
Supported Detection Ranges	Software controlled up to 100 meters (Open Space)