

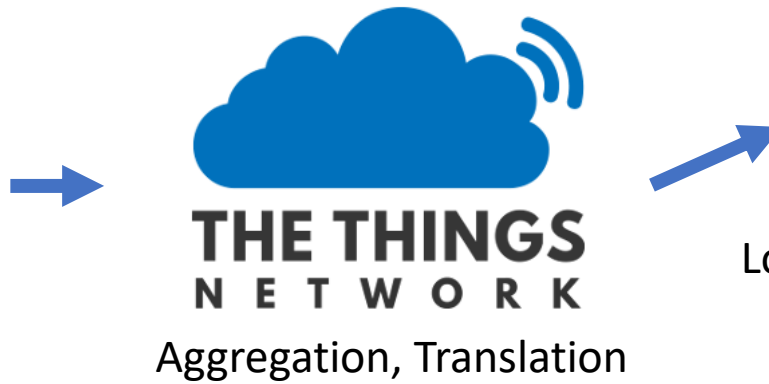
Abiro IoT

**Log and visualize
your IoT data**

Visualization

- Present your IoT data via easy to understand logs, lists, charts and maps, filtered on time and sensors
- Visualization is done internally in the tool (primarily aimed at personnel administering the sensor network) as well as via Microsoft Power BI or Google Data Studio (primarily aimed at end-users)
- What's seen on the screen can be downloadable as CSV files
- It consumes output from Sensative Yggio and The Things Network

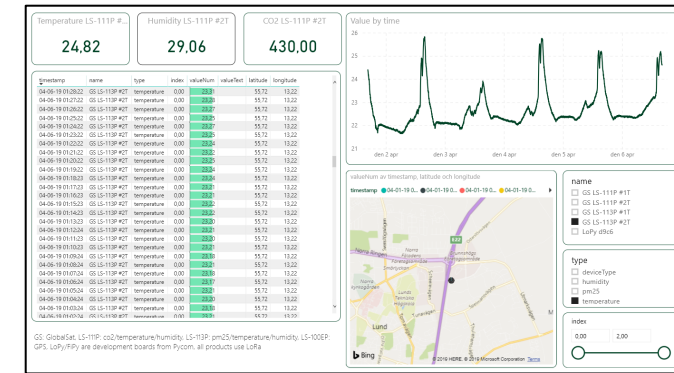
End-to-end solution



Abiro IoT



Logging, Visualization, Distribution



Visualization, Analysis

Abiro IoT

Abiro IoT

Features

- Automatic logging of all received data in raw and translated form
- Focus on continuous and interactive monitoring of sensor data
- Automatic detection of available sensors
- Choose one or more sensors to monitor
- Choose between predefined time windows and arbitrary start and end times
- Follow data over time via automatic updates

Features

- Flip between visualization types without losing settings
- Download sensor data for importing to Excel, Power BI etc
- Pre-integrated with Microsoft Power BI* and Google Data Studio
 - See separate sections
- API for data access from external applications

* via Streaming Dataset

Log

The screenshot displays the Abiro IoT log interface. At the top, there is a navigation bar with the Abiro IoT logo, links for Show Log, Portal, Reports, and Profile, and a user profile section for 'TTN Test at TTN Europe' with a Logout button. Below the navigation bar are several action buttons: Log, Status, List, Chart, Map, Refresh, Download, and Save. The main interface includes filters for Start time (2022-10-13 07:29:43), End time (2022-10-13 13:29:43), Interval (5 minutes), and checkboxes for 10x, Now, Follow, and Auto-refresh. There are also buttons for time-based filtering: All, 1 year, 3 months, 1 month, 1 week, 3 days, 1 day, 6 hours, 1 hour, and 10 minutes. The table is set to show 10 rows, sorted by Descending. The table has four columns: Received, Name, Location, and Data. The data rows show log entries for devices like 'feather-32u4-abp-1' and 'abiro-logy-d9c6' with their respective coordinates and JSON data payloads.

Received	Name	Location	Data
2022-10-13 13:28:19	feather-32u4-abp-1	55.719198,13.193912	{\"end_device_ids\":{\"device_id\":\"feather-32u4-abp-1\",\"application_ids\":{\"application_id\":\"abiro-iot\"},\"dev_ei\":{\"latitude\":\"55.71917837\",\"longitude\":\"13.19388969\",\"altitude\":\"5\",\"source\":\"SOURCE_REGISTRY\"},\"uplink_token\"
2022-10-13 13:21:18	abiro-logy-d9c6	55.719204,13.193923	{\"end_device_ids\":{\"device_id\":\"abiro-logy-d9c6\",\"application_ids\":{\"application_id\":\"abiro-iot\"},\"dev_eui\":{\"altitude\":\"28.5\",\"latitude\":\"55.7192\",\"longitude\":\"13.1935\",\"luminosity_6\":\"299\",\"luminosity_7\":\"262\",\"relative_hu\":{\"latitude\":\"55.719203609949474\",\"longitude\":\"13.193922936916353\",\"source\":\"SOURCE_REGISTRY\"}},\"netwo
2022-10-13 13:08:16	abiro-logy-d9c6	55.719204,13.193923	{\"end_device_ids\":{\"device_id\":\"abiro-logy-d9c6\",\"application_ids\":{\"application_id\":\"abiro-iot\"},\"dev_eui\":{\"altitude\":\"27.93\",\"latitude\":\"55.7192\",\"longitude\":\"13.1935\",\"luminosity_6\":\"171\",\"luminosity_7\":\"151\",\"relative_hu\":{\"latitude\":\"55.719203609949474\",\"longitude\":\"13.193922936916353\",\"source\":\"SOURCE_REGISTRY\"}},\"netwo
2022-10-13 13:07:05	abiro-logy-d9c6	55.719204,13.193923	{\"end_device_ids\":{\"device_id\":\"abiro-logy-d9c6\",\"application_ids\":{\"application_id\":\"abiro-iot\"},\"dev_eui\":{\"altitude\":\"27.93\",\"latitude\":\"55.7192\",\"longitude\":\"13.1935\",\"luminosity_6\":\"158\",\"luminosity_7\":\"137\",\"relative_hu\":{\"latitude\":\"55.7192\",\"longitude\":\"13.1935\",\"altitude\":\"27\",\"source\":\"SOURCE_GPS\"}},\"network_ids\":{\"net_id\":\"00
2022-10-13 13:02:21	abiro-logy-d9c6	55.719204,13.193923	{\"end_device_ids\":{\"device_id\":\"abiro-logy-d9c6\",\"application_ids\":{\"application_id\":\"abiro-iot\"},\"dev_eui\":{\"altitude\":\"27.25\",\"latitude\":\"55.7192\",\"longitude\":\"13.1935\",\"luminosity_6\":\"152\",\"luminosity_7\":\"132\",\"relative_hu\":{\"latitude\":\"55.719203609949474\",\"longitude\":\"13.193922936916353\",\"source\":\"SOURCE_REGISTRY\"}},\"netwo

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Show Log only

Status

Abiro IoT [Show Log](#) [Portal](#) [Reports](#) [Profile](#) TTN Test at TTN Europe [Logout](#)

[Log](#) [Status](#) [List](#) [Chart](#) [Map](#) [Refresh](#) [Download](#) [Save](#)

Start time **End time** **Interval** 5 minutes **10x** **Now** **Follow** **Auto-refresh**

[All](#) [1 year](#) [3 months](#) [1 month](#) [1 week](#) [3 days](#) [1 day](#) [6 hours](#) [1 hour](#) [10 minutes](#)

Name **Status** Active **Sort on time**

Received	Name
2022-10-13 13:21:18	abiro-lopy-d9c6
2022-10-13 13:28:19	feather-32u4-abp-1

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List

Abiro IoT [Show Log](#) [Portal](#) [Reports](#) [Profile](#) TTN Test at TTN Europe [Logout](#)

[Log](#) [Status](#) [List](#) [Chart](#) [Map](#) [Refresh](#) [Download](#) [Save](#)

Start time **End time** **Interval** 5 minutes **10x Now Follow** **Auto-refresh**

[All](#) [1 year](#) [3 months](#) [1 month](#) [1 week](#) [3 days](#) [1 day](#) [6 hours](#) [1 hour](#) [10 minutes](#)

Node **Sensor** **Multiple Condition** **Value**

Paging [Top](#) [Up](#) [Down](#) **Rows** **Showing** 1 to 10 of 97 **Descending**

Received	Name	Type	Value	Location
2022-10-13 13:21:18	abiro-lopy-d9c6	temperature_3	28	55.719204,13.193923
2022-10-13 13:08:16	abiro-lopy-d9c6	temperature_3	28	55.719204,13.193923
2022-10-13 13:07:05	abiro-lopy-d9c6	temperature_3	27.9	55.719204,13.193923
2022-10-13 13:02:21	abiro-lopy-d9c6	temperature_3	28	55.719204,13.193923
2022-10-13 12:58:47	abiro-lopy-d9c6	temperature_3	28	55.719204,13.193923
2022-10-13 12:57:36	abiro-lopy-d9c6	temperature_3	28	55.719204,13.193923
2022-10-13 12:52:52	abiro-lopy-d9c6	temperature_3	28	55.719204,13.193923
2022-10-13 12:48:08	abiro-lopy-d9c6	temperature_3	28.1	55.719204,13.193923
2022-10-13 12:46:57	abiro-lopy-d9c6	temperature_3	28.1	55.719204,13.193923
2022-10-13 12:45:46	abiro-lopy-d9c6	temperature_3	28.1	55.719204,13.193923

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Show Log only

Chart



Map

Abiro IoT Show Log Portal Reports Profile TTN Test at TTN Europe [Logout](#)


[Log](#) [Status](#) [List](#) [Chart](#) [Map](#) [Refresh](#) [Download](#) [Save](#)

Start time 2022-10-13 07:31:41 **End time** 2022-10-13 13:31:41 **Interval** 5 minutes **10x Now Follow Auto-refresh**

[All](#) [1 year](#) [3 months](#) [1 month](#) [1 week](#) [3 days](#) [1 day](#) [6 hours](#) [1 hour](#) [10 minutes](#)

Node all **Sensor** abiro-lopy-d9c6/temperature_3 **Multiple Condition** none **Value** 0

Map Satellite



Google Keyboard shortcuts Map data ©2022 Imagery ©2022 Terms of Use Report a map error

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Logging

- Received sensor data is logged with a time stamp
- Data is stored both in raw form (visible via Log) and translated form (visible via List, Chart and Map)
- Users only access their own data
- Accessed via **Show Log**
- Business setup controls for how long time data should be stored



Connect to Yggio

- Log in to your account at Abiro IoT
- Click on **Authorize** in the menu
- Log in to your account at Yggio if needed
- After successful authorization
 - You can now use **Visualize Yggio**
 - Owner ID in Profile should be set

Owner ID:

59ef62499405d700013f50fa

Power BI Push URL:

<https://api.powerbi.com/beta/1e4a4075-308a-42eb-a09f-b6b3086ab44a/datasets/4df2be9a-9145-4447-93c3-1f28904088e>



Microsoft Power BI



Create reports and dashboards

- See the data that's relevant to you, the way you want
- Use powerbi.com or Power BI Desktop for editing
- Data can be provided via a Streaming Dataset or imported as CSV files from Abiro IoT
- Create visualizations via all the possibilities that Power BI provides

Power BI Desktop



Power BI sensors streaming - Power BI Desktop

File Home View Modeling Help Anders Borg

Clipboard External data Insert Custom visuals Themes Relationships Calculations Share

Latest temperature Latest humidity Latest CO2

22.44 36.31 503.00

timestamp	name	type	index	valueNum	valueText	latitude	longitude
03/27/19 09:57:55 AM	carb_temp_hum2-translated	humidity	0.00	36.31		55.72	13.15
03/27/19 09:56:55 AM	carb_temp_hum2-translated	humidity	0.00	36.43		55.72	13.15
03/27/19 09:55:55 AM	carb_temp_hum2-translated	humidity	0.00	36.43		55.72	13.15
03/27/19 09:54:55 AM	carb_temp_hum2-translated	humidity	0.00	36.39		55.72	13.15
03/27/19 09:53:55 AM	carb_temp_hum2-translated	humidity	0.00	36.30		55.72	13.15
03/27/19 09:52:55 AM	carb_temp_hum2-translated	humidity	0.00	36.40		55.72	13.15
03/27/19 09:51:55 AM	carb_temp_hum2-translated	humidity	0.00	36.46		55.72	13.15
03/27/19 09:50:55 AM	carb_temp_hum2-translated	humidity	0.00	36.42		55.72	13.15
03/27/19 09:49:55 AM	carb_temp_hum2-translated	humidity	0.00	36.38		55.72	13.15
03/27/19 09:48:55 AM	carb_temp_hum2-translated	humidity	0.00	36.34		55.72	13.15
03/27/19 09:47:55 AM	carb_temp_hum2-translated	humidity	0.00	36.30		55.72	13.15
03/27/19 09:46:55 AM	carb_temp_hum2-translated	humidity	0.00	36.42		55.72	13.15
03/27/19 09:45:55 AM	carb_temp_hum2-translated	humidity	0.00	36.35		55.72	13.15
03/27/19 09:44:55 AM	carb_temp_hum2-translated	humidity	0.00	36.47		55.72	13.15
03/27/19 09:43:56 AM	carb_temp_hum2-translated	humidity	0.00	36.42		55.72	13.15
03/27/19 09:42:56 AM	carb_temp_hum2-translated	humidity	0.00	36.34		55.72	13.15
03/27/19 09:41:56 AM	carb_temp_hum2-translated	humidity	0.00	36.26		55.72	13.15
03/27/19 09:40:55 AM	carb_temp_hum2-translated	humidity	0.00	36.28		55.72	13.15
03/27/19 09:39:56 AM	carb_temp_hum2-translated	humidity	0.00	36.31		55.72	13.15
03/27/19 09:38:56 AM	carb_temp_hum2-translated	humidity	0.00	36.25		55.72	13.15
03/27/19 09:37:56 AM	carb_temp_hum2-translated	humidity	0.00	36.19		55.72	13.15
03/27/19 09:36:56 AM	carb_temp_hum2-translated	humidity	0.00	36.27		55.72	13.15
03/27/19 09:35:56 AM	carb_temp_hum2-translated	humidity	0.00	36.14		55.72	13.15
03/27/19 09:34:56 AM	carb_temp_hum2-translated	humidity	0.00	36.07		55.72	13.15
03/27/19 09:33:56 AM	carb_temp_hum2-translated	humidity	0.00	36.06		55.72	13.15
03/27/19 09:32:56 AM	carb_temp_hum2-translated	humidity	0.00	36.20		55.72	13.15
03/27/19 09:31:56 AM	carb_temp_hum2-translated	humidity	0.00	36.18		55.72	13.15
03/27/19 09:30:56 AM	carb_temp_hum2-translated	humidity	0.00	36.23		55.72	13.15
03/27/19 09:29:56 AM	carb_temp_hum2-translated	humidity	0.00	36.09		55.72	13.15
03/27/19 09:28:56 AM	carb_temp_hum2-translated	humidity	0.00	36.17		55.72	13.15
03/27/19 09:27:56 AM	carb_temp_hum2-translated	humidity	0.00	35.95		55.72	13.15
03/27/19 09:26:56 AM	carb_temp_hum2-translated	humidity	0.00	35.97		55.72	13.15
03/27/19 09:25:57 AM	carb_temp_hum2-translated	humidity	0.00	35.92		55.72	13.15
03/27/19 09:24:56 AM	carb_temp_hum2-translated	humidity	0.00	35.93		55.72	13.15

Value by time

valueNum by timestamp, latitude and longitude

name

- AbiroLoPyd9c6
- carb_temp_hum2-translated

type

- co2
- deviceType
- humidity
- temperature

index

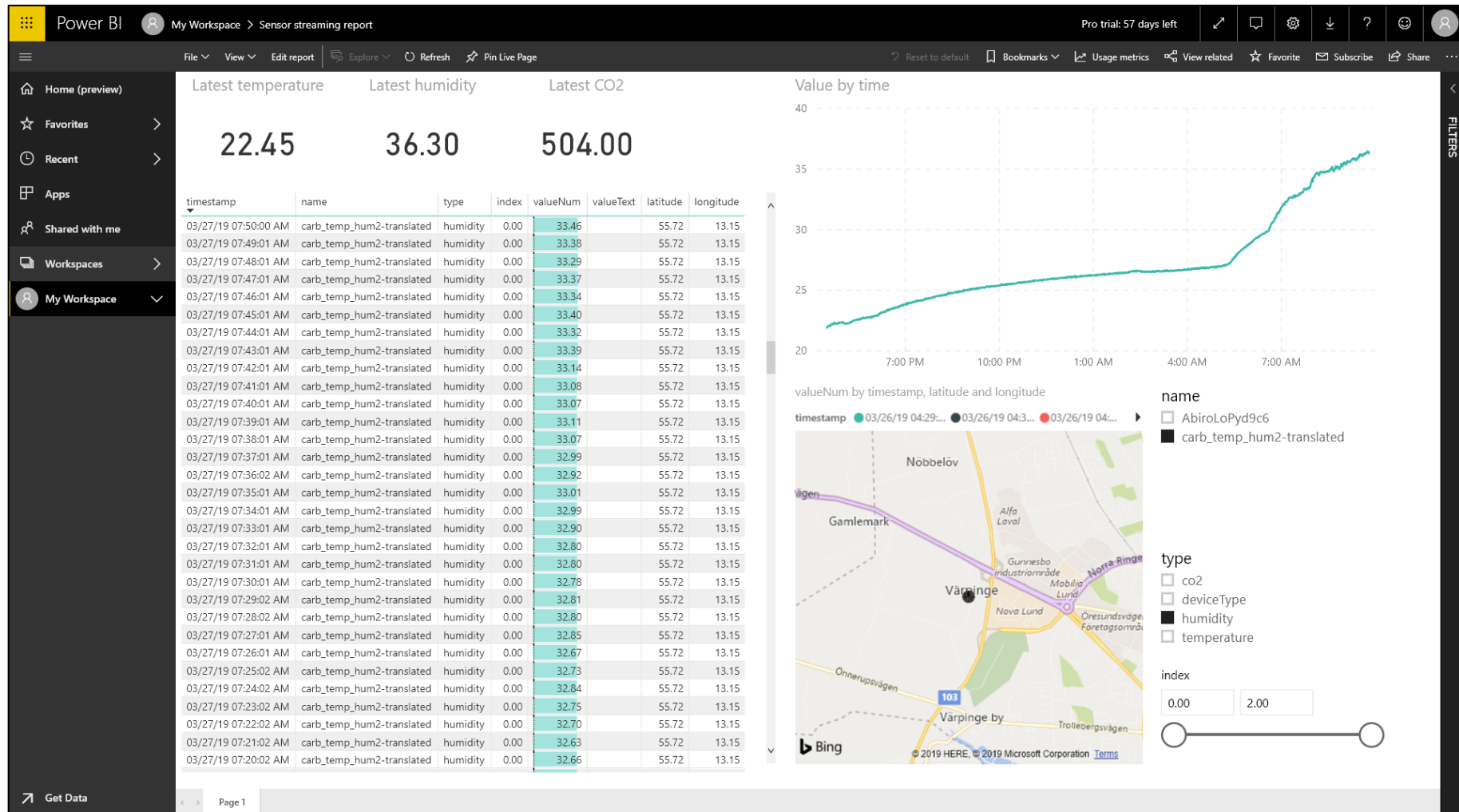
0.00 2.00

Page 1

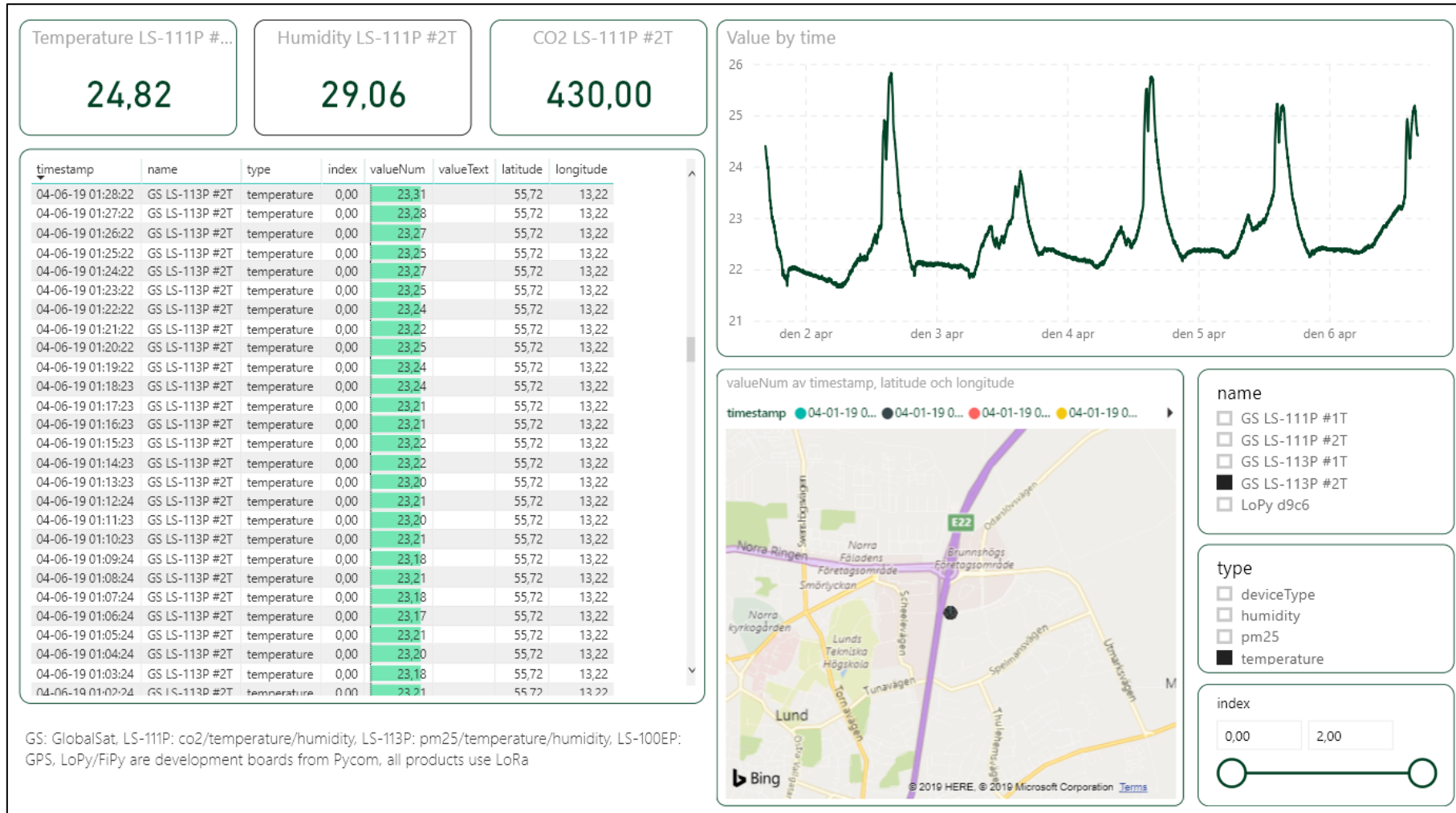
PAGE 1 OF 1

Connected live to the Power BI dataset: Sensor streaming dataset in My workspace

powerbi.com, Report



powerbi.com, Dashboard





Configuration of Streaming Dataset

Configure a Streaming Dataset

Edit streaming dataset

Create a streaming dataset and integrate our API into your device or application to send data. [Learn more about the API.](#)

* Required

Dataset name *

Sensor streaming dataset

Values from stream *

timestamp	DateTime	🗑
name	Text	🗑
type	Text	🗑
index	Number	🗑
valueNum	Number	🗑
valueText	Text	🗑
latitude	Number	🗑
longitude	Number	🗑

Enter a new value name

Text

```
{
  "timestamp": "2019-03-27T09:45:12.6922",
  "name": "AAAAA555555",
  "type": "AAAAA555555",
  "index": 98.6,
  "valueNum": 98.6,
  "valueText": "AAAAA555555",
  "latitude": 98.6,
  "longitude": 98.6
}
```

Historic data analysis

On

Done Cancel

Copy the Power BI Post URL to your profile in Abiro IoT

API info on Sensor streaming dataset

Use the API endpoint URL and one of the examples shown below to send data to your streaming dataset. For more information, [read our API documentation and integration guide.](#)

Push URL

<https://api.powerbi.com/beta/1e4a4075-308a-42eb-a09f-b6b3086ab44a/dat>

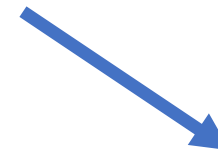
Raw cURL PowerShell

```
{
  "timestamp": "2019-03-27T09:46:41.040Z",
  "name": "AAAAA555555",
  "type": "AAAAA555555",
  "index": 98.6,
  "valueNum": 98.6,
  "valueText": "AAAAA555555",
  "latitude": 98.6,
  "longitude": 98.6
}
```

Done

Abiro IoT

Power BI Push URL:
<https://api.powerbi.com/beta/1e4a4075-308a-42eb-a09f-b6b3086ab44a/datasets/4df2be9a-9145-4447-93c3-1f28904088er>



Abiro IoT transfers sensor data in this format



Google
Data Studio

Google Data Studio



Create reports

- See the data that's relevant to you, the way you want
- Use datastudio.google.com for editing
- Data can be provided in real time via Abiro IoT's API or imported as CSV files from Abiro IoT
- Create visualizations via all the possibilities that Data Studio provides



Connector - Code

```
Connector for Abiro IoT
File Edit View Run Publish Resources Help
redsmurph@gmail.com
Share

Code.gs
appscript.json
1 {
2   "dataStudio": {
3     "name": "Connector for Abiro IoT",
4     "logoUrl": "https://iot.abiro.com/logosq.png",
5     "company": "Abiro AB",
6     "companyUrl": "https://abiro.com",
7     "supportUrl": "https://abiro.com",
8     "description": "Get and visualize data from Abiro IoT.",
9     "addonUrl": "https://abiro.com"
10  }
11 }
12 }
```


```
Connector for Abiro IoT
File Edit View Run Publish Resources Help
redsmurph@gmail.com
Share

Code.gs
appscript.json
1 /* global DataStudioApp */
2 /* global UriFetchApp */
3
4 // https://script.google.com/home
5 // https://developers.google.com/datastudio/connector/reference
6
7 function getAuthType() {
8   var response = {type: 'NONE'};
9   return response;
10 }
11
12 function getConfig(request) {
13   var cc = DataStudioApp.createCommunityConnector();
14   var config = cc.getConfig();
15
16   config.newInfo()
17     .setId('instructions')
18     .setText('Enter information to retrieve data from Abiro IoT.');
```


Can be customized based on customer requirements



Connector - Configuration

 Connector for Abiro IoT


← BYT ANSLUTARE

 **Connector for Abiro IoT**
Av Abiro AB

Get and visualize data from Abiro IoT.

[LÄS MER](#) [ANMÄL ETT PROBLEM](#)

Det är ditt ansvar att läsa och följa alla tillämpliga användarvillkor från tredje part.

 **Obs!** Denna anslutare har inte verifierats eller granskats. Vi rekommenderar att du bara använder anslutare för grupper från pålitliga källor.

Enter information to retrieve data from Abiro IoT.

User name for an account at Abiro IoT

Password for an account at Abiro IoT

Node name to search for (optional and fuzzy)

Sensor type to search for (optional and fuzzy)

Sensor index to search for (optional)

Max amount of data points

Connector - Data



Connector for Abiro IoT

Användaruppgifter för data: [Ägare](#) | Dataaktualitet: [12 timmar](#) | Åtkomst till gruppvisualiseringar: [Av](#) | Fältredigering i rapporter: [På](#) | [SKAPA RAPPORT](#) | [UTFORSKA](#)

← REDIGERA ANSLUTNING + LÄGG TILL ETT FÄLT

Index	Fält ↓	Typ ↓	Sammanställning ↓	Beskrivning ↓	Sök fält
1	Created	Datum (ÅÅÅÅMDD)	Ingen		
2	Created date	Datum (ÅÅÅÅMDD)	Ingen		
3	Created date/hour	Datum och timme (ÅÅÅ...	Ingen		
4	Created hour	Timme (HH)	Ingen		
5	Created minute	Minut (mm)	Ingen		
6	Name	ABC Text	Ingen		
7	Type	ABC Text	Ingen		
8	Index	123 Nummer	Ingen		
9	Value	123 Nummer	Genomsnitt		
10	Value as text	ABC Text	Ingen		
11	Latitude/Longitude	Latitud, longitud	Ingen		
12	Latitude	123 Nummer	Ingen		
13	Longitude	123 Nummer	Ingen		

Report - Editing



Report Demo for Abiro IoT

Arkiv Redigera Visa Infoga Sida Ordna Resurs Hjälp

Lägg till en sida Lägg till ett diagram Layout och tema ...

Created	Name	Type	Value
1. 2019-05-16 00:00:00	TalkPool OY1110 #1T	temperature	20,4
2. 2019-05-15 23:45:01	TalkPool OY1110 #1T	temperature	20,5
3. 2019-05-15 23:30:00	TalkPool OY1110 #1T	temperature	20,6
4. 2019-05-15 23:15:01	TalkPool OY1110 #1T	temperature	20,6
5. 2019-05-15 23:00:01	TalkPool OY1110 #1T	temperature	20,7
6. 2019-05-15 22:45:00	TalkPool OY1110 #1T	temperature	20,7
7. 2019-05-15 22:30:01	TalkPool OY1110 #1T	temperature	20,8
8. 2019-05-15 22:15:00	TalkPool OY1110 #1T	temperature	20,9
9. 2019-05-15 22:00:00	TalkPool OY1110 #1T	temperature	21
... 2019-05-15 21:45:00	TalkPool OY1110 #1T	temperature	21,2

Created	Name	Type	Value
1. 2019-05-16 00:00:00	TalkPool OY1110 #1T	humidity	30,6
2. 2019-05-15 23:45:01	TalkPool OY1110 #1T	humidity	30,6
3. 2019-05-15 23:30:00	TalkPool OY1110 #1T	humidity	30,5
4. 2019-05-15 23:15:01	TalkPool OY1110 #1T	humidity	30,3
5. 2019-05-15 23:00:01	TalkPool OY1110 #1T	humidity	30,2
6. 2019-05-15 22:45:00	TalkPool OY1110 #1T	humidity	30,1
7. 2019-05-15 22:30:01	TalkPool OY1110 #1T	humidity	29,9
8. 2019-05-15 22:15:00	TalkPool OY1110 #1T	humidity	29,8
9. 2019-05-15 22:00:00	TalkPool OY1110 #1T	humidity	29,5
... 2019-05-15 21:45:00	TalkPool OY1110 #1T	humidity	29,2

1 - 100 / 1423

Temperature

Humidity

Diagram > Tidsserie

DATA STIL

Datakälla
Yggio connector
KOMBINERA DATA

Dimension
Tidsdimension
Created date/hour

Hierarki

Uppdelningsdimension
Lägg till dimension

Mätvärde
AVG Value
Lägg till mätvärde

Standarddatumintervall
Automatiskt
Anpassat
13 maj 2019 - 16 maj...

Datumintervall för jämförelse
Inga

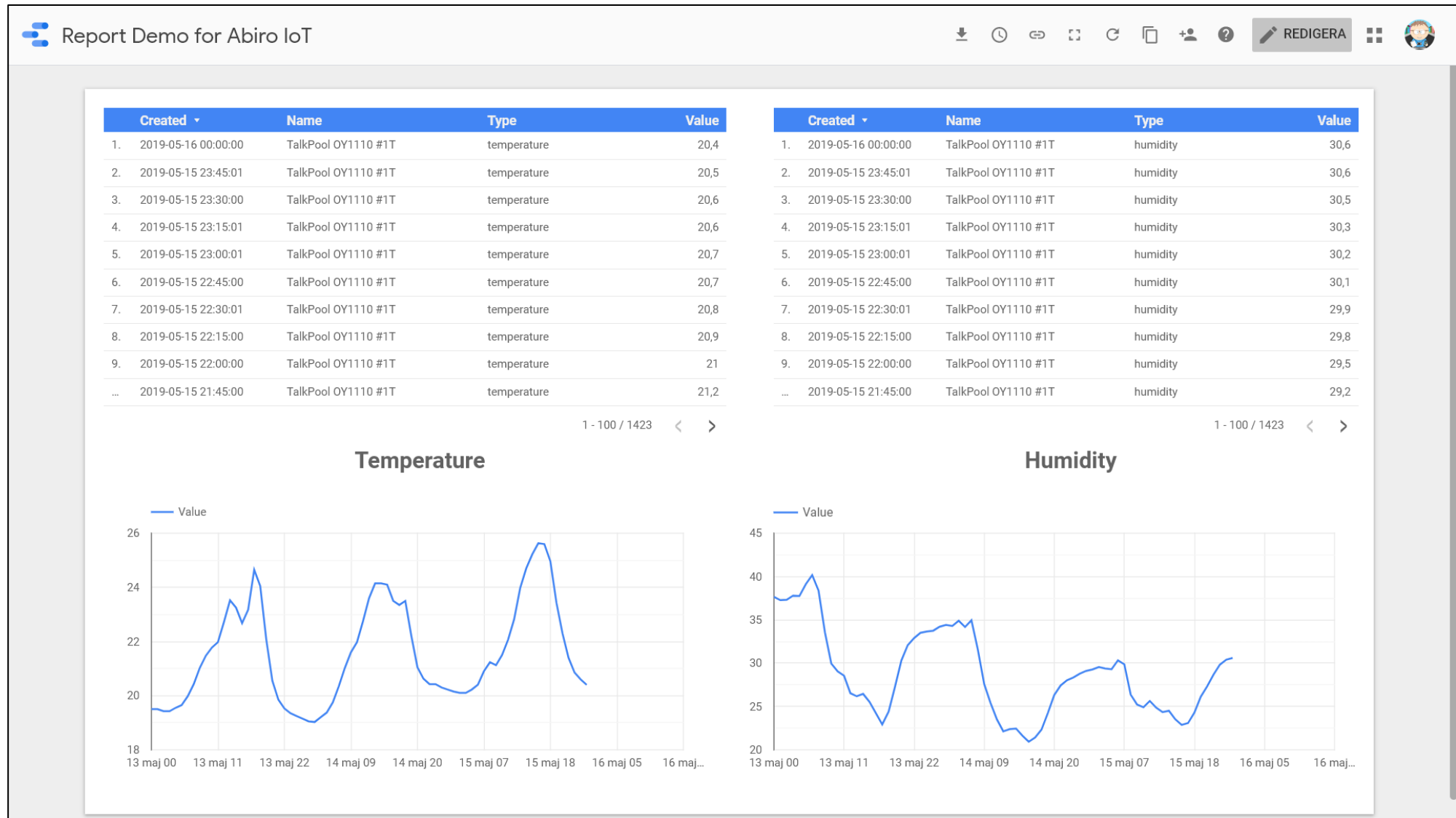
Filter
Tidsserie-Filter
Filter för Type
LÄGG TILL FILTER

Tillgängliga fält
Skriv sökord här
Created
Created date
Created date/hour
Created hour
Created minute
Index
Latitude/Longitude
Name
Type
Latitude
Longitude
Value
Value as text

SKAPA NYTT FÄLT



Report - Publishing



Business model

- Abiro IoT:
 - Upfront fee + subscription
 - Consulting fee for possible customizations
- Power BI and Data Studio:
 - Consulting fee for work with integration, data adaptation, reports, dashboards etc
 - Even independent of Abiro IoT and Yggio

Other offerings from Abiro

Within IoT

- Integrations between systems
 - Real estate systems
 - Alarm systems
 - Weather services
 - Machine Learning
 - etc
- Sensors based on Pycom, Arduino, Raspberry Pi
 - Hardware prototypes as well as programming

CLIQTAGS

- A content management system for mobile-adapted interactive sites
- All administration is done in the cloud
- Each customer gets its own account
- Created sites can be customer-adapted
- Smart pages types provide interaction: forms, payments, news feeds, sharing etc
- It's easy to work with multiple sites
- Detailed statistics enables follow-up
- Content can be time-controlled
- Sites can be converted to mobile apps

