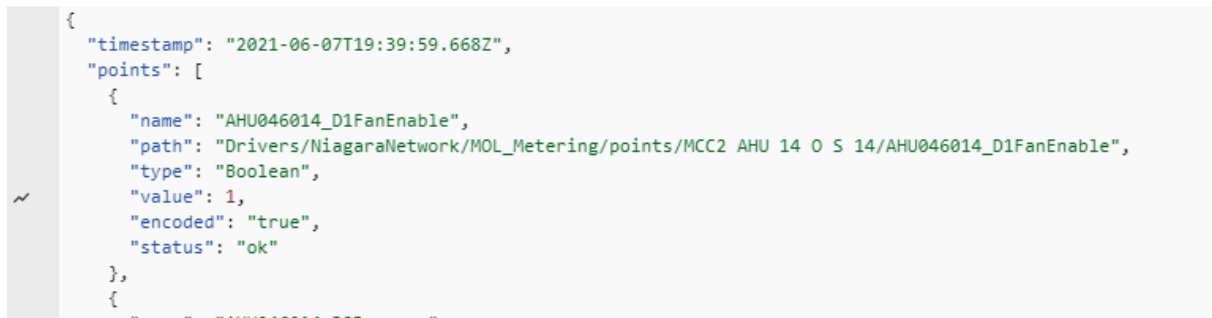## 2.28   Data validity

As there were concerns regarding the validity of the data, we thought it to be helpful to document the issues or rather inconsistencies we encountered working with it and provide these to you, so you are able to address them at a given time, if need be. It can be assumed that the incompleteness / inconsistency of the date stems from the following:

Accessing the data via the MQTT Explorer the data is bundled in (atm.) 10 different points, these are:
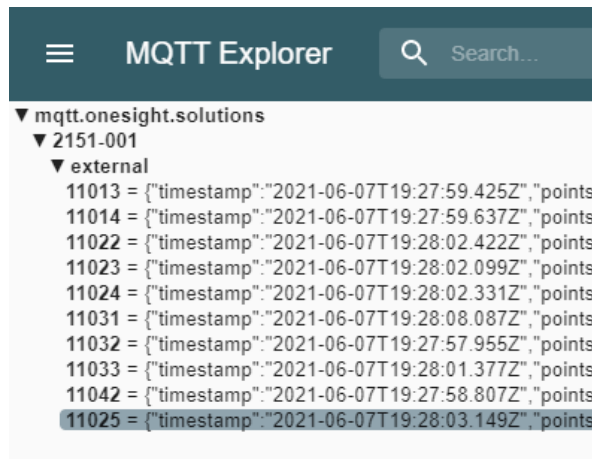
Graphic 1: Points 110 - 13,14,22,23,24,25,31,32,33,42

By selecting one of the points the data is shown in JSON format, which can be further converted to e.g Excel. The problem here is that some of the points seem to be incomplete. The first noticeable discrepancy between the points is that the shown JSON code for certain points differs as shown in graphic 2 and 3:

```
{
    "timestamp": "2021-06-07T19:39:59.668Z",
    "points": [
        {
            "name": "AHU046014_D1FanEnable",
            "path": "Drivers/NiagaraNetwork/MOL_Metering/points/MCC2 AHU 14 O S 14/AHU046014_D1FanEnable",
            "type": "Boolean",
            "value": 1,
            "encoded": "true",
            "status": "ok"
        },
        {
            "name": "AHU046014_D2Dampers"
```

Graphic 2: Correct format

{"timestamp":"2021-06-07T19:42:02.518Z","points":[{"name":"AHU016010_D21AHU10MixingDamper","path":"Drivers/NiagaraNetwork/MOL_Metering/points/MCC2 AHU 7,8 & 10 /AHU016010_D21AHU10MixingDamper","type":"Numeric","value":0,"units":"percent","status":"ok"},
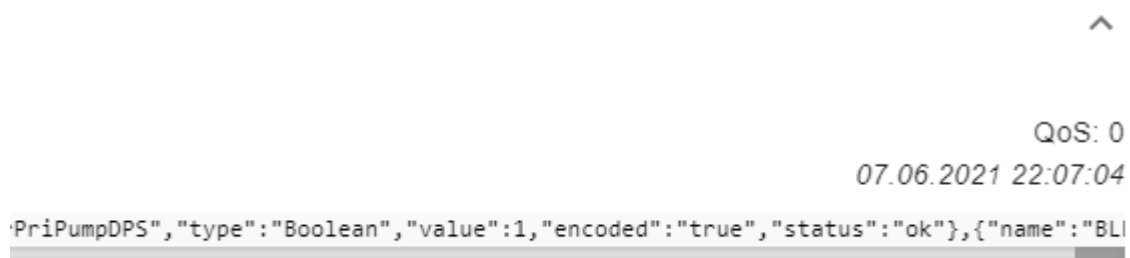
Graphic 3: Incorrect format

As can be seen the data shown in the two points varies in that the complete code is structured properly where as in the incomplete version it is only shown in one line of code. The structureless points are:

- 11022
- 11023
- 11024
- 11031

- 11033
- 11025

On further investigation and in trying to convert the points into Excel to be able to work with the data, we noticed that the non-structured points seemed to be incomplete not only are they missing the code enclosing bracket "}" but the data seems to be cut of at a certain point, as can be seen in graphic 4:

QoS: 0
07.06.2021 22:07:04

```
PriPumpDPS","type":"Boolean","value":1,"encoded":"true","status":"ok"},{"name":"BL
```

Graphic 4: Cut of code although slidebar at the edge

We could check the fact that the data is cut of at a certain point and eliminate the initial conclusion that the slide bar is too short by using the, in the MQTT Explorer integrated, copying function with which we tried to see whether it would copy any missing and just unseen code, which it did not.

The result is that certain data regarding AHUs is available where as for others there is none. Also, the available data for the AHUs varies from one AHU to the other. Additionally, while migrating the data to our website we noticed that, there were certain times where no data was transmitted, as can be seen in the graphic 5 below.

Graphic 5: Lack of data transmission

Another, inconsistency we encountered was regarding the naming. For example, while according to the information you sent us AHU 9 does not support Gallery 3, but rather Gallery 13, after exporting the data of AHU 9 to an excel sheet we discovered the following; First as said although AHU 9 should have nothing to do with Gallery 3, "AHU026009_S56Gallery3MinTemp" was one of the datapoint names. Not only that

but the naming was inconsistent as a whole e.g.,
"AHU026009_S54Galley3MaxTemp" was the corresponding datapoint but is lacking n "r" in "Gallery".

Although we cannot conclude where the problem lies exactly, we would highly suggest addressing the mentioned inconsistencies to your third-party provider, for this could show to be an issue in the future. If this has not already, we further suggest to test the datapoints in some form or way, for example by technicians or engineers of some sort, to check what individual measures show and compare a variety of them to see if the gathered data is valid in the first place. We see the mentioned as crucial steps towards working with the sensors and the data itself in the future.