

## MQTT Data Interfaces

### Input Topics ( gateways -> SSC )

We have implemented 4 MQTT topics where gateways (locations) publish data to the SSC (Social Sensor Cloud) Broker.

a) **events**/[serial]/[sensor\_id]

For triggered events containing 1 state of a sensor evaluation and 1 or more value of the checked sensor values that the evaluated resulted into triggering an event.

b) **hd**/[serial]/[application/gzip]

For scheduled values of the sensors during a time period. Each individual sensor can create one of more checked values during the interval of the scheduled time to send to the SSC Broker. Messages are compressed in gzip format.

c) **sys\_msg**/[serial]

For specific system messages of the gateways regarding the behaviors of the software.

d) **config\_backup**/[serial]/[application/gzip]

Scheduled backups of the gateways to be stored in the SSC.

### Output Topics ( SSC -> gateways )

And 2 MQTT topics to publish data into the SSC Broker where gateways (locations) listen to.

e) **cloud**/[serial]/**jobs**/[application/gzip]

Configuration Jobs: Containing data and instructions to be deployed and executed in the gateways for software updates and configuration changes.

Active Monitoring Jobs: For publishing a json message with instructions to activate the active listening in the webapp, so that the sensor values are sent automatically as collected, without waiting for the next hd/ topic interval.

Access Control Jobs: Used to publish configuration data regarding keypads for physical access into the installations.

f) **cloud**/[serial]/**exec\_action**/[actuator\_id]

Instructions to Actuators through a json message with commands for triggering actions.

Some JSON data format examples:

a) **events/**

**Topic:**events/cloudtestSC85/FuelTank\_Flow

**Payload:**

```
[
  {
    "hd": [
      {
        "sensor_id": "FuelTank_Volume",
        "timestamp": "2014-11-20T19:02:59.975Z+0100",
        "value": 1146.68
      },
      {
        "sensor_id": "FuelTank_Flow",
        "timestamp": "2014-11-20T19:02:59.975Z+0100",
        "value": 235.65000000000005
      }
    ],
    "output": "eval based on 235.65",
    "sensor_id": "FuelTank_Flow",
    "state": "CRITICAL",
    "timestamp": "2014-11-20T19:03:00.021Z+0100"
  }
]
```

b) **hd/**

**Topic:**hd/cloudtestSC85/application/gzip

**Payload: (unzipped)**

```
[
  {
    "value": "this is a text value",
    "sensor_id": "displayText",
    "timestamp": "2014-09-04T16:13:29.661Z+0100"
  },
  {
    "value": 20.0,
    "sensor_id": "AC_Meter_frequency",
    "timestamp": "2014-09-04T16:13:39.658Z+0100"
  },
  {
    "value": true,
    "sensor_id": "Door1Open",
    "timestamp": "2014-09-04T16:13:49.658Z+0100"
  },
  {
    "sensor_id": "Temperature-T0410",
    "timestamp": "2014-10-23T17:28:52.658Z+0100",
    "value": null
  }
]
```

c) **sys\_msg/**

**Topic:**sys\_msg/cloudtestSC85

**Payload:**

```
[
  {
    "timestamp" : "2014-10-17T08:07:23.879Z+0100",
    "type" : "job_status",
    "severity" : "INFO",
    "code" : 123,
    "output_short" : "Job started",
    "output_long" : "Job started aadj asdjl",
    "references" : {
      "job_id" : 1,
      "action_id" : "",
      "sensor_id" : "",
      "device_id" : "",
      "sensor_gateway_id" : "",
      "publisher" : "jobProcessor,v123"
    }
  }
]
```

f) **cloud/[serial]/exec\_action/[actuator\_id]**

**Topic:**cloud/cloudtestSC85/exec\_action/Switch\_Generator

**Payload:**

START

**Topic:**cloud/cloudtestSC85/exec\_action/Switch\_Generator

**Payload:**

STOP