Online metering system documentation

Introduction

In the electricity market, the level of service of electricity supply is the most important service criterion. Continuity and balance of supply are fundamental requirements. This can be ensured by accurate forecasting on the (system) operator side. As a consequence of accurate forecasting, electricity generation and consumption can be better harmonised, ensuring the appropriate level of service of electricity supply and the need for balancing energy (BE), particularly more pronounced in the case of renewable energy generation, can be reduced. In the schedule groups managed by CEZ Hungary Ltd. (CEZ), or among market settlement areas, the company requires the deployment of a so-called "online metering system". The deployment of this metering data collection system – in coherence with Directive 2009/72/EC of the European Parliament and of the Council and with the industry's best metering practices – serves the purpose of CEZ receiving data from the points of delivery of the generator/consumer electricity grids in real time, using these in the prediction practices of the power plants the company schedules, in order to improve the accuracy of intraday forecasting.

1. Online metering system

1.1. Collection of electric power data in the metering data collection system:
- takes place from the settlement meter of the point of delivery (POD);
- is implemented in a manner following the specifications of the distribution system operator (e.g. by galvanically isolated connection from the meter's S0 terminal);
- takes place in real-time;
- cumulated in kWh;
- has an accuracy of 99% or higher in comparison to the settlement meter;
- broken down to a resolution of at least 5-minute time intervals or finer (depending on the generation capacities involved);

1.2. The system's operation

The system sends time series generation data collected from the generation POD's settlement meter every 5 minutes with a 5-minute temporal resolution, via FTP (File Transfer Protocol) protocol in a predetermined file format (JSON). The data sent in time series are listed according to the UTC time zone with an error tolerance of +/-0.5 seconds (ISO 8601), in which the date indicated the start of the period. It is recommended to use the continuous NTP time synchronisation in order to sustain the temporal accuracy of the metering results.

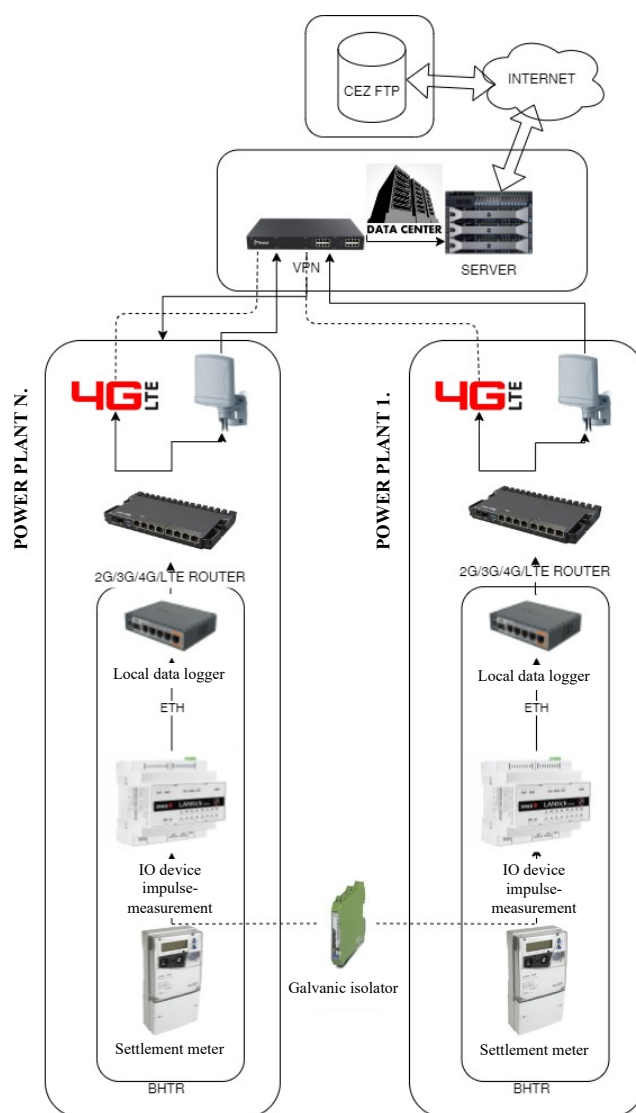## 2. Example of the topology of a metering data collection system

Figure 1.

3. Composition of the JSON data structure

Name of the uploaded JSON file: POD-YYYY-MM-DD.json

Ex. HU000310B11-S10000000000000000001-2023-01-29.json

Explanation:

    unitType: the unit of measurement of the generation data. Value: kWh

    intervalInMinutes: frequency of sending data. Default value: 5

    production.startDateTime: start of period

    production.quantity: generation measured in the period. If the quantity generated in the period is not known, its value is 0

production.status: status of the data.

If data arrive throughout the entire period: W

When data only arrive for a part of a period, or no data arrive at all: F

4. **FTP settings**
   FTP server: ftp.sundroid.hu
   FTP port: 21
   FTP password and username: individually generated

Should you have any questions, please do not hesitate to contact us.

Regards,

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