



Powel Avance Event Manager

Powel Avance Event Manager (PEM) is a high-performance event management module in the Avance suite, tailored specifically to normalize, store and distribute/export large amounts of alarm and event information that originates from a wide variety of sources such as different types of utility meters and other IoT devices.

On an aggregated level, event information from utility meters can be described as "raw data" with potential for duplicates and high volume due to events being generated both by the normal operations process of the meter but also for any deviations or changed conditions associated with each device. Examples here are:

- Momentary outages and power restoration related events (last gasp, power restored etc.)
- Communication and network interface issues
- Events generated due to planned outages on different levels of the grid
- Power quality related events (voltage sags/swells, harmonics etc.)
- Tampering (cover removed, magnetic detection, reverse power flow etc.)

Since event data from different meter models and manufacturers also can display large variations with respect to attributes, categorization, severity descriptions etc., the event data needs to be normalized into a common format for effective analysis to be performed.

Events can be categorised according to the process to which they are related and typically four main categories can be seen:

- Meter or device operational status information
- Power quality information
- Tampering associated meter or device information
- Meter or device hardware associated information

The information contained in events is useful in gaining insights that can help in improving customer experience, grid reliability, outage management and operational efficiency, examples here are:

- Proactive customer experience, knowing the status of the grid before the customer calls
- Outage management, detect outages already at device level
- Power quality, correlate info to proactively identify neutral faults, flicker etc.
- Revenue assurance, identify power theft and abnormal or sudden changes in usage patterns
- Identify patterns to identify meters in need of replacement before

Powel Avance Event Manager allows structured staging of event processing and management of high volumes of event data both on batch and close to real-time basis:

1

- Event filtering/prioritisation

2

- Push/export of events based on stage 1 filtering

3

- Consume event information in Avance Task Monitoring (ATM) or automatically trigger actions/tasks to mitigate problems in meters and/or the grid
- Utilisation of event information in operational system such as DMS, NIS, GIS, CRM etc.
- Statistical and/or predictive analysis

Highlights of Powel Avance Event Manager (PEM):

- High performance storage of events
- High performance scalable event/alarm subscription/export
- Event normalisation
- Monitor performance of communication infrastructure
- Data filtering
- Association rules
- Search events
- Triggers/rules for pushing of events to selected LoB applications
- Triggers/rules for processes in Avance Task Monitoring / workflow systems
- Integrate with 3rd party analytical tools for advanced analytics through tailored views
- Visualise events in map / Avance Task Monitoring
 - Combine with data from different sources such as communication topology, grid topology, meter readings etc.