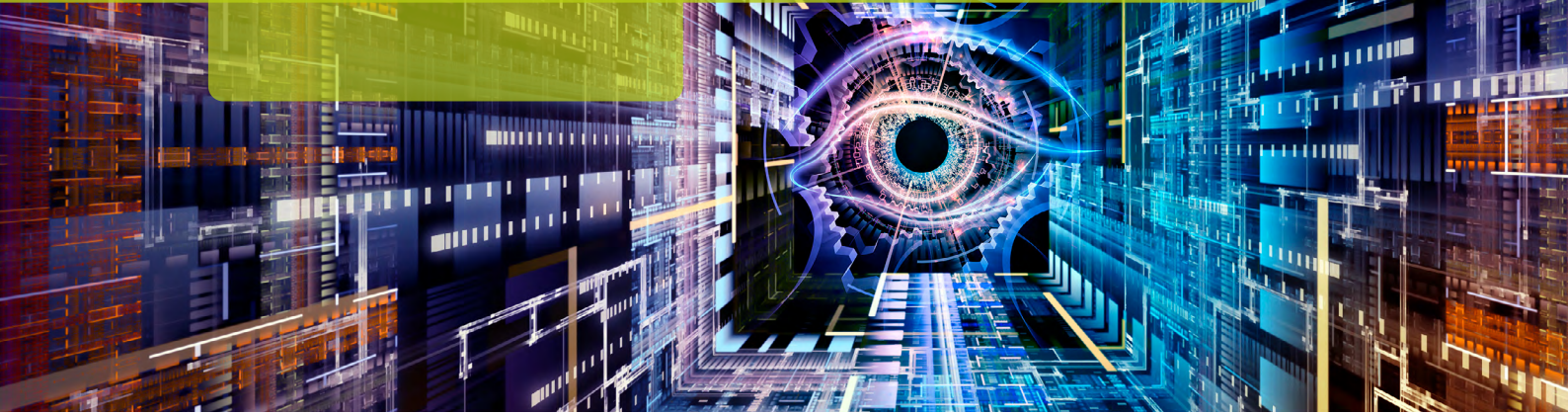


PSIdetect

Detecting Abnormal Behavior in the Power Grid



E.ON and PSI have jointly developed the software product PSIdetect. It monitors the power grid systematically using Qualicision and its Artificial Intelligence and Machine Learning functions. They have been specifically configured for this security applications. PSIdetect supports detecting abnormal behavior of individual infeeds and transformers as well as of the overall system.

Classic grid monitoring

- + Protection systems
- + SCADA
- + NA/ State Estimation
- » Response to limit violations
- » Developing critical situations are not detected while the system still operates inside the permitted limits.

VS.

Grid monitoring with AI

- + Abnormal behavior
- + Physical state assessment
- » Detection of unusual behavior patterns and operating states within the permitted limits
- » Possible causes:
Manipulation, cyber-attacks, system defective equipment, wrong configuration



PSIdetect is an important tool for complying with today's and tomorrow's increased Cyber Security requirements.

Scan me



PSI 

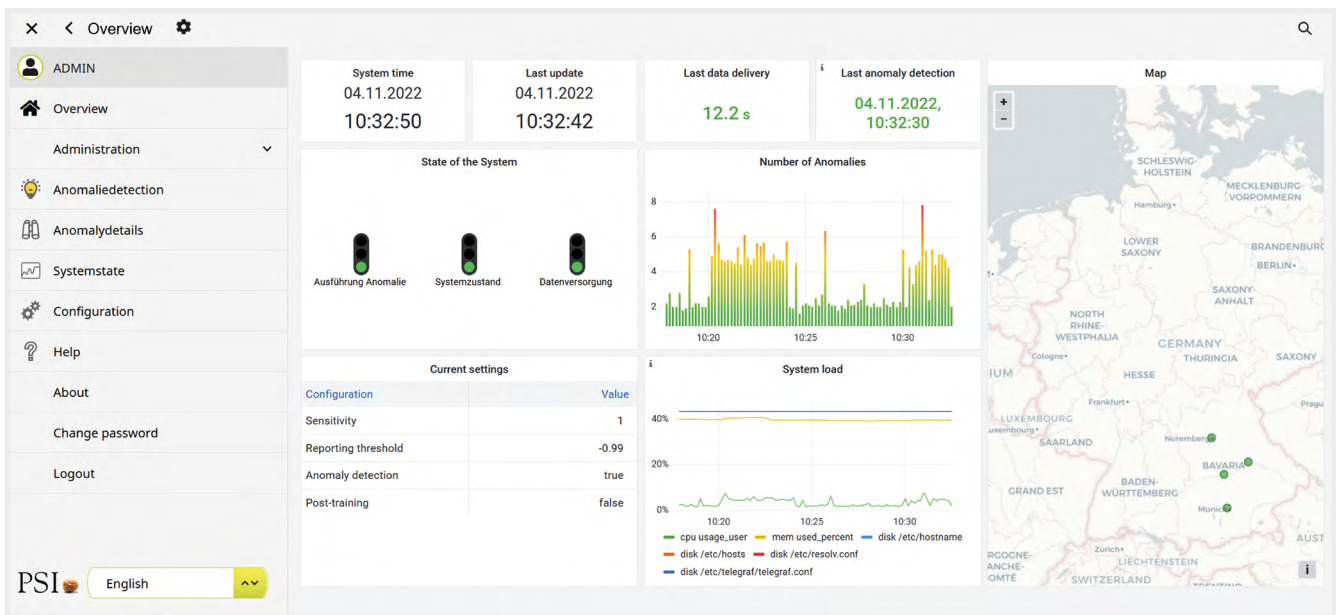
Secure your control system with Qualicision-based Artificial Intelligence

PSIdetect examines measurements of electrical equipment in the grid and reports abnormal operating states or behavior over time which cannot be detected by limit-based protection and monitoring functions as „Anomaly Scores“ to the control system. This supports detecting defects and other errors in the equipment as well as potential attacks on the IT infrastructure.

In particular, the measurements are correlated and dependencies are automatically detected and used. PSIdetect offers an additional layer of protection beyond the monitoring on the communication level. Thus, the grid operator complies with the requirement for additional protection as stipulated by the German IT Security Law 2.0.

PSIdetect adapts to a specific grid by applying Machine Learning techniques. Training data comprises historical or synthetically generated data. Online Operations require current process and weather data to continuously calculate the expected and compare it with the actual state. Relevant deviations („anomalies“) which may be caused by an attack are identified. So, protective interventions can be initiated at the earliest possible time. In addition, equipment defects can be detected which improves secure operation of the grid.

An easily expandable user interface provides back office administrators, service staff, and system administrators with the necessary information for countermeasures and parameterization.



Deep Qualicision offers you a hybrid model for anomaly detection

- + Qualitative labeling**
(Physical state assessment)
 - » Individual observations are assessed regarding their normality and used as input data.

- + Auto encoder**
(Pattern recognition)
 - » Observations are sorted into time windows and used as input data for training the entire complexity (correlated process).

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