DeMaDs

Data driven detection of malfunctioning devices in power distribution systems

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Projektbeschreibung

As electricity grid operators encounter new challenges in grid operation due to pro-found changes in the electric energy system, such as decentralization of generation, also new methods to cope with these challenges are sought after. Therefore, an in-vestigation of a concept for remote detection of malfunctioning grid supporting de-vices is proposed. The operation of future electricity grids depends on the behaviour of these devices and their support functions such as reactive power dispatch, used for example for voltage control. Using operational data of medium voltage trans-formers at first, as well as topological data and smart meter data at the low voltage level if of interest, the functionality developed is to enable better surveillance of grid connected devices. This is to be achieved combining machine learning algorithms for anomaly detection, classification and load disaggregation. These are to be applied to the transformer data as well as to the device data to identify and classify unwanted behaviour. The aim is that the framework should be a future tool for grid operators and for co-operation with them to help them implement a central novel surveillance of low volt-age grids regarding the connected devices. This framework will also be tested with some selected use cases in order to prove its usability. The data used will both be generated synthetic data as well as real world data from grid operators.

Projektpartner

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