[UC48] AMI-Smart Meter Flag Analysis for Theft Detection

The use of smart meter flags for theft detection is important because energy theft can result in significant financial losses for the utility company and can also create safety hazards. By detecting and preventing energy theft, utilities can improve the efficiency and reliability of the electricity grid, reduce energy waste, and ensure that all customers are paying for the electricity they use.

The Utility Problem

AMI (Advanced Metering Infrastructure) and smart meters are devices used for monitoring electricity usage in real time. These meters typically communicate data to the utility company using wireless communication systems, allowing for more accurate and efficient billing and grid management.

Smart meter flags are data points in the AMI/Smart Meter system that are used to indicate specific conditions or events that occur on the electricity grid which are “visible” to the particular AMI/smart meter. These flags can be used to identify and track issues such as power outages, voltage fluctuations, equipment failures and others.

Utilities use a variety of methods to detect energy theft, including the analysis of electricity usage patterns, the monitoring of voltage levels, and by utilizing of smart meter flags (these are, for example, reverse energy flags, reverse energy registers, tilt switches, blink counter – no power to the meter, etc.). When energy theft is detected, the utility company can use the energy theft flag to track the issue and take

appropriate action, such as inspecting the customer’s electricity supply or other legal action.

It is important to have an analytical system to analyze the smart meter flags because this will enable utilities to detect patterns and anomalies in the data that may indicate energy theft. Energy theft can result in significant financial losses for the utility company and can also create safety hazards. By detecting and preventing energy theft, utilities can improve the efficiency and reliability of the electricity grid, reduce energy waste, and ensure that all customers are paying for the electricity they use.