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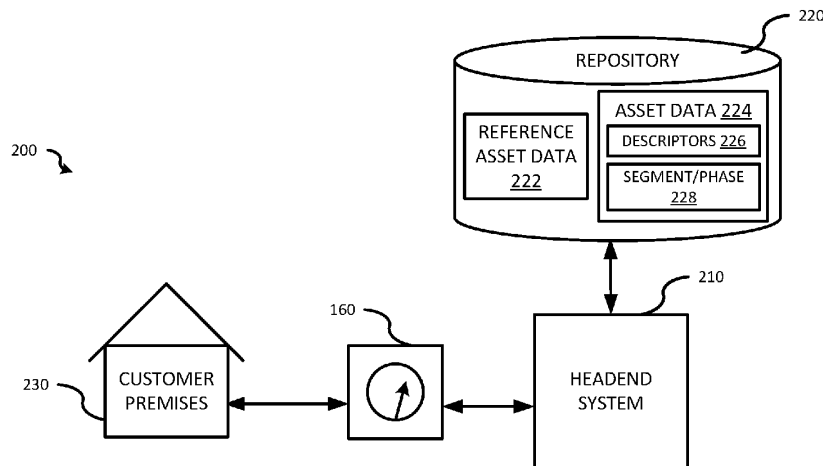


FIG. 2

(57) Abstract: A system for discovering the topology and phase of an electrical power distribution system is provided. For example, a group of meters connected to an electrical power distribution system can process sensor data obtained at the meters and generate descriptors based on the processed data and transmit the descriptors to a headend system. The headend system can, after receiving the descriptors from the various meters in the system, group these meters to generate a grouping by applying clustering algorithms to the descriptors of these meters. The headend system can further compare the current grouping with past groupings to determine a confidence level of the current grouping and assign a segment identifier or a phase identifier or both to one or more of the meters based on the confidence level.

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