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(54) Title: ELECTRICAL PHASE IDENTIFICATION USING A CLUSTERING ALGORITHM

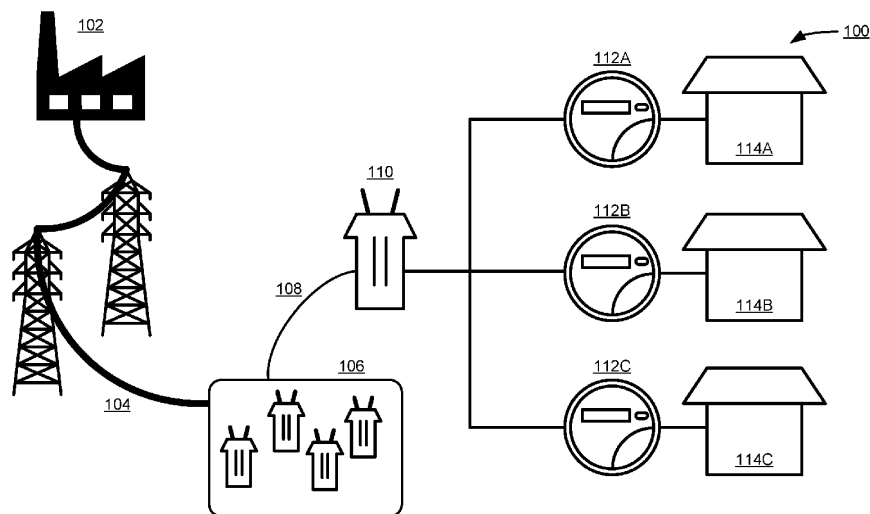


FIG. 1

(57) Abstract: A method, apparatus, and system for identifying electrical phases connected to electricity meters are disclosed. Voltage time series data of electricity meters are collected over a preselected collection time period, and three initial kernels representing three line-to-neutral phases are generated based on voltage correlations of meter-to-meter combinations. Three new kernels are then generated based on correlation values calculated for each of the three initial kernels with each electricity meter, and electricity meters are clustered into three groups based on average correlation values associated with each electricity meter. Six new kernels representing six phases are then formed based on the average correlation value associated with each electricity meter, and a predicted phase is assigned to each electricity meter based on correlation values of the electricity meter with each of the six new kernels based on the voltage time series data.

[Continued on next page]

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