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(54) Title of the Invention: **Methods and systems for tracking thermal profile of hot water storage tanks**
 Abstract Title: **Methods and systems for tracking thermal profile of hot water storage tanks**

(57) The present disclosure provides methods and systems for tracking temperature profile of water in a hot water storage tank. The method performed by a control unit includes monitoring flow of water at one or more inlets and one or more outlets included in the tank to determine current locations of a plurality of water layers within the tank. The plurality of water layers changes corresponding positions within the tank based on water entering within and exiting from the tank. The method includes receiving a series of temperature values measured at a series of time instances from at least one temperature sensor mounted to the tank. The method includes electronically generating a temperature profile of the tank based at least on the current locations of the plurality of water layers and the series of temperature values.

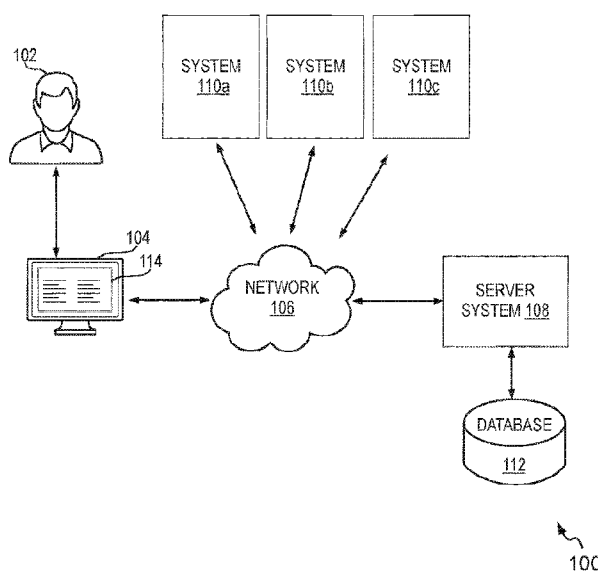


FIG. 1