WHAT IS CLAIMED IS:

1. A method for capturing and mapping equipment performance data of a plurality of devices for installation in a system, the system having a variable load, the method being performed by at least one controller and comprising:

for each device:

determining, by performing testing on the device using a testing facility where instant operating parameters can be controlled to be at a specific operating point, model values of a performance parameter of the device over an operating range of at least two operating parameters which affect the performance parameter, wherein each model value is representative of an operating point of the at least two operating parameters, the testing performed post manufacturing and prior to installation of the device,

storing to memory the determined model values of the performance parameter along with a time of said determining and a unique device identifier for the device,

detecting, when the device is installed in the system, numerical properties of the performance parameter of the device, with respect to the at least two operating parameters, and storing to the memory the detected numerical properties as determined model values along with a time of said detecting, and

comparing, when the device is installed in the system, the detected numerical properties with the stored determined model values of the performance parameter, from different points in time; and

in response to said comparing for any one of the devices satisfying criteria, outputting an alert or sending the alert to a communication device,

wherein the criteria includes exceeding a threshold difference between one or more detected numerical properties of the performance parameter of the installed device and one or more of the stored determined model values of the performance parameter or the criteria is a trend over two or more of the different points in time,

wherein at least one of the devices includes a variable speed motor for sourcing the variable load and at least one of the operating parameters for the at least one of the devices

includes a controlled speed of the variable speed motor.

2. The method as claimed in claim 1, wherein the testing is further performed pre shipping of at least one of the devices.

3. The method as claimed in claim 1, wherein operation of one device in the system affects operation of at least one other device in the system with respect to the at least two operating parameters.

4. The method as claimed in claim 1, wherein the system comprises a chilled water plant, a heating circulating system, or a Heating Ventilation and Air Conditioning (HVAC) system.

5. The method as claimed in claim 1, wherein each model values comprise a value of the performance parameter in a standard unit of measurement.

6. The method as claimed in claim 1, wherein the model values comprise coefficients.

7. The method as claimed in claim 6, wherein the coefficients mathematically modify a rated performance parameter value of the respective device.

8. The method as claimed in claim 7, wherein the rated performance parameter value is a design day performance parameter value.

9. The method as claimed in claim 7, wherein the coefficients comprise at least one or both of a multiplier or an exponential of the rated performance parameter value of the respective device.

10. The method as claimed in claim 1, wherein said determining further comprises measuring values of the performance parameter in a standard unit of measurement by operating the respective device over at least some of the operating range with respect to the at least two operating parameters.

11. The method as claimed in claim 1, wherein said determining further comprises interpolating or extrapolating at least some of the model values of the performance parameter based on the measured values.

12. The method as claimed in claim 1, wherein, for said comparing, one or more respective sensors are configured to, when the respective device is installed in the system, provide data for the at least two operating parameters and/or data for the detected numerical properties of the performance parameter of the respective device.

13. The method as claimed in claim 1, wherein at least one of the devices comprises a mechanical device, a rotary device, and/or a device that requires electricity to operate.

14. The method as claimed in claim 1, wherein at least one of the devices comprises a pump, wherein at least one of the operating parameters comprises at least one or all of: water flow, impeller speed, pump head pressure, pump shaft power draw, number of active units, and/or noise sound level.

15. The method as claimed in claim 1, wherein at least one of the devices comprises a chiller, wherein at least one of the operating parameters comprises at least one or all of: water flow, refrigerant flow, evaporator entering temperature, evaporator leaving temperature, condenser entering temperature, condenser leaving temperature, refrigerant pressure difference, and/or number of active units.

16. The method as claimed in claim 1, wherein at least one of the devices comprises a cooling tower, wherein at least one of the operating parameters comprises at least one or all of: contact air-water area per cooling tower active volume, relative cooling tower volume, entering water temperature, leaving water temperature, wet bulb temperature, fluid loss, water flow, and/or air flow.

17. The method as claimed in claim 1, wherein the model values are discrete values.

18. The method as claimed in claim 1, wherein each model value is stored in the memory in association with a respective value of the at least two operating parameters.

19. The method as claimed in claim 1, wherein each model value is stored in the memory as a multi-parameter computer variable, a database, a vector or a tuple.

20. The method as claimed in claim 1, wherein said detecting the numerical properties of the performance parameter of the installed device is performed by measuring values of the performance parameter in a standard unit of measurement.

21. The method as claimed in claim 1, wherein at least one of the operating parameters include a temperature parameter.

22. The method as claimed in claim 1, wherein at least one of the operating parameters include a load parameter of the variable load.

23. The method as claimed in claim 1, wherein at least one of the operating parameters include a flow parameter.

24. The method as claimed in claim 1, wherein at least one of the operating parameters comprises an outdoor environmental condition.

25. A parameterization system for capturing and mapping equipment performance data, comprising:

a plurality of devices for installation in a system, the system having a variable load;

memory; and

at least one controller configured to:

for each device:

determine, in relation to testing performed on the device using a testing facility where instant operating parameters can be controlled to be at a specific operating point, model values of a performance parameter of the device which affect the performance

parameter, wherein each model value is representative of an operating point of the at least two operating parameters, the testing performed post manufacturing and prior to installation of the device,

store to the memory the determined model values of the performance parameter along with a time of said determining and a unique device identifier for the device,

detect, when the device is installed in the system, numerical properties of the performance parameter of the device, with respect to the at least two operating parameters, and storing to the memory the detected numerical properties as determined model values along with a time of said detecting, and

compare, when the device is installed in the system, the detected numerical properties with the stored determined model values of the performance parameter, from different points in time; and

the at least one controller is further configured to, in response to said comparing for any one of the devices satisfying criteria, outputting an alert or sending the alert to a communication device,

wherein the criteria includes exceeding a threshold difference between one or more detected numerical properties of the performance parameter of the installed device and one or more of the stored determined model values of the performance parameter or the criteria is a trend over two or more of the different points in time,

wherein at least one of the devices includes a variable speed motor for sourcing the variable load and at least one of the operating parameters for the at least one of the devices includes a controlled speed of the variable speed motor.

26. A parameterization system for capturing and mapping equipment performance data, comprising:

a plurality of devices for installation in a system;

memory; and

at least one controller configured to perform the method as claimed in any one of claims

1 to 24.