

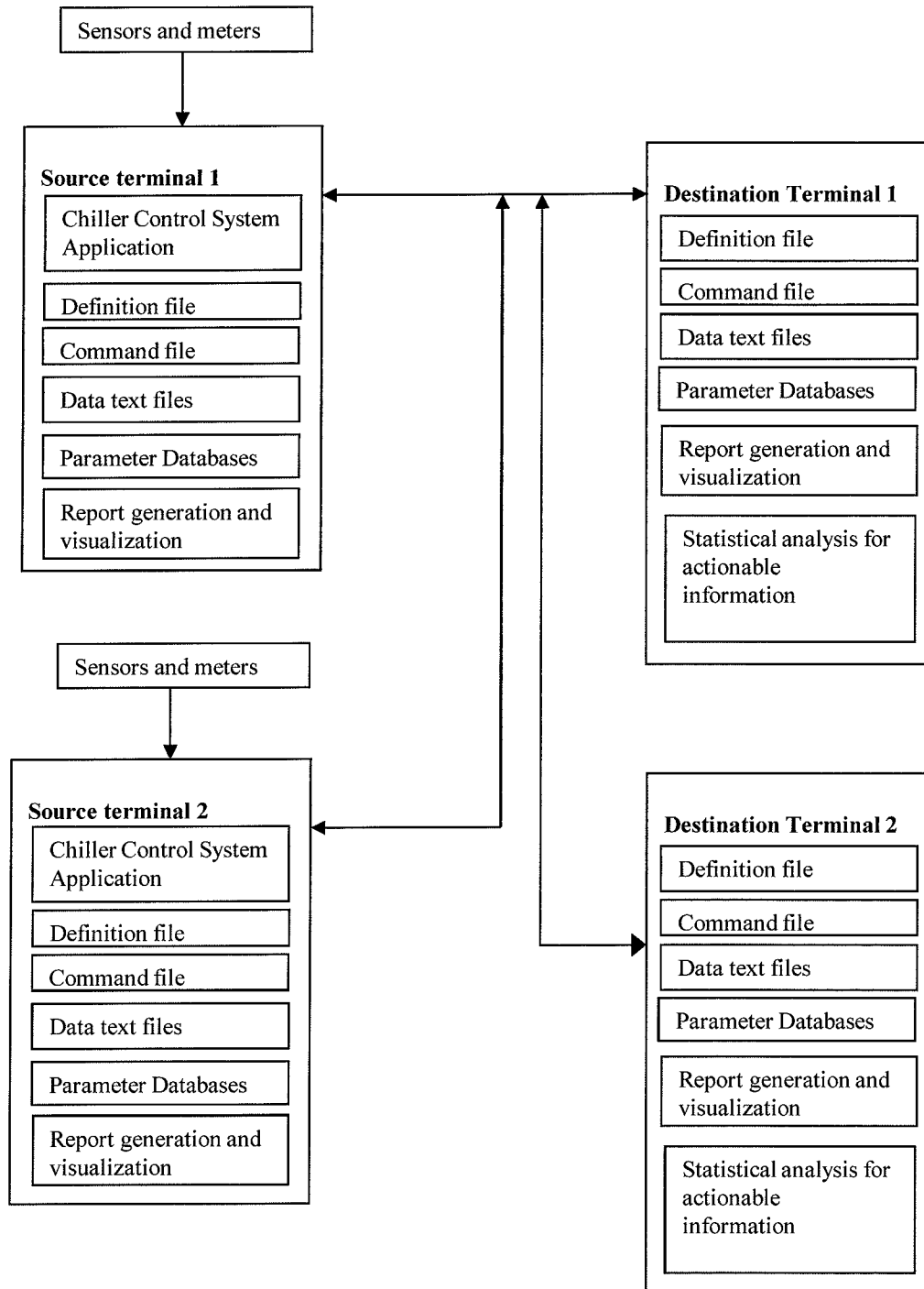


FIG. 1

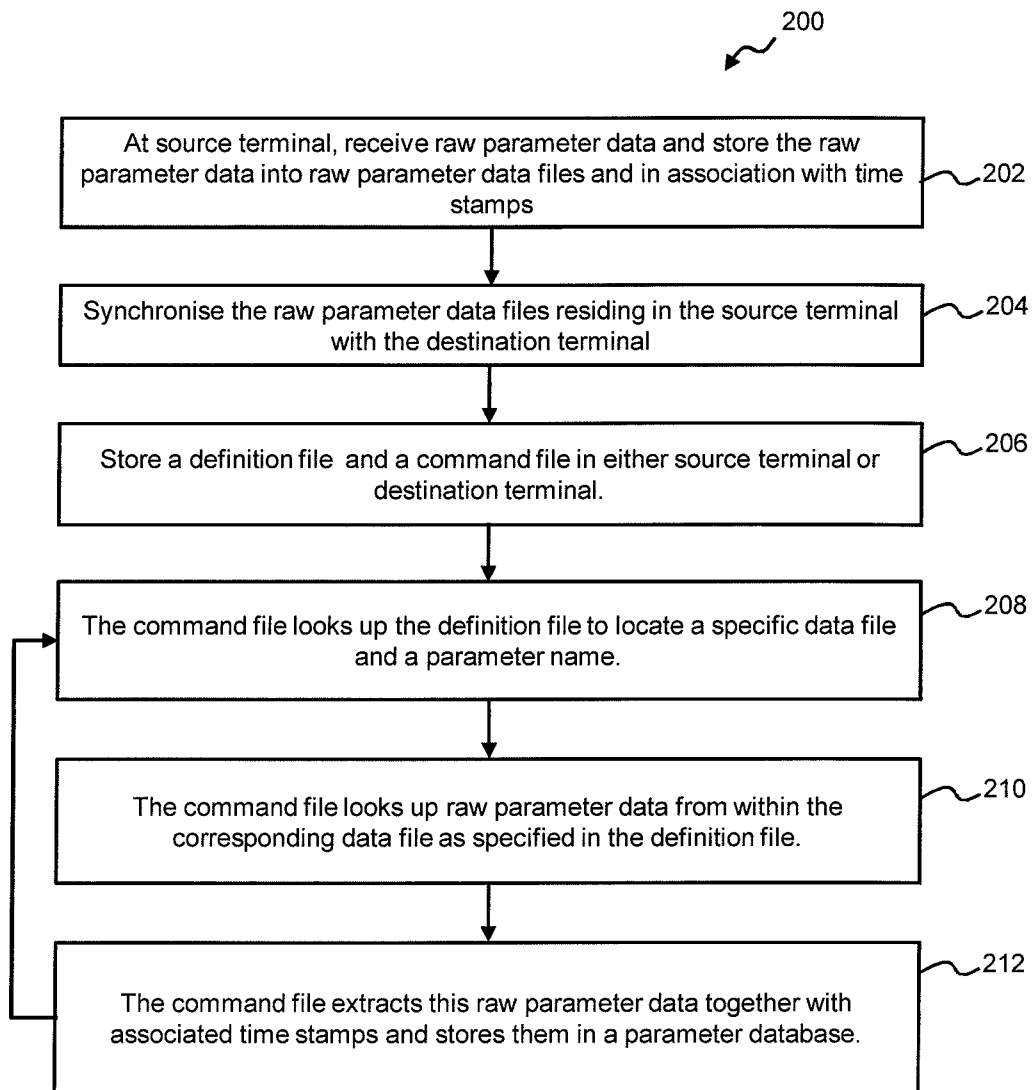


FIG. 2A

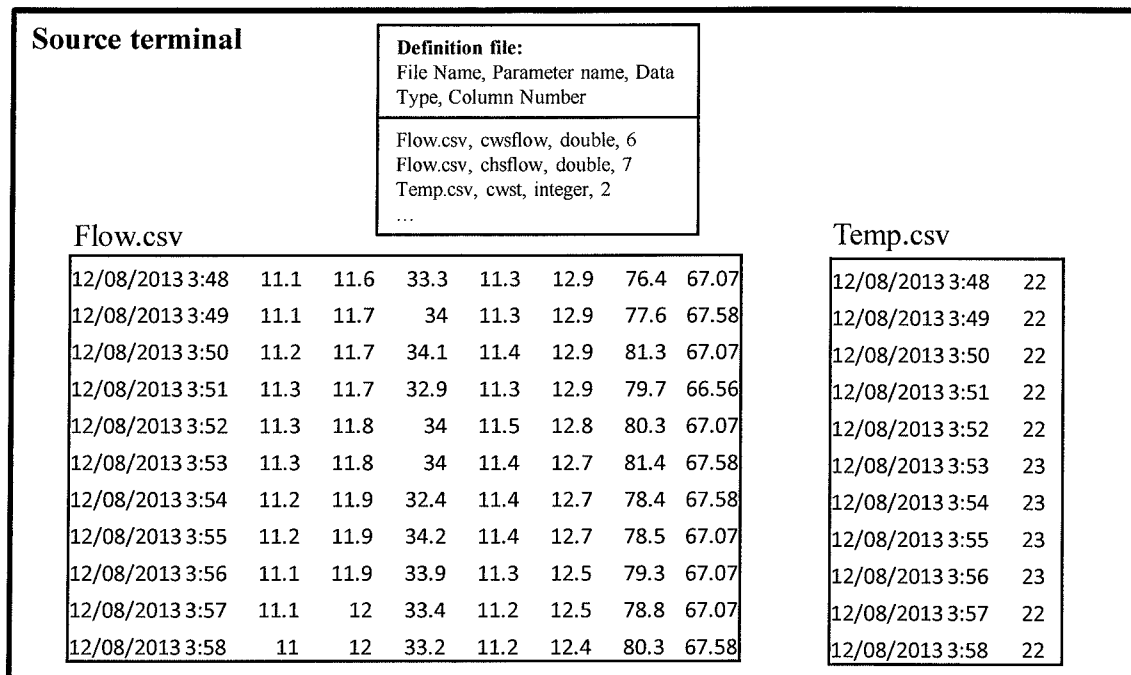


FIG. 2B

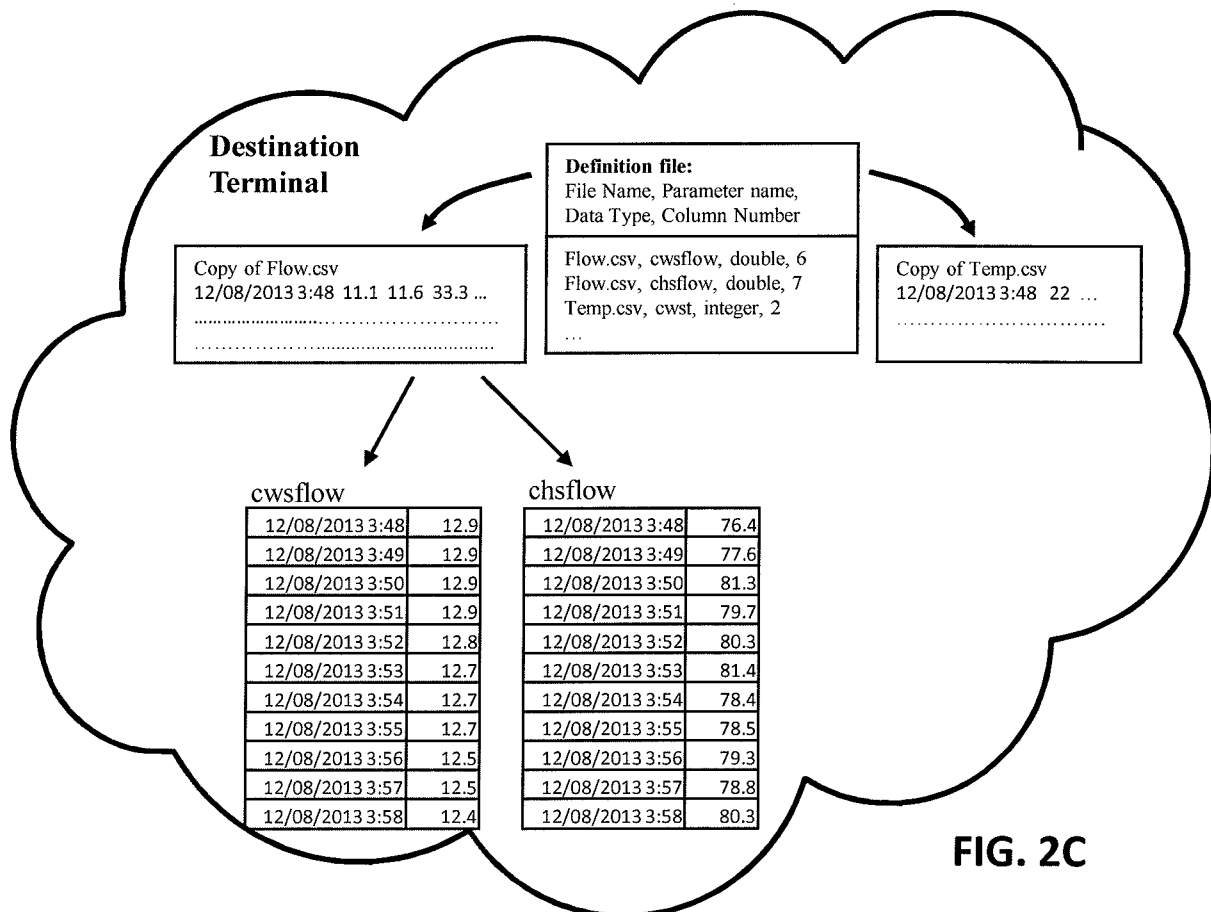
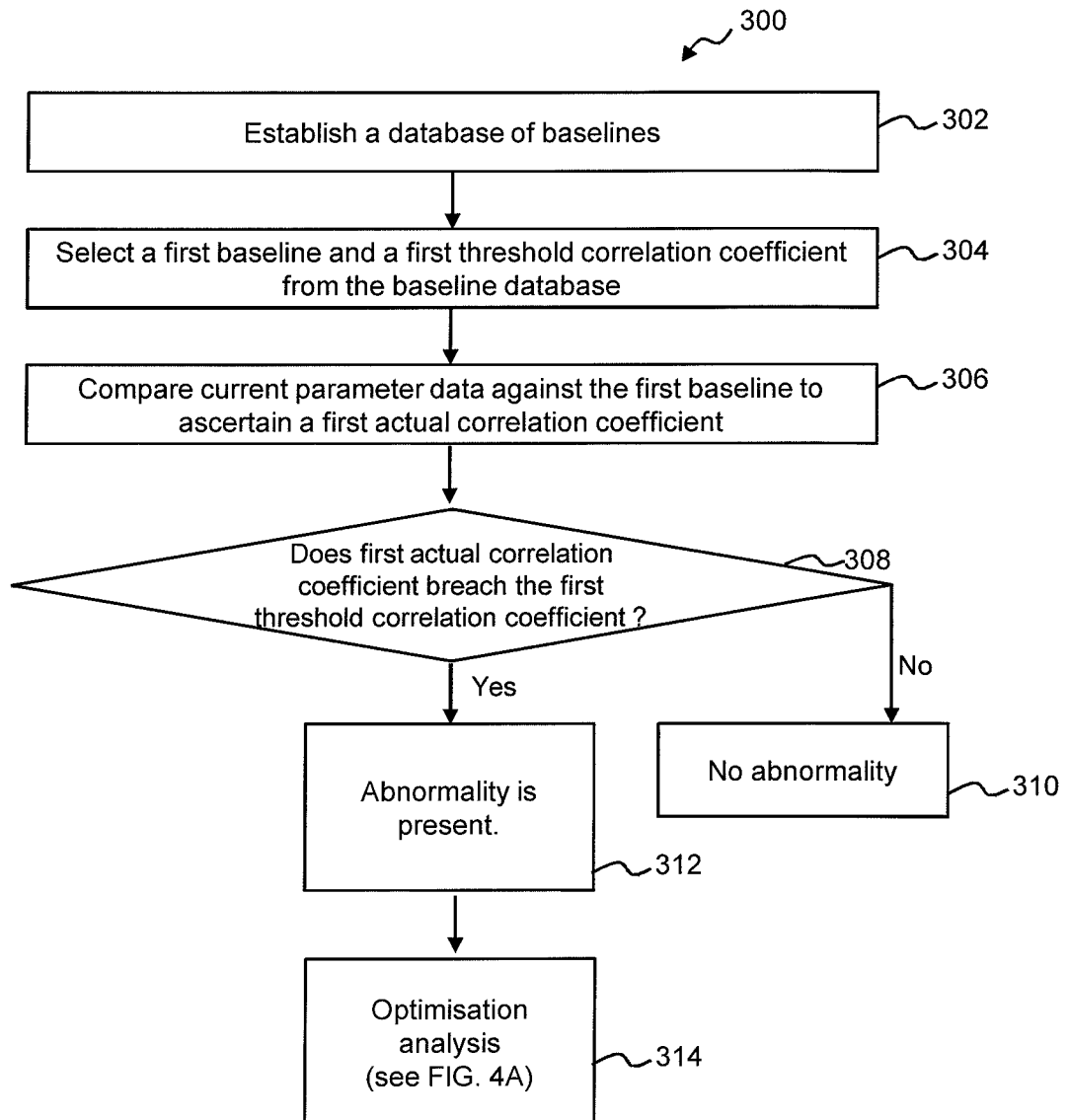


FIG. 2C

**FIG. 3**

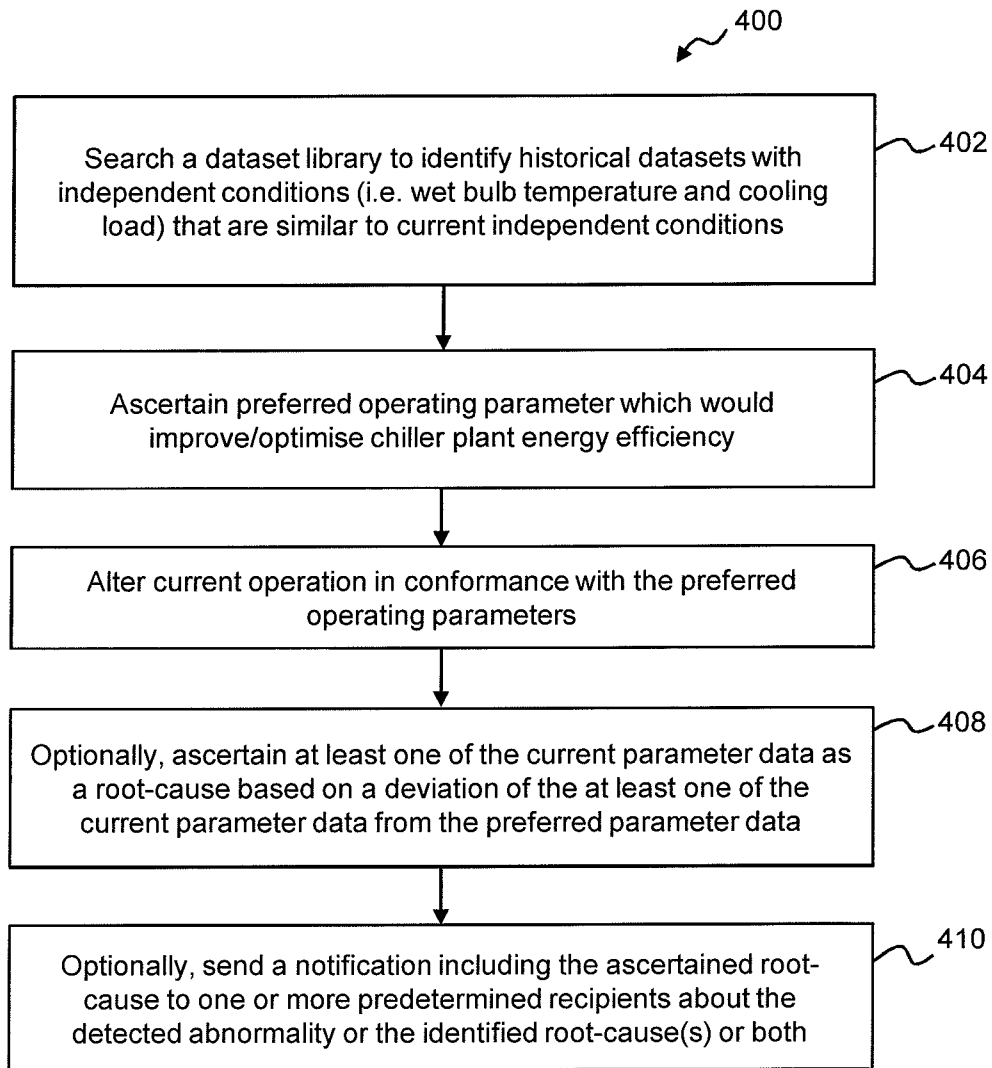


FIG. 4A

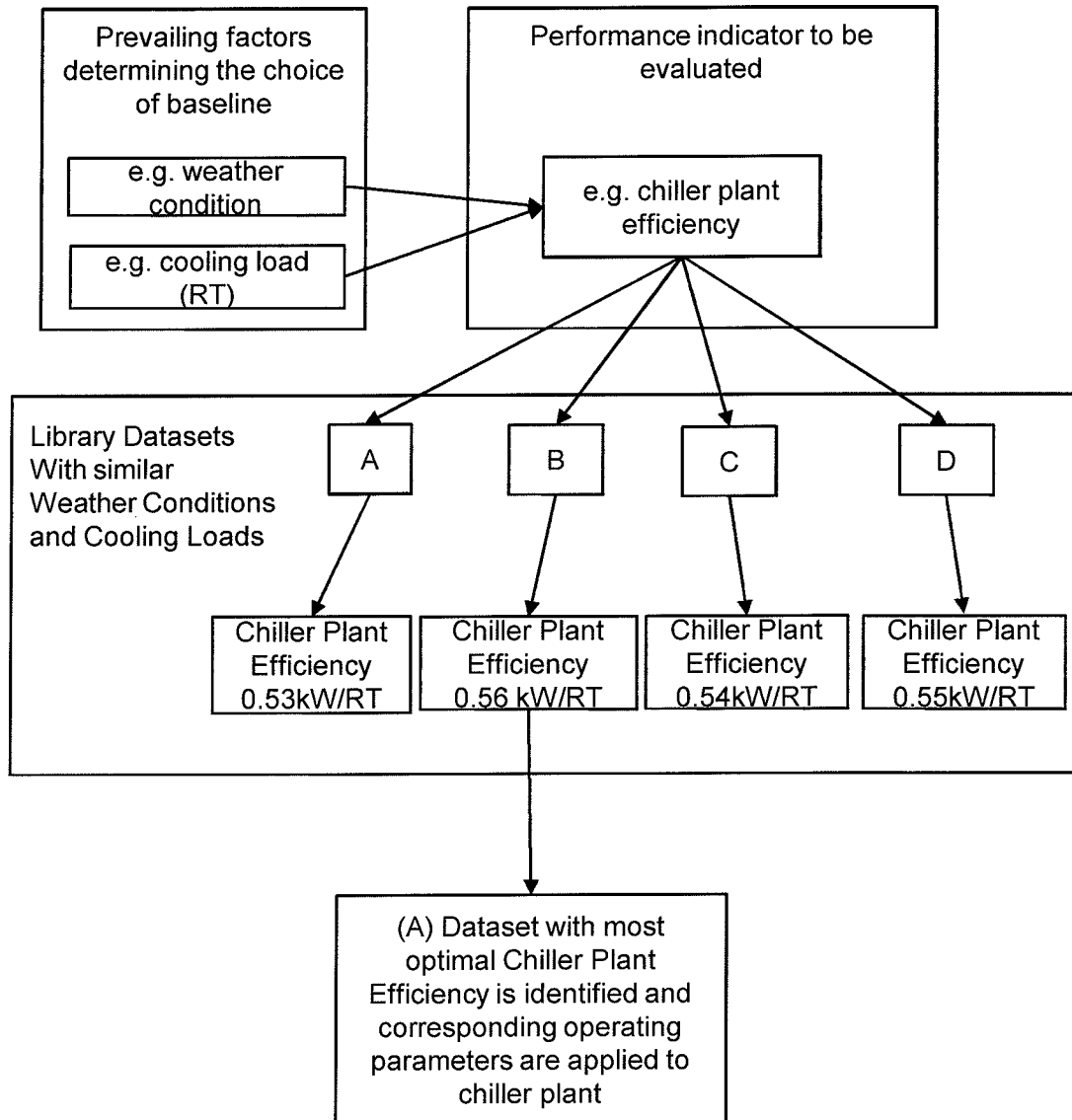
**FIG. 4B**

Table 1 LIBRARY OF DATAPOINTS										
Wet bulb (°C)	26.2	26.6	26.4	27.1	29.2	25.8	26.0	26.1	27.5	27.1
Load (RT)	400	410	355	470	455	470	415	390	410	440
Condenser Pump Power (kW)	0.025	0.026	0.026	0.032	0.035	0.025	0.025	0.025	0.031	0.030
Cooling Tower Power (kW)	0.031	0.032	0.033	0.039	0.035	0.032	0.031	0.032	0.038	0.036
Condenser System Efficiency (kW/RT)	0.53	0.56	0.54	0.58	0.61	0.53	0.54	0.55	0.56	0.58

Identify datasets with similar Wet Bulb (+/- 0.5°C) and Load (+/- 10%) to current conditions, e.g. current conditions being Wet Bulb: 26.5°C, Load: 400RT

Table 2										
Wet bulb (°C)	26.2	26.6	26.4	27.1	29.2	25.8	26.0	26.1	27.5	27.1
Load (RT)	400	410	355	470	455	470	415	390	410	440
Condenser Pump Power (kW)	0.025	0.026	0.026	0.032	0.035	0.025	0.025	0.025	0.031	0.030
Cooling Tower Power (kW)	0.031	0.032	0.033	0.039	0.035	0.032	0.031	0.032	0.038	0.036
Condenser System Efficiency (kW/RT)	0.53	0.56	0.54	0.58	0.61	0.53	0.54	0.55	0.56	0.58

(A) Select dataset with the lowest Condenser System Efficiency

(B) Apply a suitable numerical method to ascertain most optimal combination of Condenser Pump Power and Cooling Tower Power to yield the lowest Condenser System Efficiency

Table 3				
Wet bulb (°C)	26.2	26.6	26.0	26.1
Load (RT)	400	410	415	390
Condenser Pump Power (kW)	0.025	0.026	0.025	0.025
Cooling Tower Power (kW)	0.031	0.032	0.031	0.032
Condenser System Efficiency (kW/RT)	0.53	0.56	0.54	0.55

Table 4	
Wet bulb (°C)	26.6
Load (RT)	410
Condenser Pump Power (kW)	0.032
Cooling Tower Power (kW)	0.028
Condenser System Efficiency (kW/RT)	0.52

Send instructions to apply the optimised Condenser Pump Power and Cooling Tower Power to the variable speed drives / components

FIG. 5