

Claim

1. A method for generating a performance value of a process module, wherein the process module comprises a plurality of sub-process modules, wherein the process module is categorised into a category of a plurality of categories, the method comprising:

retrieving a performance value for each of the plurality of sub-process modules,

retrieving the category of the process module,

generating the performance value of the process module based on the category of the process module, wherein the performance value of the process module is generated from the performance values of the plurality of sub-process modules.

2. The method according to claim 1, wherein generating the performance value of the process module comprises generating an average performance value of the performance values of the plurality of sub-process modules and assigning the average performance value to the performance value of the process module.

3. The method according to claim 1, wherein generating the performance value of the process module comprises determining a critical performance value of the performance values of the plurality of sub-process modules and assigning the critical performance value to the performance value of the process module.

4. The method according to claim 3, wherein the critical performance value of the sub-process modules is generated based on the longest cycle time of one of the plurality of sub-process modules, the highest performance indicator percentage among the plurality of sub-process modules, or one of the plurality of sub-process modules selected by a user.

5. The method according to any one of claims 1 to 4, wherein the plurality of categories comprises a combinatory process module wherein the output of the plurality of sub-process modules are combined, a sequential process module wherein the plurality of sub-process modules are arranged in sequence and an alternate process module wherein the plurality of sub-process modules are run parallel to each other.

6. The method according to claim 5, wherein, when the alternative process module is determined, the average performance value of the performance values of the plurality of sub-process modules is assigned to the performance value of the process module.
7. The method according to claim 5, wherein, when, the combinatory process module or the sequential process module is determined, the critical performance value of the performance values of the plurality of sub-process modules is assigned to the performance value of the process module.
8. The method according to any one of claims 1 to 7, further comprising receiving input data from the plurality of sub-process modules, wherein the performance value for each of the plurality of sub-process modules is generated based on the input data.
9. The method according to any one of claims 1 to 8, wherein the performance value comprises at least one of Overall Equipment Effectiveness (OEE) and Key Performance Index (KPI).
10. A system for generating a performance value of a process module comprising a plurality of sub-process modules, wherein the process module is categorised into a category of a plurality of categories, the system comprising:
 - a processor,
 - a memory in communication with the processor for storing instruction executable by the processor,
 - wherein the processor is configured to:
 - retrieve a performance value for each of the plurality of sub-process modules,
 - retrieve the category of the process module, and
 - generate the performance value of the process module based on the category of the process module, wherein the performance value of the process module is generated from the performance values of the plurality of sub-process modules.

11. The system according to claim 10, wherein, to generate the performance value of the process module, the processor is configured to generate an average performance value of the performance values of the plurality of sub-process modules and assign the average performance value to the performance value of the process module.
12. The system according to claim 10, wherein, to generate the performance value of the process module, the processor is configured to generate a critical performance value of the performance values of the plurality of sub-process modules and assign the critical performance value to the performance value of the process module.
13. The system according to claim 12, wherein the critical performance value of the sub-process modules is generated based on the longest cycle time of one of the plurality of sub-process modules, the highest performance indicator percentage among the plurality of sub-process modules, or one of the plurality of sub-process modules selected by a user.
14. The system according to any one of claims 10 to 13, wherein the plurality of categories comprises a combinatory process module wherein the output of the plurality of sub-process modules are combined, a sequential process module wherein the plurality of sub-process modules are arranged in sequence and an alternate process module wherein the plurality of sub-process modules are run parallel to each other.
15. The system according to claim 14, wherein, when the alternative process module is determined, the average performance value of the performance values of the plurality of sub-process modules is assigned to the performance value of the process module.
16. The system according to claim 14, wherein when the combinatory process module or the sequential process module is determined, the critical performance value of the performance values of the plurality of sub-process modules is assigned to the performance value of the process module.
17. The system according to any one of claims 10 to 16, wherein the processor is further configured to receive input data from the plurality of sub-process modules, wherein the

performance value for each of the plurality of sub-process modules is determined based on the input data.

18. The system according to any one of claims 10 to 17, wherein the performance value comprises at least one of Overall Equipment Effectiveness (OEE) and Key Performance Index (KPI).

19. A method for identifying at least one bottleneck in a process module, the method comprising:

- retrieving information of a process module or sub-process module,
- assigning the information to one of a plurality of process units, wherein each of the plurality of process units represents a process module or a sub-process module,
- categorising each of the plurality of process units into one of a plurality of categories, wherein the process module or sub-process module represented by the process unit is assigned the category of the process unit,
- generating a performance value of each of the plurality of process units using the method as claimed in any one of claims 1 to 9, and
- identifying one or more of the plurality of process units that cause the bottleneck in the process module based on the performance value of each of the plurality of process units to detect the bottleneck in the process module.

20. A system for identifying at least one bottleneck in a process module, the system comprising:

- a processor,
- a memory in communication with the processor for storing instruction executable by the processor,
- wherein the processor is configured to:
 - retrieve information of a process module or sub-process module,
 - assign the information to one of a plurality of process units, wherein each of the plurality of process units represents a process module or a sub-process module,

categorise each of the plurality of process units into one of a plurality of categories, wherein the process module or sub-process module represented by the process unit is assigned the category of the process unit,

generate a performance value of each of the plurality of process units using the method as claimed in any one of claims 1 to 9, and

identify one or more of the plurality of process units that cause the bottleneck in the process module based on the performance value of each of the plurality of process units to detect the bottleneck in the process module.