CLAIMS

What is claimed is:

1. A process execution system comprising:

a process network generation unit configured to generate a process network from a process network model, wherein the process network model includes a plurality of process master nodes having process generation information used to generate process definition information defining content of processes, and represents relationships between a plurality of process nodes generated by the process master nodes, and wherein the process network includes the plurality of process nodes having the process definition information;

a process network state management unit configured to, based on a state of the process node included in the process network and predetermined process state transition rules, make a specific process node executable;

a process network execution unit configured to execute a process defined by the process definition information associated with the executable process node included in the process network; and

a transcription unit configured to execute a transcription process for transcribing the process generation information associated with one process master node into one process node corresponding to the one process master node as the process definition information,

wherein the process network generation unit is configured to include a process network model input unit configured to accept an input of the process network model, the process network generation unit being configured to generate the process network from the process network model accepted as input by the process network model input unit,

wherein the process network model input unit is configured to accept an input of a hierarchical process network model representing hierarchical relationships between the process nodes generated by the process master nodes,

wherein the process network generation unit is configured to generate a hierarchical process network corresponding to the hierarchical process network model accepted as input by the process network model input unit,

wherein the process definition information includes information related to actions necessary to execute the process defined by the process definition information,

wherein the process network execution unit is configured to execute the process defined by the process definition information of the executable process node by sending an execution request for an action, based on the information related to actions included in the process definition information, to an action execution system that executes predetermined actions upon request,

wherein the process network state management unit is configured to include a process state change request acceptance unit configured to accept a process state change request for changing a state of a specific process node and to change the state of the specific process node included in the process network based on the process state change requests accepted by the process state change request acceptance unit,

wherein the process generation information includes at least one piece of transcription process definition information defining the transcription process,

wherein the transcription process definition information includes at least one piece of transcription factor model definition information defining a transcription factor model, the transcription factor model modeling an influence of an environment with which the process execution system is communicable on the transcription process,

wherein the transcription unit is configured to include a transcription request acceptance unit configured to accept an execution request for the transcription process, a transcription factor model evaluation unit configured to evaluate the transcription factor model defined by the transcription factor model definition information, and a transcription process execution unit configured to execute the transcription process defined by the transcription process definition information, and

wherein the transcription process execution unit is configured to control the transcription process based on evaluation results of one or more transcription factor models evaluated by the transcription factor model evaluation unit.

2. The process execution system according to claim 1, wherein:

the process network execution unit is configured to, when executing the process defined by the process definition information, send the execution request for the transcription process to the transcription request acceptance unit, thereby executing the process based on the process definition information updated by the transcription unit transcribing the process generation information used to generate the process definition information.

3. The process execution system according to claim 2, wherein:

the transcription factor model evaluation unit is configured to, when evaluating one transcription factor model, use evaluation results of the other transcription factor models as input data for the one transcription factor model.

4. The process execution system according to claim 3, wherein:

the process definition information includes an active flag indicating whether the process having the process definition information is active or inactive,

the process generation information includes an active flag master used to generate the active flag,

the active flag master includes the transcription process definition information configured to determine the active flag based on evaluation results of the transcription factor models, and

the process network state management unit is configured to ignore process nodes as if they did not exist when the active flag included in the process definition information associated with the process nodes indicates that the process is inactive.

5. The process execution system according to claim 4, wherein:

the process network generation unit is configured to include a process network model output unit configured to output the process network model, and

the process network model output unit is configured to output serialized data of the process network model.

6. The process execution system according to claim 5, wherein:

the process network model input unit is configured to accept an input of serialized data of the process network model, and

the process network generation unit is configured to generate the process network using the process network model obtained by deserializing the serialized data of the process network model accepted as input by the process network model input unit.

7. The process execution system according to claim 6, wherein:

the process network model output unit is configured to serialize the process network model based on a rule that the process network model and the serialized data of the process network model have a one-to-one correspondence.

8. The process execution system according to claim 7, wherein:

a data format used by the process network model output unit to output serialized data of the process network model is an array of key-value pairs.

9. The process execution system according to claim 8, wherein:

the data format used by the process network model output unit to output serialized data of the process network model is JSON.

10. The process execution system according to claim 1, further comprising:

a process network model display unit configured to display the process network model.

11. The process execution system according to claim 1, further comprising:

a process network display unit configured to display the process network.

12. A process execution program for causing a computer to execute:

accepting an input of a process network model that includes a plurality of process master nodes having process generation information used to generate process definition information defining content of processes, and represents relationships between a plurality of process nodes generated by the process master nodes,

generating a process network that includes the plurality of process nodes having the process definition information from the process network model accepted as input in the accepting the input of the process network model,

performing a state transition process for the process nodes based on a state of the process nodes included in the process network and predetermined process state transition rules,

executing an executable process node included in the process network,

wherein in the accepting the input of the process network model, the hierarchical process network model representing hierarchical relationships between process nodes generated by the process master nodes is accepted as input,

wherein in the generating the process network, a hierarchical process network corresponding to the hierarchical process network model accepted as input in the accepting the input of the process network model is generated,

wherein the performing the state transition process for the process nodes includes an accepting a process state change request for changing a state of a specific process node, whereby the state of the specific process node is changed based on the process state change request accepted in the accepting the process state change request,

wherein the process generation information includes at least one piece of transcription process definition information defining a transcription process, the transcription process transcribing the process generation information associated with a process master node into a process node corresponding to the process master node as the process definition information,

wherein the transcription process definition information includes at least one piece of transcription factor model definition information defining a transcription factor model, the transcription factor model modeling an influence of an environment with which the process execution system is communicable on the transcription process,

the program causes the computer to further execute:

accepting an execution request for the transcription process,

evaluating the transcription factor models defined by the transcription factor model definition information,

executing the transcription process defined by the transcription process definition information,

wherein the executing the transcription process controls the transcription process based on evaluation results of one or more of the transcription factor models evaluated in the evaluating the transcription factor models.

13. The process execution program according to claim 12, wherein:

in the executing the executable process node, the process is executed based on the process definition information updated by transcribing the process generation information used to generate the process definition information by sending an execution request for the transcription process.

14. The process execution program according to claim 13, wherein:

in the evaluating the transcription factor models, when evaluating one of the transcription factor models, evaluation results of other transcription factor models are used as input data for the one transcription factor model.