WHAT IS CLAIMED IS:

1. A method of operating a neural processing system comprising a plurality of processing devices, wherein the plurality of processing devices comprises a first processing device and a second processing device, the method comprising:

selecting the first processing device, which will perform processing based on a neural network, from among the plurality of processing devices based on state information of the plurality of processing devices;

when at least one operator of the neural network is not supported by the first processing device, transforming the neural network into a transformed neural network based on first support operators that are supported by the first processing device; and

performing, by the first processing device, the processing based on the transformed neural network.

2. The method of claim 1, further comprising:

when all operators of the neural network are supported by the first processing device, performing the processing by the first processing device based on the neural network.

3. The method of claim 1 or claim 2, wherein the first support operators are not identical to second support operators that are supported by the second processing device of the plurality of processing devices.

4. The method of any one of claims 1 to 3, wherein transforming the neural network comprises:

transforming the at least one operator of the neural network to at least one of the first

support operators.

5. The method of any one of claims 1 to 4, wherein the state information comprises temperature information of each of the plurality of processing devices, and the first processing device is selected based on the temperature information.

6. The method of any one of claims 1 to 4, wherein the state information comprises voltage information of each of the plurality of processing devices, and the first processing device is selected based on the voltage information.

7. The method of any one of claims 1 to 4, wherein the state information comprises current information of each of the plurality of processing devices, and the first processing device is selected based on the current information.

8. The method of any one of claims 1 to 4, wherein the state information comprises clock frequency information of each of the plurality of processing devices, and the first processing device is selected based on the clock frequency information.

9. The method of any one of claims 1 to 8, wherein the plurality of processing devices comprises a central processing unit (CPU), a graphic processing unit (GPU), a neural processing unit (NPU), and a digital signal processor (DSP).

10. A method of operating a neural processing system comprising a first processing device and a second processing device, the method comprising:

performing, by the first processing device, first neural processing based on a neural

network;

after performing the first neural processing, when a temperature of the first processing device exceeds a threshold value, and when at least one of operators of the neural network is not supported by the second processing device, transforming the neural network into a transformed neural network based on support operators that are supported by the second processing device; and

performing, by the second processing device, second neural processing based on the transformed neural network.

11. The method of claim 10, further comprising:

when the temperature of the first processing device is not greater than the threshold value, performing the second neural processing by the first processing device based on the neural network.

12. The method of claim 10 or claim 11, wherein the operators of the neural network are supported by the first processing device.

13. The method of any one of claims 10 to 12, wherein transforming the neural network comprises:

transforming a first operator, which is not supported by the second processing device, from among the operators of the neural network to at least one of the support operators of the second processing device.

14. The method of any one of claims 10 to 13, wherein the temperature of the first processing device is increased by the first neural processing, and a temperature of the second

processing device is increased by the second neural processing.

15. A neural processing system, comprising:

a first processing device configured to support first support operators;

a second processing device configured to support second support operators;

a state information monitor configured to monitor state information of the first and second processing devices; and

a neural processing controller configured to select a processing device, which will perform processing input data based on a neural network, from among the first and second processing devices based on the state information,

wherein, when at least one of operators of the neural network is not supported by the selected processing device, the neural processing controller is further configured to transform the neural network into a transformed neural network based on support operators of the selected processing device among the first support operators and the second support operators.

16. The neural processing system of claim 15, wherein the first support operators are not identical to the second support operators.

17. The neural processing system of claim 15 or claim 16, wherein the neural processing controller comprises:

a scheduler configured to select the processing device, which will perform the processing, from among the first and second processing devices based on the state information; and

a compiler configured to generate the transformed neural network by transforming the at least one operator of the neural network to at least one of the support operators of the

selected processing device.

18. The neural processing system of claim 17, wherein, when the state information of the first and second processing devices is substantially the same, the scheduler selects the processing device, which will perform the processing, based on the operators of the neural network and the first and second support operators.

19. The neural processing system of claim 17 or claim 18, wherein the compiler creates the transformed neural network with reference to a table comprising information about the first and second support operators.

20. The neural processing system of any one of claims 15 to 19, wherein the state information comprises at least one of temperature information, voltage information, current information, and clock frequency information.