CLAIMS

1. A system comprising:

an interface to receive a state of a substrate processing tool comprising a plurality of process modules configured to process a substrate, wherein the state of the substrate processing tool is determined based on data received from the process modules of the substrate processing tool and from a plurality of sensors associated with the substrate processing tool; and

a controller coupled to the interface to:

generate a correlation between the state of the substrate processing tool received by the interface and an input previously received by the substrate processing tool from the interface to control the substrate processing tool in response to a prior occurrence of the state; and

generate an output including a response similar to the input previously received to control the substrate processing tool, based on the correlation between the state of the substrate processing tool received by the interface and the input previously received by the substrate processing tool from the interface in response to the prior occurrence of the state.

2. The system of claim 1 wherein the controller is configured to store in a database a plurality of states of the substrate processing tool and corresponding inputs received by the substrate processing tool based on the plurality of states, and to perform the correlation using the database.

3. The system of claim 2 wherein the controller is configured to update the database based on historical data associated with one or more of the substrate processing tool and an additional substrate processing tool, and to perform the correlation using the updated database.

4. The system of claim 2 wherein the controller is configured to store in the database data associated with an additional substrate processing tool, the data including states of the additional substrate processing tool and corresponding inputs received by the additional substrate processing tool based on the states, and to perform the correlation using the data.

5. The system of claim 1 wherein the state of the substrate processing tool includes data indicating an error associated with the substrate processing tool and wherein the input includes data indicating a response to the error.

6. The system of claim 1 wherein the state of the substrate processing tool includes data indicating an impending error associated with the substrate processing tool and wherein the input includes data indicating a response to prevent the error.

7. The system of claim 1 wherein the controller is configured to detect presence of an operator of the substrate processing tool and to control the substrate processing tool according to a response received by the operator based on the output.

8. The system of claim 1 wherein the controller is configured to detect absence of an operator of the substrate processing tool and to control the substrate processing tool in the absence of the operator based on the output.

9. The system of claim 1 wherein the controller is configured to detect absence of an operator of the substrate processing tool and to inform the operator regarding the output.

10. The system of claim 1 wherein the controller is configured to control the substrate processing tool based on the output to ensure completion of processing of the substrate, prevent damage to the substrate, and prevent idling of the process modules.

11. The system of claim 1 wherein the controller is configured to control the substrate processing tool based on the output to optimize scheduling of processing of the substrate by the process modules.

12. A method comprising:

receiving data from a plurality of process modules of a substrate processing tool and from a plurality of sensors associated with the substrate processing tool;

determining a state of the substrate processing tool based on the data received from the process modules and the sensors;

generating a correlation between the state of the substrate processing tool and an input previously received by the substrate processing tool to control the substrate processing tool in response to a prior occurrence of the state; and

generating an output including a response similar to the input previously received to control the substrate processing tool, based on the correlation between the state of the substrate processing tool and the input previously received by the substrate processing tool in response to the prior occurrence of the state.

13. The method of claim 12 further comprising:

storing in a database a plurality of states of the substrate processing tool and corresponding inputs received by the substrate processing tool based on the plurality of states; and

performing the correlation using the database.

14. The method of claim 13 further comprising:

updating the database based on historical data associated with one or more of the substrate processing tool and an additional substrate processing tool; and

performing the correlation using the updated database.

15. The method of claim 13 further comprising:

storing in the database data associated with an additional substrate processing tool, the data including states of the additional substrate processing tool and corresponding inputs received by the additional substrate processing tool based on the states; and

performing the correlation using the data.

16. The method of claim 12 wherein the state of the substrate processing tool includes data indicating an error associated with the substrate processing tool and wherein the input includes data indicating a response to the error.

17. The method of claim 12 wherein the state of the substrate processing tool includes data indicating an impending error associated with the substrate processing tool and wherein the input includes data indicating a response to prevent the error.

18. The method of claim 12 further comprising:

detecting presence of an operator of the substrate processing tool; and

controlling the substrate processing tool according to a response received by the operator based on the output.

19. The method of claim 12 further comprising:

detecting absence of an operator of the substrate processing tool; and

controlling the substrate processing tool in the absence of the operator based on the output.

20. The method of claim 12 further comprising:

detecting absence of an operator of the substrate processing tool; and

informing the operator regarding the output.

21. The method of claim 12 further comprising controlling the substrate processing tool based on the output to ensure completion of processing of the substrate, prevent damage to the substrate, and prevent idling of the process modules.

22. The method of claim 12 further comprising controlling the substrate processing tool based on the output to optimize scheduling of processing of the substrate by the process modules.

23. A system comprising:

a processor; and

machine readable instructions, stored on a tangible machine readable medium, when executed by the processor, configure the processor to:

receive data from a plurality of process modules of a substrate processing tool and from a plurality of sensors associated with the substrate processing tool;

determine a state of the substrate processing tool based on the data received from the process modules and the sensors;

generate a correlation between the state of the substrate processing tool and an input previously received by the substrate processing tool to control the substrate processing tool in response to a prior occurrence of the state; and

generate an output including a response similar to the input previously received to control the substrate processing tool, based on the correlation between the state of the substrate processing tool and the input previously received by the substrate processing tool in response to the prior occurrence of the state.

24. The system of claim 23 wherein the machine readable instructions configure the processor to:

store in a database a plurality of states of the substrate processing tool and corresponding inputs received by the substrate processing tool based on the plurality of states; and

perform the correlation using the database.

25. The system of claim 24 wherein the machine readable instructions configure the processor to:

update the database based on historical data associated with one or more of the substrate processing tool and an additional substrate processing tool; and

perform the correlation using the updated database.

26. The system of claim 24 wherein the machine readable instructions configure the processor to:

store in the database data associated with an additional substrate processing tool, the data including states of the additional substrate processing tool and corresponding inputs received by the additional substrate processing tool based on the states; and

perform the correlation using the data.

27. The system of claim 23 wherein the state of the substrate processing tool includes data indicating an error associated with the substrate processing tool and wherein the input includes data indicating a response to the error.

28. The system of claim 23 wherein the state of the substrate processing tool includes data indicating an impending error associated with the substrate processing tool and wherein the input includes data indicating a response to prevent the error.

29. The system of claim 23 wherein the machine readable instructions configure the processor to:

detect presence of an operator of the substrate processing tool; and

control the substrate processing tool according to a response received by the operator based on the output.

30. The system of claim 23 wherein the machine readable instructions configure the processor to:

detect absence of an operator of the substrate processing tool; and

control the substrate processing tool in the absence of the operator based on the output.

31. The system of claim 23 wherein the machine readable instructions configure the processor to:

detect absence of an operator of the substrate processing tool; and

inform the operator regarding the output.

32. The system of claim 23 wherein the machine readable instructions configure the processor to control the substrate processing tool based on the output to ensure completion of processing of the substrate, prevent damage to the substrate, and prevent idling of the process modules.

33. The system of claim 23 wherein the machine readable instructions configure the processor to control the substrate processing tool based on the output to optimize scheduling of processing of the substrate by the process modules.