CLAIMS

1. A method comprising:

receiving an indication of a sequence of operations for a process at a manufacturing system and an indication of one or more triggering criteria that trigger initiation of the sequence of operations during the process at one or more manufacturing equipment of the manufacturing system;

generating a set of instructions corresponding to the sequence of operations; determining whether the sequence of operations satisfies a validation criterion in view of one or more conditions associated with the one or more manufacturing equipment; and

responsive to determining that the sequence of operations satisfies the validation criterion and detecting that a triggering criterion of the one or more triggering criteria is satisfied, executing the generated set of instructions to initiate the sequence of operations at the one or more manufacturing equipment.

2. The method of claim 1, wherein the sequence of operations comprises one or more cleaning operations for a cleaning process associated with one or more substrate processes at the manufacturing system.

3. The method of claim 2, wherein the cleaning process corresponds to at least one of a pre-clean process to prepare a process chamber before execution of the at least one of the one or more substrate processes or a post-clean process to clean a process chamber after execution of the at least one of the one or more substrate processes.

4. The method of claim 2, wherein the one or more substrate processes comprise at least one of an etch process or a deposition process.

5. The method of claim 1, wherein generating the set of instructions corresponding to the sequence of operations comprises:

determining a triggering condition associated with the sequence of operations in view of the one or more triggering criteria;

updating a semantic dependency tree in view of the determined triggering condition, wherein the updated semantic dependency tree comprises one or more nodes that correspond to each operation of the sequence of operations; and

translating each operation associated with a respective node of the updated semantic dependency tree into one or more respective instructions of the set of instructions.

6. The method of claim 1, further comprising:

receiving an indication of a modified sequence of operations, wherein the modified sequence of operations includes one or more operations that are different than the sequence of operations;

generating an updated set of instructions corresponding to the modified sequence of operations; and

responsive to detecting that at least one of the one or more triggering criteria associated with the modified sequence of operations is satisfied, executing the updated set of instructions.

7. The method of claim 1, further comprising:

responsive to determining that the sequence of cleaning operations does not satisfy the validation criterion, transmitting a notification to a client device indicating that the sequence of operations is not to be performed at the one or more manufacturing equipment.

8. The method of claim 1, wherein the indication of the sequence of operations is received from a client device responsive to a user of the manufacturing system providing the sequence of operations as input on a user interface of the client device, the user interface provided by a process sequence component associated with the manufacturing system.

9. A system comprising:

a memory; and

a set of one or more processing devices coupled to the memory, the set of one or more processing devices to:

provide a graphical user interface (GUI) of a process sequence component associated with a manufacturing system, wherein the GUI enables a user of the manufacturing system to provide a corresponding sequence of operations for one or more processes at the manufacturing system;

receive, via the GUI, an indication of a sequence of operations associated with a process to be performed at one or more manufacturing equipment of the manufacturing system;

generate a set of instructions associated with the process based on the indication of the sequence of operations and one or more triggering criteria that trigger initiation of the sequence of operations; and

responsive to determining that the sequence of operations satisfies a validation criterion in view of one or more conditions associated with the one or more manufacturing equipment, transmit the generated set of instructions to a system controller associated with the manufacturing system, wherein the system controller is to perform the process at the one or more manufacturing equipment in accordance with the generated set of instructions based on a detection that the one or more triggering criteria associated with the sequence of operations are satisfied.

10. The system of claim 9, wherein the sequence of operations comprises one or more cleaning operations for a cleaning process associated with one or more substrate processes at the manufacturing system.

11. The system of claim 10, wherein the cleaning process corresponds to at least one of a pre-clean process to prepare a process chamber before execution of the at least one of the one or more substrate processes or a post-clean process to clean a process chamber after execution of the at least one of the one or more substrate processes.

12. The system of claim 10, wherein the one or more substrate processes comprise at least one of an etch process or a deposition process.

13. The system of claim 10, wherein to generate the set of instructions associated with the process, the set of one or more processing devices is to:

determine a triggering condition associated with the sequence of operations of the process;

update a semantic dependency tree in view of the determined triggering condition, wherein the updated semantic dependency tree comprises one or more nodes that correspond to each operation of the sequence of the operations; and

translate each operation associated with a respective node of the updated semantic dependency tree into a respective instruction of the set of instructions.

14. The system of claim 9, wherein the processing device is further to:

receive, via the GUI, an indication of a modified sequence of operations associated with the process, wherein the modified sequence of operations includes one or more operations that are different than the sequence of operations;

generate an updated set of instructions corresponding to the modified sequence of operations; and

transmit the updated set of instructions to the system controller.

15. The system of claim 9, wherein the set of one or more processing devices is further to:

responsive to determining that the sequence of operations does not satisfy the validation criterion, update the GUI to include a notification indicating that the sequence of operations cannot be performed at the one or more manufacturing equipment.

16. A non-transitory computer readable storage medium comprising instructions that, when executed by a set of one or more processing devices, cause the set of one or more processing devices to:

receive an indication of a sequence of operations for a process at a manufacturing system and an indication of one or more triggering criteria that trigger initiation of the sequence of operations during the process at one or more manufacturing equipment of the manufacturing system;

generate a set of instructions corresponding to the sequence of operations;

determine whether the sequence of operations satisfies a validation criterion in view of one or more conditions associated with the one or more manufacturing equipment; and

responsive to determining that the sequence of operations satisfies the validation criterion and detecting that a triggering criterion of the one or more triggering criteria is satisfied, execute the generated set of instructions to initiate the sequence of operations at the one or more manufacturing equipment.

17. The non-transitory computer readable storage medium of claim 16, wherein the sequence of operations comprises one or more cleaning operations for a cleaning process associated with one or more substrate processes at the manufacturing system.

18. The non-transitory computer readable storage medium of claim 17, wherein the cleaning process corresponds to at least one of a pre-clean process to prepare a process chamber

before execution of the at least one of the one or more substrate processes or a post-clean process to clean a process chamber after execution of the at least one of the one or more substrate processes.

19. The non-transitory computer readable storage medium of claim 17, wherein the one or more substrate processes comprise at least one of an etch process or a deposition process.

20. The non-transitory computer readable storage medium of claim 17, wherein to generate the set of instructions corresponding to the sequence of operations, the set of one or more processing devices is to:

determine a triggering condition associated with the sequence of operations in view of the one or more triggering criteria;

update a semantic dependency tree in view of the determined triggering condition, wherein the updated semantic dependency tree comprises one or more nodes that correspond to each operation of the sequence of operations; and

translate each operation associated with a respective node of the updated semantic dependency tree into a respective instruction of the set of instructions.