CLAIMS

WHAT IS CLAIMED IS:

1. A computer implemented method for servicing an assembled engine, the method comprising:

receiving information including an initial condition profile, CP1, of the assembled engine, wherein CP1 comprises a prediction of a change of a parameter over time or cycle;

forming a workscope associated with a servicing operation of the assembled engine in view of the initial condition profile, CP1;

servicing the assembled engine in view of the workscope;

determining at least in part an updated condition profile, CP2, of the assembled engine in view of information acquired during the service, wherein CP2 comprises an updated prediction of a change of the parameter over time or cycle; and

storing the updated condition profile, CP2, for use in a subsequent service operation.

2. The method of claim 1, further comprising:

receiving information including the updated condition profile, CP2, of the assembled engine in preparation for a subsequent service operation;

forming a subsequent workscope associated with the subsequent service operation;

subsequently servicing the assembled engine in view of the subsequent workscope;

determining a further updated condition profile, CP3, of the assembled engine in view of information acquired during the subsequent service; and

storing the further updated condition profile, CP3, for use in a further subsequent service operation.

3. The method of claim 1, wherein the initial condition profile, CP1, is based on at least one of a modeled condition of the assembled engine, fleetwide data, and prior servicing operations associated with the assembled engine.

4. The method of claim 1, wherein the step of storing the updated condition profile, CP2, is performed by storing the updated condition profile, CP2, in a data lake.

5. The method of claim 1, wherein the step of determining at least in part the updated condition profile, CP2, is performed autonomously.

6. The method of claim 1, further comprising forming a future workscope in view of information associated with the updated condition profile, CP2.

7. The method of claim 6, further comprising subsequently servicing the assembled engine using at least in part the future workscope.

8. The method of claim 1, wherein the step of servicing the assembled engine is performed at least in part by an autonomous robotic assembly.

~~9. A method of servicing equipment comprising:~~

~~prior to performing a task associated with a workscope for servicing the equipment, determining an original condition of the equipment;~~

~~after performing the task, capturing an updated condition of the equipment;~~

~~comparing, using one or more computing devices, the updated condition of the equipment with the original condition of the equipment; and~~

~~generating an alert when the updated condition deviates from the original condition by more than a preset threshold.~~

~~10. The method of claim 9, wherein determining the original condition of the equipment comprises capturing and recording the original condition of the equipment using one or more visual capture devices, and wherein capturing and recording the equipment condition continues while the task is being performed.~~

~~11. The method of claim 9, wherein the task comprises at least one of drilling, cleaning, cutting, and coating.~~

~~12. The method of claim 9, wherein the preset threshold is at least partially autonomously determined in view of analytic profiles of the equipment and fleetwide workscopes.~~

9. The method of claim 8, wherein the updated condition profile, CP2 is stored

locally at the autonomous robotic assembly.

10. The method of claim 6, further comprising: determining a timing for performing the future workscope based on data in the initial condition profile, CP1 and the updated condition profile, CP2.

11. A system for servicing an assembled engine, the system comprises:

an autonomous robotic assembly; and

a computing device in communication with the autonomous robotic assembly, the computing device being configured to:

receive information including an initial condition profile, CP1, of the assembled engine, wherein CP1 comprises a prediction of a change of a parameter over time or cycle;

form a workscope associated with a servicing operation of the assembled engine in view of the initial condition profile, CP1;

cause the autonomous robotic assembly to service the assembled engine in view of the workscope;

determine at least in part an updated condition profile, CP2, of the assembled engine in view of information acquired during the service, wherein CP2 comprises an updated prediction of a change of the parameter over time or cycle; and

store the updated condition profile, CP2, for use in a subsequent service operation.

12. The system of claim 11, wherein the computing device is further configured to:

receive information including the updated condition profile, CP2, of the assembled engine in preparation for a subsequent service operation;

form a subsequent workscope associated with the subsequent service operation;

subsequently cause the autonomous robotic assembly to service the assembled engine in view of the subsequent workscope;

determine a further updated condition profile, CP3, of the assembled engine in view of information acquired during the subsequent service; and

store the further updated condition profile, CP3, for use in a further subsequent service operation.

13. The system of claim 11, wherein the initial condition profile, CP1, is based on at least one of a modeled condition of the assembled engine, fleetwide data, and prior servicing operations associated with the assembled engine.

14. The system of claim 11, wherein the step of storing the updated condition profile, CP2, is performed by storing the updated condition profile, CP2, in a data lake.

15. The system of claim 11, wherein the step of determining at least in part the updated condition profile, CP2, is performed autonomously.

16. The system of claim 11, wherein the computing device is further configured to: form a future workscope in view of information associated with the updated condition profile, CP2.

17. The system of claim 16, wherein the computing device is further configured to: determine a timing for performing the future workscope based on data in the initial condition profile, CP1 and the updated condition profile, CP2.

18. The system of claim 16, further comprising subsequently servicing the assembled engine using at least in part the future workscope.

19. The system of claim 16, wherein the future workscope comprises an inspection task.

20. The system of claim 11, wherein the updated condition profile, CP2 is stored locally at the autonomous robotic assembly.

~~13. The method of claim 9, wherein the step of comparing the updated condition with the original condition occurs using information stored on a data lake, and wherein an operator can access the information from the data lake.~~

~~14. The method of claim 9, wherein the step of capturing the original condition and the updated condition of the equipment is performed by an autonomous robotic assembly configured to further perform repairs to the equipment.~~

~~15. A method of servicing equipment comprising:~~

~~performing at least one of inspection and repair associated with a workscope of the equipment, wherein the at least one of inspection and repair comprises a queue of tasks to be performed;~~

~~terminating the at least one of inspection and repair prior to completion of the queue;~~

~~marking a stopping point identifying the location of termination relative to the queue and the equipment; and~~

~~resuming at least one of inspection and repair beginning at the location of termination relative to the queue and equipment.~~

~~16. The method of claim 15, wherein the step of marking the stopping point comprises marking an interface location between where the equipment has already performed tasks, or portions of tasks, and where the equipment has yet to perform tasks.~~

~~17. The method of claim 16, wherein the step of marking the interface location comprises:~~

~~identifying one or more micro-features of the equipment at or adjacent to the interface location; and~~

~~relating the interface location to the one or more micro-features.~~

~~18. The method of claim 16, wherein marking the interface location comprises use of a chemical marking, marking the interface location with a heat resistant marking, or both.~~

~~19. The method of claim 15, wherein at least one of marking the stopping point and resuming at least one of inspection and repair is performed with a visual capture device of an autonomous robotic assembly configured to perform the servicing operation.~~

~~20. The method of claim 15, wherein the equipment comprises a gas turbine engine.~~