SUMMARY

An aspect of the present disclosure provides a method of processing information onboard a vehicle. The method includes reading, by a processor onboard the vehicle, execution attributes on the vehicle, wherein reading is performed by a computer program configured to process information about the vehicle. The execution attributes define how the computer program processes information onboard the vehicle, and define a number of information processing actions. The execution attributes are not part the computer program. The execution attributes are defined in a first execution attributes file separate from the computer program. The execution attributes comprise a number of execution stacks. An order of the execution attributes in the execution stacks defines a sequence for processing the execution attributes. The method also includes after reading, executing, by the processor, the computer program to process information about the vehicle according to the sequence, wherein information is generated; generating a report based on the information; sending the report to an off-board health management system configured to monitor, collect, and analyze the report and to generate maintenance decisions; and implementing the maintenance decisions received from the off-board health management system.

Another aspect of the present disclosure provides an apparatus, comprising a vehicle; a processor onboard the vehicle; and a computer readable storage media on board the vehicle and in communication with the processor, wherein the computer readable storage media stores program code. The program code is configured to: read, by the processor, execution attributes on the vehicle, wherein reading is performed by a computer program configured to process information about the vehicle, wherein: the execution attributes define how the computer program processes information onboard the vehicle, and define a number of information processing actions; the execution attributes are not part the computer program; the execution attributes are defined in a first execution attributes file separate from the computer program; the execution attributes comprise a number of execution stacks; and an order of

the execution attributes in the execution stacks defines a sequence for processing the execution attributes. After reading, the processor executes the computer program to process information about the vehicle according to the sequence, wherein information is generated; generates a report based on the information; and sends the report to an off-board health management system configured to monitor, collect, and analyze the report and to generate maintenance decisions.

Another aspect of the present disclosure provides a method of processing information onboard a platform. The method includes loading execution attributes onto the platform, wherein: the execution attributes define how a computer program executing onboard the platform processes information onboard the platform, and define a number of information processing actions; the execution attributes are not part the computer program; the execution attributes are defined in a first execution attributes file separate from the computer program; the execution attributes comprise a number of execution stacks; and an order of the execution attributes in the execution stacks defines a sequence for processing the execution attributes. The method also includes receiving, from the platform, the report generated by the computer program; analyzing the report to identify a desirable change to information processing onboard the platform; generating new execution attributes to implement the desirable change to information processing onboard the platform, wherein the new execution attributes define a number of new information processing actions to be performed by the computer program without changing the computer program on the platform; and loading the new execution attributes onto the platform.

The features, functions, and benefits can be achieved independently in various embodiments of the present disclosure or may be combined in yet other embodiments in which further details can be seen with reference to the following description and drawings.

CLAIMS

1. A method of processing information onboard a vehicle, comprising:

reading, by a processor onboard the vehicle, execution attributes on the vehicle, wherein reading is performed by a computer program configured to process information about the vehicle, wherein:

the execution attributes define how the computer program processes information onboard the vehicle, and define a number of information processing actions;

the execution attributes are not part the computer program;

the execution attributes are defined in a first execution attributes file separate from the computer program; the execution attributes comprise a number of execution stacks; and

an order of the execution attributes in the execution stacks defines a sequence for processing the execution attributes;

after reading, executing, by the processor, the computer program to process information about the vehicle according to the sequence, wherein information is generated;

generating a report based on the information;

sending the report to an off-board health management system configured to monitor, collect, and analyze the report and to generate maintenance decisions; and

implementing the maintenance decisions received from the off-board health management system.

2. The method of claim 1, wherein the execution attributes are processed in reverse Polish notation.

3. The method of claim 1, wherein the execution attributes comprise information identifiers identifying the information

to be processed and operation identifiers identifying operations to be performed on the information.

4. The method of claim 3, wherein the information identifiers identify information sources for the information.

5. The method of claim 1, wherein the number of information processing actions are selected from a trigger action, a persist action, and a report action.

6. The method of claim 1 wherein the execution attributes comprise first execution attributes, and wherein the method further comprises:

loading new execution attributes on the vehicle by loading a second execution attributes file different than the first execution attributes file, wherein the new execution attributes define a number of new information processing actions, and wherein loading the second execution attributes file does not change the computer program;

reading, by the computer program, the new execution attributes, wherein reading changes the first execution attributes; and

performing the number of new information processing actions on the vehicle by the computer program using the new execution attributes, thereby changing the number of information processing actions performed by the computer program running on the data processing system on the vehicle without changing the computer program on the vehicle.

7. The method of claim 1, wherein the vehicle is an aircraft and the number of information processing actions comprises processing operational information for the aircraft while the aircraft is in flight.

8. An apparatus, comprising:

a vehicle;

a processor onboard the vehicle; and

a computer readable storage media on board the vehicle and in communication with the processor, wherein the computer readable storage media stores program code, the program code configured to:

read, by the processor, execution attributes on the vehicle, wherein reading is performed by a computer program configured to process information about the vehicle, wherein:

the execution attributes define how the computer program processes information onboard the vehicle, and define a number of information processing actions;

the execution attributes are not part the computer program;

the execution attributes are defined in a first execution attributes file separate from the computer program;

the execution attributes comprise a number of execution stacks; and

an order of the execution attributes in the execution stacks defines a sequence for processing the execution attributes;

after reading, execute, by the processor, the computer program to process information about the vehicle according to the sequence, wherein information is generated;

generating a report based on the information; and

sending the report to an off-board health management system configured to monitor, collect, and analyze the report and to generate maintenance decisions.

9. The apparatus of claim 8, wherein the processor is configured to process the execution attributes in reverse Polish notation.

10. The apparatus of claim 8, wherein the execution attributes comprise information identifiers identifying the information to be processed and operation identifiers identifying operations to be performed on the information.

11. The apparatus of claim 10, wherein the information identifiers identify information sources for the information.

12. The apparatus of claim 8, wherein the number of information processing actions are selected from a trigger action, a persist action, and a report action.

13. The apparatus of claim 8, wherein the vehicle is an aircraft and the number of information processing actions comprises processing operational information for the aircraft while the aircraft is in flight.

14. A method of processing information onboard a platform, comprising:

loading execution attributes onto the platform, wherein:

the execution attributes define how a computer program executing onboard the platform processes information onboard the platform, and define a number of information processing actions;

the execution attributes are not part the computer program;

the execution attributes are defined in a first execution attributes file separate from the computer program;

the execution attributes comprise a number of execution stacks; and

an order of the execution attributes in the execution stacks defines a sequence for processing the execution attributes; receiving, from the platform, the report generated by the computer program;

analyzing the report to identify a desirable change to information processing onboard the platform;

generating new execution attributes to implement the desirable change to information processing onboard the platform, wherein the new execution attributes define a number of new information processing actions to be performed by the computer program without changing the computer program on the platform; and

loading the new execution attributes onto the platform.

15. The method of claim 14, wherein the execution attributes are processed in reverse Polish notation.

16. The method of claim 14, wherein the execution attributes comprise information identifiers identifying information to be processed to perform the number of information processing actions and operation identifiers identifying operations to be performed on the information.

17. The method of claim 14, wherein the number of information processing actions further comprise an information processing action selected from a trigger action and a persist action.

18. The method of claim 14, wherein the platform is an aircraft and the number of information processing actions comprises processing operational information for the aircraft while the aircraft is in flight.