CLAIMS:

What is claimed is:

1. A method of using a configuration software part ~~(152)~~ for an aircraft ~~(108)~~, comprising:

identifying, by a processor unit ~~(1404)~~ on the aircraft ~~(108)~~, software parts ~~(111)~~ for the aircraft ~~(108)~~ from a list of approved software parts ~~(210)~~ for an approved software configuration ~~(208)~~ for the aircraft ~~(108)~~ in the configuration software part ~~(152)~~, wherein the approved software configuration ~~(208)~~ for the aircraft ~~(108)~~ is identified in the configuration software part ~~(152)~~ and the configuration software part ~~(152)~~ is stored on the aircraft ~~(108)~~; and

determining, by the processor unit ~~(1404)~~ on the aircraft ~~(108)~~, whether the software parts ~~(111)~~ identified in the configuration software part ~~(152)~~ are on the aircraft ~~(108)~~.

2. The method of claim 1, wherein the configuration software part ~~(152)~~ is part of an actual software configuration ~~(138)~~ of the aircraft ~~(108)~~.

3. The method of claim 1, wherein the configuration software part ~~(152)~~ comprises:

an identification certificate ~~(202)~~;

information identifying a plurality of approved software configurations ~~(204)~~ for the aircraft ~~(108)~~;

the list of approved software parts ~~(210)~~ for the aircraft ~~(108)~~ for each of the plurality of approved software configurations ~~(204)~~; and

configuration rules ~~(206)~~ identifying conditions ~~(212)~~ in which the each of the plurality of approved software configurations ~~(204)~~ is approved for the aircraft ~~(108)~~.

4. The method of claim 1, wherein the configuration software part ~~(152)~~ comprises a number of supplier portions ~~(401)~~ and an operator portion ~~(402)~~.

5. The method of any one of claims 1 to 4 further comprising:

identifying, by the processor unit ~~(1404)~~ on the aircraft ~~(108)~~, an actual software configuration ~~(138)~~ of the aircraft ~~(108)~~; and

determining, by the processor unit ~~(1404)~~ on the aircraft ~~(108)~~, whether the actual software configuration ~~(138)~~ matches the approved software configuration ~~(208)~~ for the aircraft ~~(108)~~ identified in the configuration software part ~~(152)~~.

6. The method of any one of claims 1 to 5 further comprising, in response to a determination that the software parts ~~(111)~~ are not on the aircraft ~~(108)~~:

obtaining the software parts ~~(111)~~ by the processor unit ~~(1404)~~ on the aircraft ~~(108)~~; and

storing the software parts ~~(111)~~ on the aircraft ~~(108)~~ by the processor unit ~~(1404)~~ on the aircraft ~~(108)~~.

7. The method of any one of claims 1 to 6 further comprising:

identifying, by the processor unit ~~(1404)~~ on the aircraft ~~(108)~~, the software parts ~~(111)~~ on the aircraft ~~(108)~~;

determining, by the processor unit ~~(1404)~~ on the aircraft ~~(108)~~, whether the software parts ~~(111)~~ are identified in the list of approved software parts ~~(210)~~ for the approved software configuration ~~(208)~~ for the aircraft ~~(108)~~ in the configuration software part ~~(152)~~; and

removing the software parts ~~(111)~~ from the aircraft ~~(108)~~, by the processor unit ~~(1404)~~ on the aircraft ~~(108)~~, in response to a determination that the software parts are not identified in the list of approved software parts ~~(210)~~.

8. An apparatus, comprising:

a storage device ~~(142)~~ on an aircraft ~~(108)~~;

a configuration software part ~~(152)~~ for the aircraft ~~(108)~~ stored in the storage device ~~(142)~~, wherein the configuration software part ~~(152)~~ identifies an approved software configuration ~~(208)~~ for the aircraft ~~(108)~~ and comprises a list of approved software parts ~~(210)~~ for the approved software configuration ~~(208)~~ for the aircraft ~~(108)~~; and

a configuration manager ~~(174)~~ on the aircraft ~~(108)~~ configured to identify software parts ~~(111)~~ from the list of approved software parts ~~(210)~~ in the configuration software part ~~(152)~~ stored in the storage device ~~(142)~~ on the aircraft ~~(108)~~ and determine whether the software parts ~~(111)~~ identified in the list of approved software parts ~~(210)~~ in the configuration software part ~~(152)~~ are on the aircraft ~~(108)~~.

9. The apparatus of claim 8, wherein the configuration software part ~~(152)~~ is part of an actual software configuration ~~(138)~~ of the aircraft ~~(108)~~.

10. The apparatus of claim 8, wherein the configuration software part ~~(152)~~ comprises:

an identification certificate ~~(202)~~;

information identifying a plurality of approved software configurations ~~(204)~~ for the aircraft ~~(108)~~;

the list of approved software parts ~~(210)~~ for the aircraft ~~(108)~~ for each of the plurality of approved software configurations ~~(204)~~; and

configuration rules ~~(206)~~ identifying conditions ~~(212)~~ in which the each of the plurality of approved software configurations ~~(204)~~ is approved for the aircraft ~~(108)~~.

11. The apparatus of claim 8, wherein the configuration software part ~~(152)~~ comprises a number of supplier portions ~~(401)~~ and an operator portion ~~(402)~~.

12. The apparatus of any one of claims 8 to 11, wherein the configuration manager ~~(174)~~ is configured to:

identify an actual software configuration ~~(138)~~ of the aircraft ~~(108)~~; and

determine whether the actual software configuration ~~(138)~~ matches the approved software configuration ~~(208)~~ for the aircraft ~~(108)~~ identified in the configuration software part ~~(152)~~.

13. The apparatus of any one of claims 8 to 12, wherein the configuration manager ~~(174)~~ is configured to obtain the software parts ~~(111)~~ and store the software parts ~~(111)~~ in the storage device ~~(142)~~ in response to a determination that the software parts ~~(111)~~ are not on the aircraft ~~(108)~~.

14. The apparatus of any one of claims 8 to 13, wherein the configuration manager ~~(174)~~ is configured to:

identify software parts ~~(111)~~ on the aircraft ~~(108)~~;

determine whether the software parts (111) are identified in the list of approved software parts (210) for the approved software configuration (208) for the aircraft (108) in the configuration software part (152); and

remove the software parts (111) from the aircraft (108) in response to a determination that the software parts (111) are not identified in the list of approved software parts (210).

15. A method of providing a configuration software part (152) for an aircraft (108), comprising:

receiving, by a processor unit (1404), from a manufacturer (102) of the aircraft (108), a manufacturer identification certificate (164), information identifying an approved manufacturer software configuration (510) for the aircraft (108), a list of approved manufacturer software parts (512) for the aircraft (108) for the approved manufacturer software configuration (510), and cryptographic values for the approved manufacturer software parts (513);

receiving, by the processor unit (1404), from an operator (104) of the aircraft (108), an operator identification certificate (517), information identifying an approved operator software configuration (522) for the aircraft (108), a list of approved operator software parts (524) for the aircraft (108) for the approved operator software configuration (522), and cryptographic values for the approved operator software parts (525);

combining, by the processor unit (1404), the manufacturer identification certificate (164), the information identifying the approved manufacturer software configuration (510) for the aircraft (108), the list of approved manufacturer software parts (512) for the approved manufacturer software configuration (510), the cryptographic values for the approved manufacturer software parts (513), the operator identification certificate (517), the information identifying the approved operator software configuration (522) for the aircraft (108), the list of approved operator software parts (524) for the approved operator software configuration (522), and the cryptographic values for the approved operator software parts (525) to form the configuration software part (152) for the aircraft (108); and

providing the configuration software part (152) for delivery to the aircraft (108) by the processor unit (1404).

16. The method of claim 15 further comprising:

receiving, by the processor unit (1404), from the manufacturer (102) of the aircraft (108), manufacturer configuration rules (508) identifying first conditions (514) in which each of a plurality of approved manufacturer software configurations (506) is approved for the aircraft (108);

receiving, by the processor unit (1404), from the operator (104) of the aircraft (108), operator configuration rules (520) identifying second conditions (526) in which each of a plurality of approved operator software configurations (518) is approved for the aircraft (108); and

including, by the processor unit (1404), the manufacturer configuration rules (508), information identifying the plurality of approved manufacturer software configurations (506), the operator configuration rules (520), and information identifying the plurality of approved operator software configurations (518) in the configuration software part (152) for the aircraft (108).

17. The method of claim 15 or 16 further comprising:

determining, by the processor unit (1404), whether software parts (111) identified in one of the list of approved manufacturer software parts (512) and the list of approved operator software parts (524) in the configuration software part (152) is in a software part library (150) for providing the software part to the aircraft (108); and

obtaining the software parts (111) and storing the software parts (111) in the software part library (150), by the processor unit (1404), in response to a determination that the software parts (111) are not in the software part library (150).

18. The method of any one of claims 15 to 17, wherein the configuration software part (152) for the aircraft (108) further comprises an identification of a number of previous configurations of the aircraft.

19. The method of claim 17 further comprising:

loading the configuration software part (152) on the aircraft (108) such that the configuration software part (152) comprises a part of an actual software configuration (138) of the aircraft (108);

using the configuration software part (152) on the aircraft (108) to manage the actual software configuration (138) of the aircraft (108); and

using the configuration software part ~~(152)~~ on the aircraft ~~(108)~~ to manage software parts ~~(111)~~ on the aircraft ~~(108)~~.

20. The method of claim 19, further comprising attaching a current identification certificate to a previous configuration software part ~~(302)~~ stored on the aircraft ~~(108)~~.