CLAIMS

1. An aircraft survey system for determining information about an aircraft, comprising:

an unmanned aerial vehicle (UAV) having a radio-frequency identification (RFID) reader, a UAV controller, and a UAV transceiver, the RFID reader being configured to read an RFID tag supported on the aircraft at an identified location and having aircraft-related identifying data, the UAV controller configured to receive an RFID tag location map for the aircraft and generate navigation signals based at least in part on the RFID tag location map for navigating proximate to the identified location, and the UAV transceiver configured to communicate with the UAV controller and receive and transmit data wirelessly; and

a base station including a communication system, a base-station controller operatively coupled to the communication system, and a data storage device operatively coupled to the base-station controller, the communication system configured to communicate wirelessly with the UAV, the base-station controller configured to receive and transmit to the UAV the RFID tag location map for the aircraft, receive read-related data from the UAV, the read-related data including aircraft-related identifying data when the RFID tag is at the RFID tag location, and determine from the received read-related data information about the aircraft.

2. The survey system of claim 1, where the aircraft-related identifying data includes component-identifying data corresponding to a component installed on the aircraft, and wherein the base-station controller is further configured to receive desired configuration data for the aircraft, and determine whether the component-identifying data received from the UAV corresponds to a component that matches the desired configuration data.

3. The survey system of claim 2, wherein the base-station controller is further configured to generate an output identifying the component if the aircraft-related identifying data includes component-identifying data corresponding to a component that does not match the desired configuration data.

4. The survey system of claim 2, wherein the UAV controller is configured to transmit to the base station read-related data indicating that no component-identifying data was read at the RFID tag location when the RFID reader receives no component-identifying data at the RFID tag location, and the base-station controller is further configured to generate an output identifying the desired configuration data for the RFID tag location.

5. The survey system of claim 1, where the RFID tag location map includes a plurality of RFID tag locations, and wherein the UAV controller is further configured to generate navigation signals based at least in part on the received RFID tag location map appropriate for controlling navigation of the UAV to the plurality of RFID tag locations sequentially, and transmit read-related data to the base station for each of the RFID tag locations to which the UAV navigated.

6. The survey system of claim 5, wherein the base-station controller is further configured to receive desired configuration data for each RFID tag location on the aircraft, determine whether the aircraft-related identifying data received from the UAV corresponds to a component that

matches the desired configuration data, and generate an output identifying the component if the aircraft-related identifying data includes component-identifying data that corresponds to a component that does not match the desired configuration data.

7. The survey system of claim 6, wherein the UAV controller is configured to transmit to the base station read-related data indicating that no component-identifying data was read at one of the plurality of RFID tag locations when the RFID reader receives no component-identifying data at the one RFID tag location, and the base-station controller is further configured to generate an output identifying the desired configuration data for the one RFID tag location.

8. The survey system of claim 1, wherein the UAV further includes a visible-light camera, and the UAV controller is configured to navigate along the aircraft, control the camera to record an image of at least a portion of the aircraft having aircraft identification indicia, and transmit image signals representative of the image to the base station, and the base-station controller is configured to identify the model and registration number of the aircraft from the image signals received from the UAV.

9. A method for determining information about an aircraft, comprising:

receiving at a base station an RFID tag location map for the aircraft;

transmitting to an unmanned aerial vehicle (UAV) the RFID tag location map for the aircraft;

generating navigation signals by the UAV based at least in part on the received RFID tag location map appropriate for controlling navigation of the UAV proximate to an RFID tag supported on the aircraft at an RFID tag location, the RFID tag having aircraft-related identifying data;

receiving by the base station read-related data from the UAV, the read-related data including aircraft-related identifying data when the RFID tag is at the RFID tag location; and

determining at the base station from the received read-related data information about the aircraft.

10. The method of claim 9, where the aircraft-related identifying data includes component-identifying data corresponding to a component installed on the aircraft, the method further comprising receiving by the base station desired configuration data for the aircraft, and determining by the base station whether the aircraft-related identifying data received from the UAV includes component-identifying data that corresponds to a component that matches the desired configuration data.

11. The method of claim 10, further comprising generating by the base station an output identifying the component if the aircraft-related identifying data includes component-identifying data corresponding to a component that does not match the desired configuration data.

12. The method of claim 10, wherein receiving read-related data includes receiving read-related data indicating that no component-identifying data was read at the RFID tag location, the method further comprising generating by the base-station an output identifying the desired

configuration data for the RFID tag location when the read-related data indicates that no component-identifying data was read at the RFID tag location.

13. The method of claim 9, where the RFID tag location map includes a plurality of RFID tag locations, and wherein generating navigation signals includes generating navigation signals based at least in part on the stored RFID tag location map appropriate for controlling navigation of the UAV to the plurality of RFID tag locations sequentially, and receiving read-related data includes receiving read-related data from the UAV for each of the plurality of RFID tag locations.

14. The method of claim 13, further comprising receiving desired configuration data for each of the plurality of RFID tag locations, determining whether the read-related data received from the UAV includes component-identifying data corresponding to a component that matches the desired configuration data, and generating an output identifying the component to which the component-identifying data corresponds if the component-identifying data does not match the desired configuration data.

15. The method of claim 14, wherein receiving the read-related data includes receiving read-related data indicating that no component-identifying data was read at one of the plurality of RFID tag locations, and generating an output includes generating an output identifying the desired configuration data for the one RFID tag location.

16. The method of claim 9, where the UAV further includes a visible-light camera, and wherein generating navigation signals includes generating navigation signals appropriate for navigating the UAV along the aircraft and control signals appropriate for controlling operation of the camera to record an image of at least a portion of the aircraft having aircraft identification indicia, the method further comprising receiving by the base station from the UAV image signals representative of the image of at least a portion of the aircraft, and determining the model and registration number of the aircraft from the image signals received from the UAV.

17. The method of claim 9, where the aircraft-related identifying data includes model-type identifying data representative of a model type of the aircraft, and wherein determining information about the aircraft includes determining the model type of the aircraft from the model-type identifying data received from the UAV.

18. A computer program product, comprising:

a first computer readable storage medium having a first set of computer readable program instructions embodied therewith and a second computer readable storage medium having a second set of computer readable program instructions embodied therewith, the first set of computer readable program instructions, when executed by a first processor of a base station, configuring the base station to:

receive an RFID tag location map for the aircraft;

transmit the RFID tag location map for the aircraft to an unmanned aerial vehicle (UAV);

receive read-related data from the UAV, the read-related data including aircraft-related identifying data when an RFID tag is at an RFID tag location; and

determine from the received read-related data information about the aircraft; and

the second set of computer readable program instructions, when executed by a second processor of the UAV, configuring the UAV to:

receive the RFID tag location map from the base station; and

generate navigation signals based at least in part on the received RFID tag location map appropriate for controlling navigation of the UAV proximate to an RFID tag supported on the aircraft at an RFID tag location, the RFID tag having the aircraft-related identifying data.

19. The computer program product of claim 18, where the aircraft-related identifying data includes component-identifying data corresponding to a component installed on the aircraft, and wherein the first set of computer readable program instructions, when executed by the first processor, further configure the base station to receive desired configuration data for the aircraft, and determine whether the component-identifying data received from the UAV corresponds to a component that matches the desired configuration data.

20. The computer program product of claim 18, where the UAV further includes a visible-light camera, and wherein the second set of computer readable program instructions, when executed by the second processor, further configure the second processor to generate navigation signals appropriate for navigating the UAV along the aircraft and control signals appropriate for controlling operation of the camera to record an image of at least a portion of the aircraft having aircraft identification indicia, and wherein the first set of computer readable program instructions, when executed by the first processor, further configure the first processor to receive from the UAV image signals representative of the image of at least a portion of the aircraft, and determine the model and registration number of the aircraft from the image signals received from the UAV.