WHAT IS CLAIMED IS:

1. An automated system comprising:

a camera module comprising:

a first infrared camera;

a second infrared camera; and

a visible light camera;

an autonomous vehicle comprising a vertically extendable arm, wherein the camera module is attached to a distal end of the vertically extendable arm; and

a processor configured to:

initiate movement of the autonomous vehicle around an aircraft according to a predetermined path;

initiate a scan of an exterior surface of the aircraft using the first infrared camera, the second infrared camera, the visible light camera, or a combination thereof; and

in response to a portion of the exterior surface of the aircraft being damaged:

initiate movement of the autonomous vehicle to position the first infrared camera and the second infrared camera so that a base line between the first infrared camera and the second infrared camera is parallel with the portion of the exterior surface of the aircraft;

rotate the first infrared camera and the second infrared camera so that the first infrared camera and the second infrared camera are iteratively directed at points running along a dent in the portion of the exterior surface of the aircraft beginning at a starting point on a first side of the dent and ending at an ending point on a second side of the dent;

for each point of the points running along the dent, determine a first angle in azimuth associated with the first infrared camera and a second angle in azimuth associated with the second infrared camera;

calculate distances between the base line and the points running along the dent using the first angle in azimuth and the second angle in azimuth for each point of the points; and

generate a three-dimensional model of the portion of the exterior surface of the aircraft based on the distances between the base line and the points running along the dent.

2. An automated system comprising:

a camera module comprising:

a first infrared camera;

a second infrared camera; and

a visible light camera;

an autonomous vehicle comprising a vertically extendable arm, wherein the camera module is attached to a distal end of the vertically extendable arm; and

a processor configured to:

initiate movement of the autonomous vehicle around an aircraft according to a predetermined path;

initiate a scan of an exterior surface of the aircraft using the first infrared camera, the second infrared camera, the visible light camera, or a combination thereof; and

in response to a portion of the exterior surface of the aircraft being damaged:

initiate movement of the autonomous vehicle to position the first infrared camera and the second infrared camera so that a base line between the first infrared camera and the second infrared camera is parallel with the portion of the exterior surface of the aircraft;

determine a first distance between the first infrared camera and a starting point of a dent in the portion of the exterior surface of the aircraft using a first time-of-flight measurement;

determine a second distance between the first infrared camera and an ending point of the dent using a second time-of-flight measurement;

determine an angle in azimuth between a first direction associated with the first infrared camera being directed at the starting point of the dent and a second direction associated with the first infrared camera being directed at the ending point; and

calculate a width between the starting point of the dent and the ending point of the dent based on the first distance, the second distance, and the angle in azimuth;

use the second infrared camera to confirm the width between the starting point of the dent and the ending point of the dent; and

generate a three-dimensional model of the portion of the exterior surface of the aircraft based at least partially on the width.

3. The automated system of claim 1 or 2, wherein the camera module further comprises a motorized table configured to rotate in both azimuth and elevation, wherein the first infrared camera, the second infrared camera, and the visible light camera are attached to the motorized table, wherein the first infrared camera and the second infrared camera are separated by a fixed distance relative to one another, and wherein initiating the scan of the exterior surface of the aircraft comprises commanding the camera module to scan azimuthally at incremental changes of elevation angles.

4. The automated system of any one of claims 1 to 3, wherein the processor is further configured to:

plan the movement of the autonomous vehicle around the aircraft using a stored electronic map; and

verify the movement of the autonomous vehicle using detectable references positioned on a tarmac, a radar, a lidar, a global positioning system, or a combination thereof.

5. The automated system of any one of claims 1 to 4, wherein the autonomous vehicle is configured to use proximity range sensors to avoid obstacles during the movement of the autonomous vehicle around the aircraft.

6. The automated system of any one of claims 1 to 5, wherein the first infrared camera and the second infrared camera are each capable of infrared illumination using modulated continuous waves, wherein a modulated continuous wave associated with the first infrared camera is phase shifted to prevent interference with a modulated continuous wave associated with the second infrared camera, wherein

the first infrared camera and the second infrared camera are each capable of taking independent time-of-flight measurements using the modulated continuous waves, and wherein the independent time-of-flight measurements are used in generating the three-dimensional model of the portion of the exterior surface.

7. The automated system of any one of claims 1 to 6, wherein the processor is further configured to perform a differential measurement process using visible image data from the visible light camera to remove an ambient background light component from infrared image data received from the first infrared camera and the second infrared camera.

8. The automated system of claim 2, wherein, in response to the portion of the exterior surface of the aircraft being damaged, the processor is further configured to:

determine a third distance between the second infrared camera and the starting point of the dent using a third time-of-flight measurement;

determine a fourth distance between the second infrared camera and the ending point of the dent using a fourth time-of-flight measurement;

wherein the width between the starting point of the dent and the ending point of the dent is further calculated based on the third distance, the fourth distance, and a fifth distance between the first infrared camera and the second infrared camera.

9. The automated system of any one of claims 1 to 8, wherein the processor is further configured to produce an augmented reality image or video that superimposes dimensional parameters from the three-dimensional model onto an image or video of the portion of the exterior surface of the aircraft.

10. The automated system of any one of claims 1 to 9, wherein the processor is further configured to enhance visible image data generated by the visible light camera by using a grayscale conversion to remove discrepancies due to lighting conditions.

11. The automated system of any one of claims 1 to 10, wherein the processor is further configured to provide a live image or video from the visible light camera to a mobile device via a network connection.

12. The automated system of any one of claims 1 to 11, wherein the processor is further configured to provide the three-dimensional model to a mobile device for rendering via a network connection.

13. The automated system of any one of claims 1 to 12, wherein the processor is further configured to provide a damage assessment to a mobile device to assist a crew, an airline, or both in making flight decisions.

14. The automated system of any one of claims 1 to 13, further comprising a database, wherein the processor is further configured to provide the three-dimensional model to the database for use in comparisons to future three-dimensional models associated with the portion of the exterior surface, to provide findings related to damage to the exterior surface to the database for documentation, or both.

15. A method comprising:

moving an autonomous vehicle around an aircraft according to a predetermined path, wherein the autonomous vehicle comprises a vertically extendable arm, wherein a camera module is attached to a distal end of the vertically extendable arm, and wherein the camera module comprises a first infrared camera, a second infrared camera, and a visible light camera;

scanning an exterior surface of the aircraft using the first infrared camera, the second infrared camera, the visible light camera, or a combination thereof;

determining whether a portion of the exterior surface of the aircraft is damaged based on the scan; and

in response to the portion of the exterior surface of the aircraft being damaged:

initiating movement of the autonomous vehicle to position the first infrared camera and the second infrared camera so that a base line between the first infrared camera and the second infrared camera is parallel with the portion of the exterior surface of the aircraft;

rotating the first infrared camera and the second infrared camera so that the first infrared camera and the second infrared camera are iteratively directed at points running along a dent in the portion of the exterior surface of

the aircraft beginning at a starting point on a first side of the dent and ending at an ending point on a second side of the dent;

for each point of the points running along the dent, determining a first angle in azimuth associated with the first infrared camera and a second angle in azimuth associated with the second infrared camera; and

calculating distances between the base line and the points running along the dent using the first angle in azimuth and the second angle in azimuth for each point of the points, wherein the distances between the base line and the points running along the dent are used to generate a three-dimensional model of the portion of the exterior surface of the aircraft.

16. The method of claims 15, further comprising:

determining a first distance between the first infrared camera and a starting point of the dent in the portion of the exterior surface of the aircraft using a first time-of-flight measurement;

determining a second distance between the first infrared camera and an ending point of the dent using a second time-of-flight measurement; and

calculating a width between the starting point of the dent and the ending point of the dent based, at least in part, on the first distance and the second distance.

17. An apparatus comprising:

a camera module comprising:

a first infrared camera;

a second infrared camera; and

a visible light camera; and

an autonomous vehicle comprising a vertically extendable arm, wherein the camera module is attached to a distal end of the vertically extendable arm, wherein the autonomous vehicle is configured to move around an aircraft according to a predetermined path, and wherein the camera module is configured to scan of an exterior surface of the aircraft using the first infrared camera, the second infrared camera, the visible light camera, or a combination thereof, wherein, in response to a portion of the exterior surface of the aircraft being damaged, the autonomous vehicle is configured to:

position the first infrared camera and the second infrared camera so that a base line between the first infrared camera and the second infrared camera is parallel with the portion of the exterior surface of the aircraft, and

rotate the first infrared camera and the second infrared camera so that the first infrared camera and the second infrared camera are iteratively directed at points running along a dent in the portion of the exterior surface of the aircraft beginning at a starting point on a first side of the dent and ending at an ending point on a second side of the dent; and

a processor configured to:

for each point of the points running along the dent, determine a first angle in azimuth associated with the first infrared camera and a second angle in azimuth associated with the second infrared camera; and

calculate distances between the base line and the points running along the dent using the first angle in azimuth and the second angle in azimuth for each point of the points, wherein the distances between the base line and the points running along the dent are used to generate a three-dimensional model of the portion of the exterior surface of the aircraft.