

CLAIMS

What is claimed is:

1. A system for monitoring an aircraft, comprising:
 - 5 (a) at least one perceiving component for ascertaining a condition of an aircraft;
 - (b) wherein the perceiving component is situated at a location within the aircraft from which information may be ascertained;
 - (c) a communication mechanism connected with said perceiving component for transmitting and/or receiving communications over a communications network; and
 - 10 (d) a control mechanism connected with said perceiving component to receive information from the perceiving component and to communicate the information via the communication mechanism.
2. The system of claim 1, wherein the perceiving component comprises one or more of a camera, microphone and speaker.
- 15 3. The system of claim 2, wherein the perceiving component comprises at least a plurality of cameras.
4. The system of claim 2, wherein said cameras provide complete coverage of the aircraft cockpit area.
5. The system of claim 2, wherein said perceiving component comprises at least one
20 camera, wherein said computing component and arranged circuitry includes a programmable memory, and wherein said camera is regulated to record images.
6. The system of claim 5, wherein said system regulates the camera recording in response to a detectable event.

7. The system of claim 1, wherein the control mechanism comprises one or more of a computing component or control circuitry means.
8. The system of claim 1, wherein said control mechanism includes a computer or a programmable circuit means.
- 5 9. The system of claim 5, wherein a detection component is arranged with said control mechanism to operate said camera in response to a triggering function.
10. The system of claim 9, wherein said triggering function is generated by one or more sensors that provide information.
11. The system of claim 10, wherein said one or more sensors comprise one or more of a
10 barometric pressure sensor, an accelerometer sensor, an altitude sensor, or combinations thereof.
12. The system of claim 11, wherein a threshold value or threshold change in a value for one or more conditions sensed by said one or more sensors are designated, and wherein information from the sensors is monitored and processed to determine whether a threshold
15 value or change in value has been met, and wherein when the threshold value or change in value has been met, said camera is actuated to record images.
13. The system of claim 1, wherein said system is configured to transmit video and audio in a compressed format.
14. The system of claim 1, including a housing for housing one or more of the
20 components and mechanisms.
15. The system of claim 1, including a housing, and wherein said perceiving component, said communication mechanism and said control mechanism are secured within said housing.
16. The system of claim 15, wherein said perceiving component comprises a camera, and one or more of a speaker, and wherein said perceiving component is disposed within one or
25 more cockpit components.

17. The system of claim 1,
wherein said system comprises an aircraft portion and a remote portion;
wherein said aircraft portion includes:
- said at least one perceiving component;
5 - said communication mechanism; and
- said control mechanism;
wherein said remote portion comprises a ground operations portion configured to
receive transmissions that include a monitored condition of the aircraft.
18. The system of claim 1, wherein said ground operation portion comprises a receiving
10 component configured to receive communications transmitted from the communication
mechanism of the aircraft portion.
19. The system of claim 18, wherein said aircraft portion communicates with said ground
portion via a satellite communication link.
20. The system of claim 19, wherein said aircraft portion communication mechanism
15 includes a satellite radio transceiver and an antenna for radiating signals for communicating
via said satellite communications link with said ground portion.
21. The system of claim 20, wherein said ground portion comprises a satellite
communications receiving antenna.
- 20 22. The system of claim 21, wherein said ground portion satellite communications
receiving antenna is connected to provide information communicated from the aircraft
portion of the system to a ground operation system.
23. The system of claim 22, wherein said ground operation system includes a computer
configured to store and process the communicated information.

24. The system of claim 23, wherein the ground operations system computer includes a processing component and software configured with instructions to instruct the processing component to analyze the information communicated from the aircraft portion by comparing the information to one or more threshold or predetermined values.

5 25. The system of claim 24, wherein said system is configured to generate a response when a threshold value or predetermined value is detected.

26. The system of claim 25, wherein said response comprises a communication to said aircraft cockpit.

27. The system of claim 26, wherein said response is communicated through one or more
10 components of the aircraft portion of the system.

28. The system of claim 27, wherein said response is communicated via said ground portion satellite transceiver through a satellite link to said aircraft portion transceiver through said aircraft portion antenna.

29. The system of claim 28, wherein the control mechanism comprises one or more of a
15 computing component or control circuitry means; wherein said response is communicated to said computing component or control circuitry means.

30. The system of claim 29, wherein said computing component or control circuitry means of said aircraft portion is configured to process said response received from said ground operations system and issue an alert via one or more components of said aircraft
20 portion.

31. The system of claim 24, wherein said ground operations system comprises an artificial intelligence system configured to detect conditions of the aircraft from the communications providing information obtained by the perceiving component of the aircraft portion of the system.

32. The system of claim 17, wherein said monitored condition includes information about activity taking place in the aircraft cockpit.
33. The system of claim 32, wherein said cockpit activity information includes images, audio or both of the cockpit area.
- 5 34. The system of claim 32, wherein the monitored condition comprises images of cockpit instrumentation.
35. The system of claim 34, wherein said control mechanism is configured to obtain images of cockpit instruments at predetermined intervals during the aircraft operation, and wherein said images are transmitted to said ground operations portion.
- 10 36. The system of claim 1, wherein said aircraft portion perceiving component is operable independently from other components of the aircraft.
37. A system for providing distributed communications of a monitored aircraft, comprising:
- a) an aircraft monitoring system comprising at least one perceiving component, a
 - 15 computer or control circuitry, and a transceiver; and
 - b) a ground operation system configured to receive communications transmitted from the aircraft monitoring system.
38. The system of claim 37, wherein said ground operation system stores information ascertained and communicated by the perceiving component.
- 20 39. The system of claim 38, wherein the ground system is configured to process the information communicated by the aircraft monitoring system, and provide alerts to update subscribers.
40. The system of claim 39, wherein said system is configured to make updates available from the information received from the perceiving component, and wherein the system is

configured to regulate access to the information or updates based on the information by limiting the information to authorized subscribers.

41. A system for managing a subscription service that provides information about aircraft activity, comprising:

- 5 a) an aircraft portion that includes one or more perceiving components for ascertaining information generated from activity taking place within the aircraft or movements of the aircraft;
- b) a communications component provided in the aircraft and connected with the perceiving components to communicate information,
- 10 c) a ground portion configured to receive information ascertained with the perceiving components and regulate access to the information as a subscription;
- d) wherein said ground portion includes a computer configured with instructions to process the information and store the information received from the aircraft portion;
- e) identifying a subscriber;
- 15 f) associating a subscriber with an access provision; and
- g) providing access to aircraft information to a subscriber based on the subscriber access provision.

42. The system of claim 41, wherein the subscriber access provision is based on the airline organization to which an aircraft belongs.

- 20 43. The system of claim 41, wherein the system includes an option for a subscriber to designate an aircraft, or category in which one or more aircrafts are classified; and wherein the system generates alerts, including a subscriber alert that is communicated to a subscriber of a designated aircraft or category to which one or more aircrafts are classified, based on a trigger generated from the processing of information communicated from the aircraft portion.

44. The system of claim 41, wherein a subscriber may access aircraft information for a flight made by that aircraft at a time after which the aircraft has made the flight.

45. The system of claim 41, wherein a subscriber may access aircraft information for a flight made by that aircraft at a time during which the aircraft is in flight.

5 46. The system of claim 41, wherein a subscriber may access aircraft information for a flight made by that aircraft at a time after which the aircraft has made the flight; and wherein a subscriber may access aircraft information for a flight made by that aircraft at a time during which the aircraft is in flight.

47. The system of claim 46, wherein said communications component provided in the
10 aircraft and connected with one or more of the perceiving components communicates information through a satellite communication transceiver and an antenna that broadcasts communication signals from the aircraft portion resident on the aircraft to a ground portion computer via a satellite link.

48. The system of claim 47, wherein the ground portion is connected to a network and
15 wherein subscribers access information from the ground portion through a network.

49. The system of claim 48, wherein each subscriber has an account; wherein each aircraft associated with a subscriber designation is associated with the subscriber account, and wherein each subscriber account is configured to receive information about the respective subscriber designated aircrafts.

20 50. In an aircraft having a cockpit with cockpit components comprising at least one or more of instruments, panels, buttons, switches, actuators, doors, hardware, seating, a floor, and walls, the improvement comprising a system for monitoring an aircraft that includes:

- (a) at least one perceiving component for ascertaining a condition of an aircraft;
- (b) a communication mechanism; and

(c) a control mechanism connected with said perceiving component to receive information from the perceiving component and to communicate the information via the communication mechanism;

(d) wherein said perceiving component is disposed in at least one of said cockpit
5 components;

(e) wherein said communication mechanism is connected to said perceiving component;

(f) wherein said control mechanism controls the information obtained by said perceiving component and regulates the transmission of said information from the aircraft to
10 a remote receiver.

51. The aircraft of claim 50, wherein said system for monitoring further comprises a ground operations portion, and wherein said ground operations portion includes a remote receiver for receiving transmissions from said communication mechanism.

52. The aircraft of claim 51, the system being configured to communicate with the ground
15 operations system via a satellite communications linkage.

53. The aircraft of claim 52, having an instrument panel with one or more instruments thereon, and wherein said information comprises images of said one or more instruments of the aircraft instrument panel.

54. An aircraft including the system of claim 1, wherein the perceiving component
20 comprises at least one camera situated in the cockpit.

55. The aircraft of claim 54, wherein said camera includes a capture element that is installed within an aircraft cockpit component, and wherein the capture element is disguised to integrate with the cockpit component.

56. The aircraft of claim 54, wherein said system components are separate from the
25 aircraft components.

57. The aircraft of claim 56, wherein said system receives power from the aircraft.

58. The aircraft of claim 57, wherein said system includes a power source, and wherein said power source is charged by said aircraft.

59. The aircraft of claim 54, wherein said system communication mechanism includes a
5 transceiver and an antenna that radiate signals comprising information from the perceiving component.

60. The aircraft of claim 59, wherein said transceiver and an antenna radiate signals to a remotely situated computing component on the ground through a satellite communications link.

10 61. The aircraft of claim 54, wherein said system is configured to communicate information from said aircraft via a satellite communications link.