CLAIMS

[Claim 1]. A smart cage module for a cage trap comprising;

a microprocessor-based control unit;

at least one sensor for sensing a parameter associated with the cage trap and providing data relating to that parameter to the control unit;

at least one actuator controlled by the control unit for mechanically actuating a component of the cage trap; and

a communication module for allowing data transmission from the control unit to a cloud-based smart cage application, and for allowing control signals from the smart cage application to be received by the control unit,

wherein the at least one sensor comprises a motion detection device for detecting motion within and/or surrounding the cage trap,

wherein the at least one sensor comprises an imaging unit for viewing an interior and/or surrounding area of the cage trap,

wherein the imaging unit can be activated when the motion detection device detects said motion within the cage trap to visually determine if an animal is trapped therein, and

wherein the at least one actuator can activate a food and/or water dispenser within the cage trap when the animal is determined to be trapped therein.

[Claim 2]. A smart cage module according to claim 1, wherein the cage trap parameter comprises data associated with an animal within the cage trap.

[Claim 3]. A smart cage module according to claim 1 or 2, wherein the cage trap parameter comprises data associated with the open and/or closed status of a gate of the cage trap.

[Claim 4]. A smart cage module according to any one of the preceding claims, wherein the at least one sensor comprises a magnetic sensor for sensing closure of a gate of the cage trap

[Claim 5]. A smart cage module according to any one of the preceding claims, wherein the at least one actuator comprises a linear actuator for activating closure and/or opening of the cage trap gate.

[Claim 6]. A smart cage module according to any one of the preceding claims, wherein the smart cage module further comprises a global navigation satellite system (GNSS) for tracking a geolocation of the smart cage module.

[Claim 7]. A smart cage module according to any one of the preceding claims, wherein the smart cage module further comprises a beacon alert light.

[Claim 8]. A smart cage management system comprising:

a cloud-based web server for communicating with a plurality of smart cage modules respectively mounted on an associated cage trap, each smart cage module comprising a microprocessor based control unit, at least one sensor for sensing a parameter associated with the cage trap and providing data relating to that parameter to the control unit, at least one actuator controlled by the control unit for mechanically actuating a component of the cage; and a communication module for allowing data transmission from the control unit to a cloud-based smart cage application, and for allowing control signals from the smart cage application to be received by the control unit; and

a cloud-base web server for receiving and storing data from each smart cage module;

wherein the smart cage application is accessible from a compatible end user module for displaying the collected data and for allowing the monitoring and control of each said smart cage module;

wherein the at least one sensor comprises a motion detection device for detecting motion within and/or surrounding the cage trap,

wherein the at least one sensor comprises an imaging unit for viewing an interior and/or surrounding area of the cage trap,

wherein the imaging unit can be activated when the motion detection device detects said motion to visually determine if an animal is trapped within the cage trap, and

wherein the at least one actuator can activate a food and/or water dispenser within the cage trap when the animal is determined to be trapped therein.

[Claim 9]. A smart cage management system according to claim 8, wherein the cage trap parameter comprises data associated with an animal within the cage trap.

[Claim 10]. A smart cage management system according to claim 8 or 9, wherein the cage trap parameter comprises data associated with the open and/or closed status of a gate of the cage trap.

[Claim 11]. A smart cage management system according to any one of claims 8 to 10, wherein the cage module is controlled to allow for the opening or closing of a gate of the cage trap.

[Claim 12]. A method of managing a plurality of cage traps comprising:

receiving data from a plurality of smart cage modules, each module being installed on an associated cage trap and comprising a microprocessor based control unit, at least one sensor for sensing a parameter associated with the cage trap and providing data relating to that parameter to the control unit, at least one actuator controlled by the control unit for mechanically actuating a component of the cage; and a communication module for allowing data transmission from the control unit to a cloud-based smart cage application, and for allowing control signals from the smart cage application to be received by the control unit; and

providing control signals to a said smart cage module to thereby control a component of the associated cage trap,

wherein the at least one sensor comprises a motion detection device for detecting motion within and/or surrounding the cage trap,

wherein the at least one sensor comprises an imaging unit for viewing an interior and/or surrounding area of the cage trap,

wherein the imaging unit can be activated when the motion detection device detects said motion to visually determine if an animal is trapped within the cage trap, and

wherein the at least one actuator can activate a food and/or water dispenser within the cage trap when the animal is determined to be trapped therein.

[Claim 13]. A method of managing a plurality of cage traps according to claim 12, wherein the cage trap parameter comprises data associated with an animal within the cage trap.

[Claim 14]. A method of managing a plurality of cage traps according to claim 12 or 13, wherein the cage trap parameter comprises data associated with the open and/or closed status of a gate of the cage trap.

[Claim 15]. A method of managing a plurality of cage traps according to any one of claims 12 to 14, wherein the smart cage module is controlled to allow for the opening or closing of a gate of the cage trap.