

CLAIMS

1. A detection apparatus (10), for identifying the presence of a target warm blooded animal (300) in a detection zone (20), comprises:
 - 5 i) a sensor (30) which when triggered wakes (42) up a microcontroller unit (MCU) (40) powered by a battery (150);
 - ii) a thermal imaging camera (50), positioned so as to detect the warm blooded animal (300) in the detection zone (20);
 - 10 iii) a means (50) for capturing temperature (70) and location (80) and displaying it as a plurality of co-ordinates (90) on an array (100);
 - iv) a computing means (110) which interrogates at least one of temperature intensity (72) and a location area (82), and based on an algorithm (112) and machine learning records (120) or rejects (130) an indicator signal (140) with an associated location (80) and stores data simply as a product which
15 correlates to a simple quantitative or qualitative figure, such as, a simple numerical value associated with a co-ordinate; and
 - v) a signaller (190) for sending data (180) indicating the presence of a target animal (300).
2. A detection apparatus (10) as claimed in claim 1 which can discriminate animal
20 size.
3. A detection apparatus as claimed in claim 1 or 2 which can determine direction of travel of the animal.
4. A detection apparatus as claimed in any of the preceding claims in which the thermal imaging camera is positioned above the detection zone.
- 25 5. A detection apparatus as claimed in any of the proceeding claims wherein the thermal imaging camera has a field of view of at least 90 degrees.
6. A detection apparatus as claimed in claim 5 wherein the thermal imaging camera has a field of view of about 110 degrees.
7. A detection apparatus as claimed in any of the proceeding claims wherein the
30 signaller (190) is configured to send data (180) in real time.
8. A detection apparatus as claimed in any of the proceeding claims which is integrated into an internet enabled pest control management system.

9. A detection apparatus as claimed in any of the proceeding claims comprising a housing (200) which seals the battery (150), microcontroller (40) and signaller (190).
10. A detection apparatus as claimed in any of the preceding claims further comprising
5 a distance sensor (60) for calibrating a vertical distance (d) between the thermal imaging camera (50) and a point (22) on the detection zone (20)
11. A method of detecting a warm-blooded animal comprising the steps of:
- i) Setting up a detection apparatus (10) above a detection zone (20);
 - ii) Detecting the presence of the animal using a motion sensor which triggers the
10 waking (42) of a microcontroller unit (MCU) (40);
 - iii) Using a thermal imaging camera (50) to identify the presence of the animal and using temperature (70) and location (80) sensing to identify a target animal; and
 - iv) Based on data captured send data (180), via a signaller (190), to a user to inform the user of the presence of the target animal
- 15 wherein the apparatus utilises a means (50) for capturing temperature (70) and location (80) and displays it as a plurality of co-ordinates (90) on an array (100); interrogates at least one of temperature intensity (72) and location area (82) and based on an algorithm (112) and machine learning records (120) or rejects (130) a signal (140) with an associated location (80) and stores data simply as
20 a product which correlates to a simple quantitative or qualitative figure, such as, a simple numerical value associated with a co-ordinate.
12. A method as claimed in claim 11 which uses a sensor to calibrate the apparatus with respect to a distance between the thermal imaging camera and a point (22) on the detection zone (20).
- 25 13. A method as claimed in any of claims 11 or 12 in which a motion sensor is used to turn on the microprocessor unit to control battery life.
14. A method as claimed in any of claims 11 to 13 which includes an operation flow substantially as illustrated in Fig 5.