CLAIMS:

1. An Internet of Things (IoT) based integrated device (101) to monitor and control one or more events in an environment (100), the integrated device (101) comprises: a housing comprising:

one or more replaceable sensors (103) including a smoke detection sensor, a fire detection sensor, a Passive Infrared (PIR) sensor, air condition controlling module, a temperature sensor, a humidity sensor, a noise sensor, a door sensor, and an occupancy detection sensor, wherein at least one of the smoke detection sensor, the fire detection sensor, the PIR sensor, the air condition controlling module, the temperature sensor, the humidity sensor, the noise sensor, the door sensor, and the occupancy detection sensor detects the one or more events in the environment (100);

at least one programmable image or video capturing device (105), interfaced with at least one of the smoke detection sensor, the fire detection sensor, the PIR sensor, the air condition controlling module, the temperature sensor, the humidity sensor, the noise sensor, the door sensor, and the occupancy detection sensor, to capture one or more images and videos of the environment (100) in real-time, wherein the at least one programmable image or video capturing device is activated to capture the one or more images and videos of the environment upon detection of the one or more events by at least one of the smoke detection sensor, the fire detection sensor, the PIR sensor, the air condition controlling module, the temperature sensor, the humidity sensor, the noise sensor, the door sensor, and the occupancy detection sensor;

a processor (109) communicatively connected to each of the smoke detection sensor, the fire detection sensor, the PIR sensor, the air condition controlling module, the temperature sensor, the humidity sensor, the noise sensor, the door sensor, and the occupancy detection sensor and the at least one programmable image or video capturing device (105); and

a memory, communicatively coupled to the processor (109), wherein the memory stores processor-executable instructions, which on execution, cause the processor (109) to:

receive sensor data (103) and data related to the one or more images and videos (106) related to the one or more events from at least one of the smoke detection sensor, the fire detection sensor, the PIR sensor, the air condition controlling module, the temperature sensor, the humidity sensor, the noise sensor, the door sensor, and the occupancy detection sensor and the at least one programmable image or video capturing device (105) respectively;

correlate the sensor data (103) with the data related to the one or more images and videos (106) using one or more correlation rules to validate occurrence of the one or more events; and

transmit information related to the one or more events to at least one of an edge node (115A), a cloud server (115B), one or more user devices (115C), or one or more sensor nodes associated with the integrated device (101), upon validation of occurrence of the one or more events.

2. The integrated device (101) as claimed in claim 1, wherein the processor (109) uses the data related to the one or more images and videos (106) for validating the occurrence of the one or more events.

3. The integrated device (101) as claimed in claim 1, wherein the one or more replaceable sensors (103) further includes a motion sensor.

4. The integrated device (101) as claimed in claim 1, further comprising a notification unit (112) associated with the processor (109) to notify the occurrence of the one or more events to a user associated with the environment (100) through the one or more user devices (115C) associated with the user.

5. The integrated device (101) as claimed in claim 4, wherein the notification unit (112) comprises at least one of one or more programmable Light Emitting Diodes (LEDs) indicators (211), an alarm or a speaker (213).

6. The integrated device (101) as claimed in claim 1, further comprising a signal processing unit to process the sensor data (103) and the data related to the one or more images and videos (106) before transmitting the sensor data (103) and the data related to the one or more images and videos (106) to the processor (109).

7. The integrated device (101) as claimed in claim 1, wherein the at least one programmable image or video capturing device (105) triggers the one or more replaceable sensors (103) to capture

sensor data (103) related to the one or more events upon capturing the one or more images and videos (106) of the one or more events.

8. The integrated device (101) as claimed in claim 1, wherein the one or more correlation rules are at least one of one or more preconfigured correlation rules obtained from the cloud server (115B) and the edge node (115A) or one or more dynamic correlation rules obtained in real-time based on self-learning from historical correlation data.

9. The integrated device (101) as claimed in claims 1 and 6, further comprising a co-processor (107), communicatively coupled to the processor (109), the signal processing unit and each of the one or more replaceable sensors (103), to interface each of one or more replaceable sensors (103) with the processor (109) and the memory, and to analyze the digital information obtained from the signal processing unit to detect occurrence of the one or more events.

10. The integrated device (101) as claimed in claim 1, wherein the integrated device is configured as an IoT gateway to combine and transmit the sensor data (103) and the data related to the one or more images and videos (106) to the cloud server (115B).

11. The integrated device (101) as claimed in claim 1, wherein the integrated device is configured as an IoT gateway to facilitate one or more detached sensors and one or more detached programmable image or video capturing device (105) to transmit the sensor data (103) and the data related to the one or more images and videos (106) to the cloud server (115B) transparently.

12. The integrated device (101) as claimed in claim 1, further comprising an image and video recorder (203) and an audio recorder (205) to record one or more images, videos, and audio of the environment (100) and to transmit the recorded one or more images, videos and audio to the processor (109).

13. The integrated device (101) as claimed in claim 1, further comprising a data recorder to record and store the sensor data (103), the data related to the one or more images and videos (106) and data related to audio on the memory when no communication interfaces are available in the

environment (100) or to transmit the recorded sensor data (103) and the data related to the one or more images and videos (106) to the cloud server (115B) when a communication interface is available in the environment (100).

14. The integrated device (101) as claimed in claim 1, further comprising a communication unit (113) to transmit information related to the one or more events to at least one of the edge node (115A), the cloud server (115B), or the one or more user devices (115C) associated with a user associated with the environment (100).

15. The integrated device (101) as claimed in claim 1, further comprising a low power wireless transceiver to receive and transmit data between at least one of the edge node (115A), one or more detached sensors, the cloud server (115B), the one or more user devices (115C), and each of the one or more replaceable sensors (103).

16. The integrated device (101) as claimed in claim 1, further comprising a power source (201) to power the integrated device.

17. The integrated device (101) as claimed in claim 17, wherein the power source (201) is at least one of a rechargeable battery, a power generator, or a replaceable battery.

18. The integrated device (101) as claimed in claim 1, wherein the integrated device is deployed in one or more forms selected from at least one of a roof mounted form, wall mounted form, or a pole mounted form in at least one of an indoor environment (100) or an outdoor environment (100).

19. The integrated device (101) as claimed in claim 1, further comprising an Infrared (IR) controller to communicate and control one or more electronic devices deployed in the environment (100).

20. A method for monitoring and controlling one or more events in an environment (100), the method comprising providing an integrated device (101) comprising:

a housing comprising:

a smoke detection sensor, a fire detection sensor, a Passive Infrared (PIR) sensor, air condition controlling module, a temperature sensor, a humidity sensor, a noise sensor, a door sensor, and an occupancy detection sensor, wherein at least one of the smoke detection sensor, the fire detection sensor, the PIR sensor, the air condition controlling module, the temperature sensor, the humidity sensor, the noise sensor, the door sensor, and the occupancy detection sensor detects the one or more events in the environment (100);

at least one programmable image or video capturing device (105), interfaced with at least one of the smoke detection sensor, the fire detection sensor, the PIR sensor, the air condition controlling module, the temperature sensor, the humidity sensor, the noise sensor, the door sensor, and the occupancy detection sensor, to capture one or more images and videos of the environment (100) in real-time, wherein the at least one programmable image or video capturing device is activated to capture the one or more images and videos of the environment upon detection of the one or more events by at least one of the smoke detection sensor, the fire detection sensor, the PIR sensor, the air condition controlling module, the temperature sensor, the humidity sensor, the noise sensor, the door sensor, and the occupancy detection sensor;

a processor (109) communicatively connected to each of the smoke detection sensor, the fire detection sensor, the PIR sensor, the air condition controlling module, the temperature sensor, the humidity sensor, the noise sensor, the door sensor, and the occupancy detection sensor and the at least one programmable image or video capturing device (105); and

a memory, communicatively coupled to the processor (109), wherein the memory stores processor-executable instructions, which on execution, cause the processor (109) to:

receive sensor data (103) and data related to the one or more images and videos (106) related to the one or more events from at least one of the smoke detection sensor, the fire detection sensor, the PIR sensor, the air condition controlling module, the temperature sensor, the humidity sensor, the noise sensor, the door sensor, and the occupancy detection sensor and the at least one programmable image or video capturing device (105), respectively;

correlate the sensor data (103) with the data related to the one or more images and videos (106) using one or more correlation rules to validate occurrence of the one or more events; and

transmit information related to the one or more events to at least one of an edge node (115A), a cloud server (115B), one or more user devices (115C), or one or more sensor nodes associated with the integrated device (101), upon validation of occurrence of the one or more events;

receiving, by a processor (109) of the integrated device (101), sensor data (103) and data related to the one or more images and videos (106) related to the one or more events from one or more of the smoke detection sensor, the fire detection sensor, the PIR sensor, the air condition controlling module, the temperature sensor, the humidity sensor, the noise sensor, the door sensor, and the occupancy detection sensor and at least one programmable image or video capturing device (105), respectively,

wherein the smoke detection sensor, the fire detection sensor, the PIR sensor, the air condition controlling module, the temperature sensor, the humidity sensor, the noise sensor, the door sensor, and the occupancy detection sensor are configured to detect the one or more events in the environment (100),

wherein at least one programmable image or video capturing device (105) is interfaced with one or more of the smoke detection sensor, the fire detection sensor, the PIR sensor, the air condition controlling module, the temperature sensor, the humidity sensor, the noise sensor, the door sensor, and the occupancy detection sensor and is configured to capture one or more images and videos of the environment (100) in real-time, wherein the at least one programmable image or video capturing device is activated to capture the one or more images and videos of the environment upon detection of the one or more events by the one or more replaceable sensors;

correlating, by the processor (109), the sensor data (103) with the data related to the one or more images and videos (106) using one or more correlation rules for validating occurrence of the one or more events; and

transmitting, by the processor (109), information related to the one or more events validated to at least one of an edge node (115A), cloud server (115B), the one or more user devices (115C), or one or more sensor nodes associated with the integrated device (101), upon validation of occurrence of the one or more events.

21. The method as claimed in claim 20, wherein the occurrence of the one or more events is validated using the data related to the one or more images and videos (106).

22. The method as claimed in claim 20, wherein the integrated device further includes a motion sensor.

23. The method as claimed in claim 20, further comprising notifying the occurrence of the one or more events to a user associated with the environment (100) through the one or more user devices (115C) associated with the user, using a notification unit (112) associated with the integrated device (101).

24. The method as claimed in claim 23, wherein the notification unit (112) comprises at least one of one or more programmable Light Emitting Diodes (LEDs) indicators (211), an alarm or a speaker (213).

25. The method as claimed in claim 20, further comprising processing the sensor data (103) and the data related to the one or more images and videos (106) using a signal processing unit, associated with the integrated device (101), before transmitting the sensor data (103) and the data related to the one or more images and videos (106) to the processor (109).

26. The method as claimed in claim 20, wherein one or more of the smoke detection sensor, fire detection sensor, PIR sensor, air condition controlling module, temperature sensor, humidity sensor, noise sensor, door sensor and occupancy detection sensor are triggered by the at least one programmable image or video capturing device for capturing sensor data related to the one or more events upon capturing the one or more images and videos of the one or more events.

27. The method as claimed in claim 20, wherein the one or more correlation rules are at least one of one or more preconfigured correlation rules obtained from the cloud server (115B), the edge node (115A) or the one or more user devices (115C), or one or more dynamic correlation rules obtained in real-time based on self-learning from historical correlation data.

28. The method as claimed in claim 20, further comprising interfacing each of the smoke detection sensor, fire detection sensor, PIR sensor, air condition controlling module, temperature sensor, humidity sensor, noise sensor, door sensor and occupancy detection sensor with a processor (109) and a memory configured in the integrated device (101), and analyzing information obtained from the signal processing unit using a co-processor (107) communicatively coupled to the processor (109), a signal processing unit, and each of the sensors (103).

29. The method as claimed in claim 20, further comprising configuring the integrated device (101) as an IoT gateway for combining and transmitting the sensor data (103) and the data related to the one or more images and videos (106) to the cloud server (115B).

30. The method as claimed in claim 20, further comprising configuring the integrated device (101) as an IoT gateway for facilitating one or more detached sensors and one or more detached programmable image or video capturing device (105) in transmitting the sensor data (103) and the data related to the one or more images and videos (106) to the cloud server (115B).

31. The method as claimed in claim 20, further comprising recording one or more images and videos of the environment (100) and transmitting the recorded one or more images and videos to the processor (109) using an image and video recorder (203) or an audio recorder (205) associated with the integrated device (101).

32. The method as claimed in claim 20, further comprising recording the sensor data (103) and the data related to the one or more images and videos (106) using a data recorder associated with the integrated device (101), wherein the data recorder comprises:

storing the recorded sensor data (103), the data related to the one or more images and videos (106) and data related to audio on a memory configured in the integrated device (101) when no communication interfaces are available in the environment (100); or

transmitting the recorded sensor data (103) and the data related to the one or more images and videos (106) to the cloud server (115B) when a communication interface is available in the environment (100).

33. The method as claimed in claim 20, further comprising transmitting information related to the one or more events to at least one of the edge node (115A), the cloud server (115B), or one or more user devices (115C) associated with a user associated with the environment (100), using a communication unit (113) configured in the integrated device (101).

34. The method as claimed in claim 20, further comprising receiving and transmitting data between at least one of the edge node (115A), the cloud server (115B), one or more detached sensors, the one or more user devices (115C), and each of the one or more replaceable sensors (103) using a low power wireless transceiver configured in the integrated device (101).

35. The method as claimed in claim 20, wherein the integrated device (101) is powered using a power source (201) comprising at least one of a rechargeable battery, a power generator, an external power source or a replaceable battery.

36. The method as claimed in claim 20, wherein the integrated device (101) is deployed in one or more forms selected from at least one of a roof mounted form, wall mounted form, or a pole mounted form in at least one of an indoor environment (100) or an outdoor environment (100).