Claims

1. A sensor system for a container, the system comprising:
an emitter of a detection radiation into the container;
a receiver of reflected radiation arranged to produce a signal based on received reflected radiation, wherein the received reflected radiation is produced by reflection or similar of contents of the container;
a processor for interpreting the signal and preparing a transmission signal;
a transmitter of the transmission signal;
wherein the emitter, receiver, processor and transmitter are housed within a package that is integrally formed in a hinged lid of the container.

2. The system according to claim 1, wherein the system further comprises a power source for powering at least one of the emitter, receiver, processor and transmitter; wherein the power source is also housed in the package.

3. The system according to claim 1, wherein the system further comprises another sensor inside the package for detecting a property of the lid, wherein the property comprises acceleration and/or orientation and/or movement.

4. The system according to claim 2 or 3, wherein the package comprises a heat shield for shielding one or more of the emitter, receiver, processor, transmitter and power source from the heat of plastic moulding the package into the lid.

5. The system according to any one of claims 1 to 4, wherein the emitter is covered by a layer, and the system is configured for the emitter to emit radiation that passes through the layer.

6. The system according to claims1, wherein the system is sealed in the lid of the container.

7. The system according to any one of claims 1 to 6, wherein the emitter is capable of emitting radar and/or is capable of emitting a plurality of types of radiation one and/or is capable of emitting laser for a LIDAR detector.

8. The system according to any one of claims 1 to 7, wherein the interpretation is to determine the level of the contents in the container and the type of contents of the container.

9. The system according to claim 8, wherein the processor is configured to determine the type of material inserted into the container based on the reflected radio frequency radiation.

10. The system according to claim 8, wherein the processor is configured to determine the density of the material of a deposited article and/or the thickness and/or characteristic (spectral) reflective properties based on the received reflected radiation.

11. The system according to claim 10, wherein the scanning of the inside of the container is such that the shape or a dimension of an article inserted can be determined.

12. The system according to any one of claims 1 to 11 further comprising:
a processor for using a model or similar to determine an event has occurred in relation to the container.

13. The system according to claim 12, wherein the model is configured to determine the type of material inserted into the container.

14. The system according to claim 12, wherein the model comprises an AI algorithm that learns one or more of: household waste disposal habits, street rubbish disposal habits, event disposal habits.

15. A method comprising:
emitting radio frequency detection radiation into a container;
receiving a reflection of the emitted radiation from contents of the container;
interpreting the received reflection to determine the contents of the container by detecting the type of material of an article inserted/deposited into the container;
transmitting a signal representing the interpreted received reflection.