CLAIMS

1. An apparatus for detecting an occupancy of an equipment by a person, the apparatus comprising:

a memory having stored therein a status of the equipment as either occupied or unoccupied by the person, and a predetermined acceleration limit value;

an accelerometer unit in communication with the memory, the accelerometer unit in operation, continuously measuring an acceleration value of the equipment at each of a plurality of discrete time intervals, the accelerometer unit accessing the acceleration limit value from the memory and comparing each acceleration value thereto, the accelerometer unit generating a movement signal indicative of a movement of the equipment upon a consecutive number N of the acceleration values being greater than or equal to the acceleration limit value;

a processor in communication with the accelerometer unit and with the memory, the processor operable between an active mode upon receiving the movement signal from the accelerometer unit and an inactive mode, the processor in the active mode accessing the status of the equipment from the memory and emitting an occupied signal if the previous status of the equipment is unoccupied; and

a power source supplying electrical power to the accelerometer unit and to the processor.

2. The apparatus of claim 1, wherein the processor is operable by default in the inactive mode.

3. The apparatus of claim 1 or 2, wherein the processor in the active mode accesses the status of the equipment from the memory and initiates a countdown if the status of the equipment is occupied, and then returns to the inactive mode.

4. The apparatus of claim 3, wherein the processor enters the active mode and reinitiates the countdown upon receiving at least one movement signal before the countdown has reached zero, and then returns to the inactive mode.

5. The apparatus of claim 3, wherein the processor enters the active mode and emits an unoccupied signal if the processor does not receive another movement signal from the accelerometer unit for a duration greater than the countdown.

6. The apparatus of claim 5, wherein the processor stores in the memory the status of the equipment as unoccupied upon emitting the unoccupied signal.

7. The apparatus of any one of claims 1 to 6, wherein the accelerometer unit measures each acceleration value without communicating with the processor.

8. The apparatus of any one of claims 1 to 7, wherein the processor stores in the memory the status of the equipment as occupied upon emitting the occupied signal.

9. The apparatus of any one of claims 1 to 8, wherein the processor returns to the inactive mode upon emitting the occupied signal or the unoccupied signal.

10. The apparatus of any one of claims 1 to 9, wherein the accelerometer unit measures at least one acceleration value having an absolute value greater than zero upon the person sitting on, or getting up from, the equipment.

11. The apparatus of claim 1, wherein the processor enters the active mode and accesses the status of the equipment from the memory, the processor initiating a test countdown if the status of the equipment is occupied and returning to the inactive mode, the processor emitting an unoccupied signal if the processor does not receive another movement signal from the accelerometer unit for a duration greater than the test countdown.

12. The apparatus of any one of claims 1 to 11, wherein the accelerometer unit measures the acceleration values at a frequency between about 1 Hz and about 5,000 Hz.

13. The apparatus of any one of claims 1 to 12, wherein the predetermined acceleration limit value is between about $1x10^{-3}$ and about $2x10^{-2}$ acceleration due to gravity.

14. The apparatus of any one of claims 1 to 13, wherein the consecutive number N of the acceleration values is between at least 2 and about 300.

15. A system for detecting an occupancy of a plurality of equipment by people, comprising:

at least one apparatus each mountable to a corresponding equipment, comprising:

a memory having stored therein a status of said equipment as either occupied or unoccupied by a person, and a predetermined acceleration limit value;

an accelerometer unit in operation measuring an acceleration value of said equipment at each of a plurality of discrete time intervals, the accelerometer unit accessing the acceleration limit value from the memory and comparing each acceleration value thereto, the accelerometer unit continuously measuring acceleration and generating a movement signal indicative of a movement of said equipment upon a consecutive number N of the acceleration values being greater than or equal to the acceleration limit value;

a processor in communication with the accelerometer unit and with the memory, the processor operable between an active mode upon receiving the movement signal from the accelerometer unit and an inactive mode, the processor in the active mode accessing the status of said equipment from the memory and emitting an occupied signal if the status of said equipment is unoccupied; and

a power source supplying electrical power to the accelerometer unit and to the processor;

a system memory having stored therein the status of each of the equipment as either occupied or unoccupied by a corresponding person;

a system processor in communication with each apparatus to receive the occupied signal and an unoccupied signal therefrom; and

at least one application stored in the system memory, and executable by the system processor to:

receive the occupied and unoccupied signals from each apparatus;

modify the system memory to change the status of each of the equipment as a result of the occupied or unoccupied signal received from a corresponding apparatus; and

output equipment occupancy data indicative of the changed status of each of the equipment stored in the modified system memory.

16. The system of claim 15, wherein the equipment occupancy data is a graphical representation of the changed status of each of the equipment.

17. The system of claim 16, further comprising an output device in communication with the system processor, the output device displaying the graphical representation of the changed status of each of the equipment.

18. A method for detecting an occupancy of an equipment by a person, comprising:

measuring an acceleration of at least a part of the equipment at each of a plurality of discrete time intervals with an accelerometer unit;

comparing in the accelerometer unit the measured accelerations to a predetermined acceleration limit value;

emitting a movement signal with the accelerometer unit to a processor upon a consecutive number N of the measured accelerations being greater than or equal to the acceleration limit value; and

exiting the processor from an inactive mode upon receiving the movement signal and emitting an occupied signal with the processor if a current status of the equipment is unoccupied.

19. The method of claim 18, wherein exiting the processor from the inactive mode includes initiating a countdown if the current status of the equipment is occupied, and returning to the inactive mode.

20. The method of claim 19, wherein exiting the processor from the inactive mode includes reinitiating the countdown upon receiving at least one movement signal before the countdown has reached zero.