What is claimed is:

1. A PPE-N system comprising:
   a plurality of PPE components;
   a plurality of smart tags attached to the PPE components;
   a plurality of smart tag readers communicatively connected to the smart tags, wherein the smart tag reader is configured to constantly scan smart tags and, when the smart tag reader cannot detect the smart tag for more than an allotted time, the smart tag reader is configured to trigger audio-visual alarms and send a warning to a predetermined person;
   a hub communicatively linked to the smart tag readers, the hub is remotely programmable through a network and configured to:
   authorize the use of PPE components based on a predetermined time and quality of the PPE components;
   compare signals from the smart tags to help assess the PPE-N component health;
   generate an alarm sound when an object without the smart tag enters a predetermined area;
   a plurality of waypoints communicatively connected to the hub, wherein the waypoints are configured to:
   verify, by communication with the smart tags, that the PPE component attached to the smart tags conforms to requirements of the PPE component;
   detect the smart tags; and
   determine whether the PPE component is permitted in the predetermined area.
2. The PPE-N system as claimed in 1, wherein the PPE component is a hard hat.
3. The PPE-N system as claimed in 1, wherein the PPE component is a pair of gloves.
4. The PPE-N system as claimed in 1, wherein the PPE component is a safety vest.
5. The PPE-N system as claimed in 1, wherein the PPE component is a pair of safety boots.

6. The PPE-N system as claimed in 1, wherein the plurality of smart tags are RFID smart tags.
7. The PPE-N system as claimed in 1, wherein the way point is mobile way point.
8. The PPE-N system as claimed in 1, wherein the way point is a stationary way point.
9. The PPE-N system as claimed in 1, wherein the PPE-N system further comprises a plurality of sensors configured to notify one or more predetermined people when the PPE-N component fail to satisfy a predetermined condition based on analyzing signals from the sensors.
10. A PPE-N system comprising:

a plurality of PPE components;

a plurality of smart tags having an antenna and attached to the PPE components;

a plurality of smart tag readers communicatively connected to the smart tags,

wherein the smart tag reader is configured to constantly scan smart tags and, when the smart tag reader cannot detect the smart tag for more than an allotted time, the smart tag reader is configured to trigger audio-visual alarms and send a warning to a predetermined person;

a hub communicatively linked to the smart tag readers, the hub is remotely programmable through a network and configured to:

authorize the use of PPE components based on a predetermined time and quality of the PPE components;

compare signals from the smart tags to help assess the PPE-N component health;

generate an alarm sound when an object without the smart tag enters a predetermined area;

a plurality of waypoints communicatively connected to the hub, wherein the waypoints are configured to:

verify, by communication with the smart tags, that the PPE component attached to the smart tags conforms to requirements of the PPE component;

detect the smart tags; and

determine whether the PPE component is permitted in the predetermined area.

11. The PPE-N system as claimed in 10, wherein the PPE component is a hard hat.

12. The PPE-N system as claimed in 10, wherein the PPE component is a pair of gloves.

13. The PPE-N system as claimed in 10, wherein the PPE component is a safety vest.

14. The PPE-N system as claimed in 10, wherein the PPE component is a pair of safety boots.

15. The PPE-N system as claimed in 10, wherein the plurality of smart tags are RFID smart tags.

16. The PPE-N system as claimed in 10, wherein the way point is mobile way point.

17. The PPE-N system as claimed in 10, wherein the way point is a stationary way point.

18. The PPE-N system as claimed in 10, wherein the PPE-N system further comprises a plurality of sensors configured to notify one or more predetermined people when the PPE-N component fail to satisfy a predetermined condition based on analyzing signals from the sensors.

19. A PPE-N system comprising:

a plurality of PPE components;

a plurality of smart tags installed in a user's computing device and communicatively connected to the PPE components;

a plurality of smart tag readers communicatively connected to the smart tags, wherein the smart tag reader is configured to constantly scan smart tags and, when the smart tag reader cannot detect the smart tag for more than an allotted time, the smart tag reader is configured to trigger audio-visual alarms and send a warning to a predetermined person;

a hub communicatively linked to the smart tag readers, the hub is remotely programmable through a network and configured to:

authorize the use of PPE components based on a predetermined time and quality of the PPE components;

compare signals from the smart tags to help assess the PPE-N component health;

generate an alarm sound when an object without the smart tag enters a predetermined area;

a plurality of waypoints communicatively connected to the hub, wherein the waypoints are configured to:

verify, by communication with the smart tags, that the PPE component attached to the smart tags conforms to requirements of the PPE component;

detect the smart tags; and

determine whether the PPE component is permitted in the predetermined area.

20. The PPE-N system as claimed in 19, wherein the PPE component is a hard hat.

21. The PPE-N system as claimed in 19, wherein the PPE component is a pair of gloves.

22. The PPE-N system as claimed in 19, wherein the PPE component is a safety vest.

23. The PPE-N system as claimed in 19, wherein the PPE component is a pair of safety boots.

24. The PPE-N system as claimed in 19, wherein the plurality of smart tags are RFID smart tags.

25. The PPE-N system as claimed in 19, wherein the way point is mobile way point.

26. The PPE-N system as claimed in 19, wherein the way point is a stationary way point.

27. The PPE-N system as claimed in 19, wherein the PPE-N system further comprises a plurality of sensors configured to notify one or more predetermined people when the PPE-N component fail to satisfy a predetermined condition based on analyzing signals from the sensors.



Marked Sheet

Claims

1. A Personal Protection Equipment Network (PPE-N) system comprising:
one or more PPE components;
a plurality of smart tags attached to the one or more PPE components;
a plurality of smart tag readers communicatively connected to the plurality of smart tags, wherein the plurality of smart tag readers are configured to constantly scan the plurality of smart tags and, when the plurality of smart tag readers cannot detect the plurality of smart tags for more than an allotted time, the plurality of smart tag readers are configured to trigger audio-visual alarms and send a warning to a predetermined person;
a hub communicatively linked to the smart tag readers, the hub is remotely programmable through a network and configured to:
authorize use of the one or more PPE components based on a predetermined exposure time and quality of the one or more PPE components;
compare signals, to authorize use of a smart tag of the plurality of smart tags, when the smart tag first joined the PPE-N with current signals to assess the one or more PPE components' health;
generate an alarm sound when an object without a required smart tag enters a predetermined area;
a plurality of waypoints communicatively connected to the hub, wherein the waypoints are configured to:
verify, by communication with the plurality of smart tags, that the one or more PPE components attached to the plurality of smart tags conform to requirements of the one or more PPE components;
detect the plurality of smart tags attached to the one or more PPE components; and
determine whether the one or more PPE components are permitted in the predetermined area.
2. The PPE-N system as claimed in 1, wherein the one or more PPE components are hard hats.

3. The PPE-N system as claimed in 1, wherein the one or more PPE components are pairs of gloves.

4. The PPE-N system as claimed in 1, wherein the one or more PPE components are safety vests.

5. The PPE-N system as claimed in 1, wherein the one or more PPE components are pairs of safety boots.

6. The PPE-N system as claimed in 1, wherein the plurality of smart tags are Radio Frequency Identification Device (RFID) smart tags.

7. The PPE-N system as claimed in 1, wherein one or more waypoints of the plurality of waypoints are mobile.

8. The PPE-N system as claimed in 1, wherein one or more waypoints of the plurality of waypoints are stationary.

9. The PPE-N system as claimed in 1, wherein the PPE-N system further comprises

a plurality of sensors configured to notify one or more predetermined people when the one or more PPE components fail to satisfy a predetermined condition based on analyzing signals from the sensors.

10. A Personal Protection Equipment Network (PPE-N) system comprising:

one or more PPE components;
a plurality of smart tags, each having an antenna, attached to the one or more PPE components;
a plurality of smart tag readers communicatively connected to the plurality of smart tags,
wherein the plurality of smart tag readers are configured to constantly scan the plurality of smart tags and, when the plurality of smart tag readers cannot detect the plurality of smart tags for more than an allotted time, the plurality of smart tag readers are configured to trigger audio-visual alarms and send a warning to a predetermined person;
a hub communicatively linked to the smart tag readers, the hub is remotely programmable through a network and configured to:
authorize the use of one or more PPE components based on a predetermined time and quality of the one or more PPE components;

compare signals, to authorize use of a smart tag of the plurality of smart tags, when the smart tag first joined the PPE-N with current signals to assess the one or more PPE components' health;

generate an alarm sound when an object without a required smart tag enters a predetermined area;

a plurality of waypoints communicatively connected to the hub, wherein the waypoints are configured to:

verify, by communication with the plurality of smart tags, that the one or more PPE components attached to plurality of the smart tags conform to requirements of the one or more PPE components;

detect ~~the smart tags~~ the plurality of smart tags attached to the one or more PPE components; and

determine whether the one or more PPE components are permitted in the predetermined area.

11. The PPE-N system as claimed in 10, wherein the one or more PPE components are hard hats.

12. The PPE-N system as claimed in 10, wherein the one or more PPE components are pairs of gloves.

13. The PPE-N system as claimed in 10, wherein the one or more PPE components are safety vests.

14. The PPE-N system as claimed in 10, wherein the one or more PPE components are pairs of safety boots.

15. The PPE-N system as claimed in 10, wherein the plurality of smart tags are Radio Frequency Identification Device (RFID) smart tags.

16. The PPE-N system as claimed in 10, wherein one or more waypoints of the plurality of waypoints are mobile.

17. The PPE-N system as claimed in 10, wherein one or more waypoints of the plurality of waypoints are stationary.

18. The PPE-N system as claimed in 10, wherein the PPE-N system further comprises

a plurality of sensors configured to notify one or more predetermined people when the one or more PPE components fail to satisfy a predetermined condition based on analyzing signals from the sensors.

19. A Personal Protection Equipment Network (PPE-N) system comprising:

one or more PPE components;

a plurality of smart tags attached to the one or more PPE components and communicatively connected to a user's computing device;

a plurality of smart tag readers communicatively connected to the plurality of smart tags, wherein the plurality of smart tag readers are configured to constantly scan the plurality of smart tags and, when the plurality of smart tag readers cannot detect the plurality of smart tags for more than an allotted time, the plurality of smart tag readers are configured to trigger audio-visual alarms and send a warning to a predetermined person;

a hub communicatively linked to the plurality of smart tag readers, the hub is remotely programmable through a network and configured to:

authorize the use of one or more PPE components based on a predetermined time and quality of the one or more PPE components;

compare signals, to authorize use of a smart tag of the plurality of smart tags, where the smart tag first joined the PPE-N with current signals to assess the one or more PPE components' health;

generate an alarm sound when an object without a required smart tag enters a predetermined area;

a plurality of waypoints communicatively connected to the hub, wherein the waypoints are configured to:

verify, by communication with the plurality of smart tags, that the one or more PPE components attached to the plurality of smart tags conform to requirements of the PPE component;

detect the plurality of smart tags attached to the one or more PPE components; and

determine whether the one or more PPE components is permitted in the predetermined area.

20. The PPE-N system as claimed in 19, wherein the one or more PPE components are hard hats.

21. The PPE-N system as claimed in 19, wherein the one or more PPE components are pairs of gloves.

22. The PPE-N system as claimed in 19, wherein the one or more PPE components are safety vests.

23. The PPE-N system as claimed in 19, wherein the one or more PPE components are pairs of safety boots.

24. The PPE-N system as claimed in 19, wherein the plurality of smart tags are Radio Frequency Identification Device (RFID) smart tags.

25. The PPE-N system as claimed in 19, wherein one or more waypoints of the plurality of waypoints are mobile.

26. The PPE-N system as claimed in 19, wherein one or more waypoints of the plurality of waypoints are stationary.

27. The PPE-N system as claimed in 19, wherein the PPE-N system further comprises a plurality of sensors configured to notify one or more predetermined people when the one or more PPE components fail to satisfy a predetermined condition based on analyzing signals from the sensors.