SUMMARY

[0004] This summary is provided to introduce a selection of concepts in a simplified form identify key features or essential features of the claimed subject matter, nor is it intended to be used as an aid in determining the scope of the claimed subject matter.

[0005] ~~Provided are systems and methods for interactive emergency information and identification. For example, the present disclosure encompasses a first embodiment related to a computer-implemented method for interactive emergency information and identification. The method includes receiving, by a processor, a notification concerning an emergency situation, wherein the notification includes a location of the emergency situation, and defining, by the processor, a geo-fence representing a first physical area surrounding the location of the emergency situation. The method also includes receiving, by the processor, location information representing locations of a plurality of user devices, each user device being associated with an individual, and determining, by the processor, which of the user devices are located within the geo-fence based on the location information. Further, the method includes transmitting, by the processor, information about the emergency situation to the user devices located within the geo-fence.~~

According to a first aspect of the present invention, there is provided a computer-implemented method for interactive emergency information and identification, the method comprising: receiving, by a processor, a notification concerning an emergency situation, wherein the notification includes a location of the emergency situation; defining, by the processor, a geo-fence representing a first physical area surrounding the location of the emergency situation; receiving, by the processor, location information representing locations of a plurality of user devices, each user device being associated with an individual; determining, by the processor, which of the user devices are located within the geo-fence based on the location information; and transmitting, by the processor, information about the emergency situation to the subscribed user devices located within the geo-fence.

[0006] In one embodiment, the method further includes receiving, by the processor, feedback from at least one of the user devices located within the geo-fence, the feedback being generated in a user interface provided on the user devices. Such feedback may include a request for help and/or a statement that no help is required. Further, the feedback may include textual information related to the emergency situation, audio information related to

the emergency situation, and/or video information related to the emergency situation. In another embodiment, wherein the geo-fence includes a plurality of proximity zones representing physical areas of different distances from the location of the emergency situation, and the method further includes determining in which proximity zone each user device located within the geo-fence is respectively located. In yet another embodiment, the method includes transmitting emergency instructions associated with the emergency situation to the user devices located within the geo-fence.

[0007] ~~As another example, the present disclosure encompasses a second embodiment related to a computer-implemented method for interactive emergency information and identification. The method includes establishing, by a processor, a virtual beacon in~~

~~association with a landmark, and receiving, by the processor, location information representing locations of a plurality of user devices, each user device being associated with an individual associated with the landmark. The method further includes determining, by the processor, which of the user devices are located within a subscription distance from the virtual beacon based on the location information, subscribing the individuals associated with user devices within the subscription distance to an emergency notification list, and unsubscribing from the emergency notification list the individuals associated with user devices outside of the subscription distance. Further, after establishing the virtual beacon, the method includes receiving, by a processor, a notification concerning an emergency situation, wherein the notification includes a location of the emergency situation, and transmitting, by the processor, information about the emergency situation to the user devices associated with individuals subscribed to the emergency notification list.~~

According to a second aspect of the present invention, there is provided a computer-implemented method for interactive emergency information and identification, the method comprising: establishing, by a processor, a virtual beacon in association with a landmark; receiving, by the processor , location information representing locations of a plurality of user devices, each user device being associated with an individual associated with the landmark; determining, by the processor, which of the user devices are located within a subscription distance from the virtual beacon based on the location information; subscribing the individuals associated with user devices within the subscription distance to an emergency notification list; unsubscribing from the emergency notification list the individuals associated with user devices outside of the subscription distance; after establishing the virtual beacon, receiving, by a processor, a notification concerning an emergency situation, wherein the notification includes a location of the emergency situation; and transmitting, by the processor, information about the emergency situation to the user devices associated with the subscribed individuals.

[0008] In one embodiment, the method further includes defining, by the processor, a geo-fence representing a physical area surrounding the location of the emergency situation, determining, by the processor, which of the user devices are located within the geo-fence based on the location information, and transmitting, by the processor, further information about the emergency situation to the user devices located within the geo-fence. In one embodiment, the number of user devices located within the geo-fence is less than the number

of user devices located within the subscription distance from the virtual beacon. In a further embodiment, transmitting information about the emergency situation includes transmitting emergency instructions to the user devices.

[0009] ~~As yet another example, the present disclosure encompasses a third embodiment related to a computer-implemented method for interactive emergency information and identification. The method includes displaying, with a user interface executing on a user device associated with an individual, information about an emergency situation received by the user device, and prompting, with the user interface, the individual to provide a current safety status of the individual. The method also includes receiving, via an input to the user interface, the current safety status of the individual, the received safety status being subsequently transmitted to a transmitted to an emergency information and identification system. Further, the method includes prompting, with the user interface, the individual to provide emergency situation data, and receiving, via an input to the user interface, emergency~~

~~situation data, the received emergency situation data being subsequently transmitted to the emergency information and identification system.~~

According to a third aspect of the present invention, there is provided a computer-implemented method for interactive emergency information and identification, the method comprising: displaying, with a user interface executing on a user device associated with an individual, information about an emergency situation received by the user device; prompting, with the user interface, the individual to provide a current safety status of the individual; receiving, via an input to the user interface, the current safety status of the individual, the received safety status being subsequently transmitted to a transmitted to an emergency information and identification system; prompting, with the user interface, the individual to provide emergency situation data; and receiving, via an input to the user interface, emergency situation data, the received emergency situation data being subsequently transmitted to the emergency information and identification system.

[0010] In one embodiment, prompting the individual to provide a current safety status includes displaying a first control element that the individual may activate if help is needed and a second control element that the individual may activate if no help is needed. In another embodiment, prompting the individual to provide emergency situation data includes displaying at least one of a first control element that the individual may activate to provide textual information related to the emergency situation, a second control element that the individual may activate to provide audio information related to the emergency situation, and a third control element that the individual may activate to provide video information related to the emergency situation. In a further embodiment, displaying information about an emergency situation includes displaying a graphical map showing a location of the emergency situation relative to a position of the user device. In yet another embodiment, displaying information about an emergency situation includes altering the appearance of the user interface based on the proximity of the emergency situation to the user device.

BRIEF DESCRIPTION OF DRAWINGS

[0011] Embodiments are illustrated by way of example and not limitation in the figures of the accompanying drawings, in which like references indicate similar elements and in which:

[0012] FIG. 1 illustrates an environment within which interactive emergency information and identification systems and methods can be implemented, in accordance to some embodiments.

[0013] FIG. 1A illustrates another environment within which interactive emergency information and identification systems and methods can be implemented, in accordance with other embodiments of the disclosure.

[0014] FIG. 2 is a block diagram showing various modules of the interactive emergency information and identification system, in accordance with certain embodiments.

[0015] FIG. 3 is a flow chart illustrating an interactive emergency information and identification method, in accordance with some example embodiments.

CLAIMS:

1. A computer-implemented method for interactive emergency information and identification, the method comprising:

receiving, by a processor, a notification concerning an emergency situation, wherein the notification includes a location of the emergency situation;

defining, by the processor, a geo-fence representing a first physical area surrounding the location of the emergency situation;

receiving, by the processor, location information representing locations of a plurality of user devices, each user device being associated with an individual;

determining, by the processor, which of the user devices are located within the geo-fence based on the location information; and

transmitting, by the processor, information about the emergency situation to the subscribed user devices located within the geo-fence.

2. The method of claim 1, further comprising: receiving, by the processor, feedback from at least one of the user devices located within the geo-fence, the feedback being generated in a user interface provided on the user devices.

3. The method of claim 2, further comprising: consolidating, by the processor, the feedback to generate a safety status report describing the safety of the individuals associated with the user devices located within the geo-fence.

4. The method of claim 2, further comprising: if the feedback includes a statement that no help is required, transmitting a message to an emergency contact associated with the at least one of user device indicating that the individual associated with the user device is safe.

5. The method of claim 2, wherein the feedback includes at least one of textual information related to the emergency situation, audio information related to the emergency situation, and video information related to the emergency situation.

6. The method of any one of claims 2 to 5, further comprising: transmitting, by the processor, the feedback to one or more emergency agencies.

7. The method of claim 1, wherein the geo-fence includes a plurality of proximity zones representing physical areas of different distances from the location of the emergency situation; and further comprising: determining in which proximity zone each user device located within the geo-fence is respectively located.

8. The method of claim 1 or 7, wherein the geo-fence is defined by a circle having a radius extending from the location of the emergency situation, optionally with the radius being defined automatically based on characteristics of the emergency situation.

9. The method of claim 1 or 7, further comprising: redefining the geo-fence to represent a second physical area different than the first physical area based on information received from at least one of the user devices.

10. The method of claim 1, wherein the transmitting includes sending a push message that is displayed on the respective screens of the user devices located within the geo-fence; wherein the transmitting includes transmitting to each user device within the geo-fence the location of the emergency situation relative to the position of the user device; or a combination thereof;

wherein the emergency situation includes one or more of a terrorist attack, a shooting event, a bombing event, a building collapse, a natural disaster, an earthquake, a flood, a fire, a hurricane, and an accident;

wherein the locations of the plurality of user devices are determined by at least one of multilateration of radio signals between radio towers, triangulation of a GPS signals, WiFi positioning, and Bluetooth sensor signals; or a combination thereof.

11. The method of claim 1 or 10, further comprising transmitting emergency instructions associated with the emergency situation to the user devices located within the geo-fence.

12. The method of claim 11, wherein the emergency instructions vary based on a proximity of a user device to the location of the emergency situation; wherein the emergency instructions include graphical directions shown in relation to the location of the emergency situation; or both.

13. The method of claim 1, which further comprises generating, by the processor, a map showing the locations of the plurality of user devices respective to the location of the emergency situation.

14. The method of claim 1 or 13, wherein the processor is outside of the geo-fence.

15. A computer-implemented method for interactive emergency information and identification, the method comprising:

establishing, by a processor, a virtual beacon in association with a landmark;

receiving, by the processor, location information representing locations of a plurality of user devices, each user device being associated with an individual associated with the landmark;

determining, by the processor, which of the user devices are located within a subscription distance from the virtual beacon based on the location information;

subscribing the individuals associated with user devices within the subscription distance to an emergency notification list;

unsubscribing from the emergency notification list the individuals associated with user devices outside of the subscription distance;

after establishing the virtual beacon, receiving, by a processor, a notification concerning an emergency situation, wherein the notification includes a location of the emergency situation; and

transmitting, by the processor, information about the emergency situation to the user devices associated with the subscribed individuals.

16. The method of claim 15, wherein the subscription distance forms a virtual boundary around the virtual beacon that encompasses the landmark, and optionally, wherein the virtual boundary is three-dimensional.

17. The method of claim 15 or 16, further comprising:

defining, by the processor, a geo-fence representing a physical area surrounding the location of the emergency situation;

determining, by the processor, which of the user devices are located within the geo-fence based on the location information; and

transmitting, by the processor, further information about the emergency situation to the user devices located within the geo-fence.

18. The method of claim 17, wherein the geo-fence encompasses less than the entire landmark; wherein the number of user devices located within the geo-fence is less than the number of user devices located within the subscription distance from the virtual beacon;

wherein transmitting information about the emergency situation to the user devices includes transmitting push messages to be displayed on the respective screens of the user devices associated with the subscribed individuals; or any combination thereof.

19. The method of claim 15, wherein the processor is located remote from the landmark;

wherein the landmark is one of a building and a collection of adjacent buildings; wherein transmitting information about the emergency situation includes transmitting emergency instructions to the user devices associated with individuals subscribed to the emergency notification list; or a combination thereof.

20. The method of claim 19, wherein the emergency instructions include graphical directions shown in relation to the location of the emergency situation.

21. A computer-implemented method for interactive emergency information and identification, the method comprising:

displaying, with a user interface executing on a user device associated with an individual, information about an emergency situation received by the user device;

prompting, with the user interface, the individual to provide a current safety status of the individual;

receiving, via an input to the user interface, the current safety status of the individual, the received safety status being subsequently transmitted to a transmitted to an emergency information and identification system;

prompting, with the user interface, the individual to provide emergency situation data; and

receiving, via an input to the user interface, emergency situation data, the received emergency situation data being subsequently transmitted to the emergency information and identification system.

CLAIMS

What is claimed is:

1. A computer-implemented method for interactive emergency information and identification, the method comprising:

receiving, by a processor, a notification concerning an emergency situation, wherein the notification includes a location of the emergency situation;

defining, by the processor, a geo-fence representing a first physical area surrounding the location of the emergency situation;

receiving, by the processor, location information representing locations of a plurality of user devices, each user device being associated with an individual;

determining, by the processor, which of the user devices are located within the geo-fence based on the location information; and

transmitting, by the processor, information about the emergency situation to the subscribed user devices located within the geo-fence.

2. The method of claim 1, further comprising: receiving, by the processor, feedback from at least one of the user devices located within the geo-fence, the feedback being generated in a user interface provided on the user devices.

3. The method of claim 2, wherein the feedback includes one of a request for help and a statement that no help is required.

4. The method of claim 2 or 3, further comprising: consolidating, by the processor, the feedback to generate a safety status report describing the safety of the individuals associated with the user devices located within the geo-fence.

5. The method of claim 3, further comprising: if the feedback includes a statement that no help is required, transmitting a message to an emergency contact associated with the at least one of user device indicating that the individual associated with the user device is safe.

6. The method of claim 2, wherein the feedback includes at least one of textual information related to the emergency situation, audio information related to the emergency situation, and video information related to the emergency situation.

7. The method of claim 2 or 3, further comprising: transmitting, by the processor, the feedback to one or more emergency agencies.

8. The method of claim 1, wherein the geo-fence includes a plurality of proximity zones representing physical areas of different distances from the location of the emergency situation; and further comprising: determining in which proximity zone each user device located within the geo-fence is respectively located.

9. The method of claim 1 or 8, wherein the geo-fence is defined by a circle having a radius extending from the location of the emergency situation.

10. The method of claim 9, wherein the radius is defined automatically based on characteristics of the emergency situation.

11. The method of claim 1 or 8, further comprising: redefining the geo-fence to represent a second physical area different than the first physical area based on information received from at least one of the user devices.

12. The method of claim 1, wherein the transmitting includes sending a push message that is displayed on the respective screens of the user devices located within the geo-fence; wherein

the transmitting includes transmitting to each user device within the geo-fence the location of the emergency situation relative to the position of the user device; or a combination thereof.

13. The method of claim 1, wherein the emergency situation includes one or more of a terrorist attack, a shooting event, a bombing event, a building collapse, a natural disaster, an earthquake, a flood, a fire, a hurricane, and an accident.

14. The method of claim 1, wherein the locations of the plurality of user devices are determined by at least one of multilateration of radio signals between radio towers, triangulation of a GPS signals, WiFi positioning, and Bluetooth sensor signals.

15. The method of claim 1 or 12, further comprising transmitting emergency instructions associated with the emergency situation to the user devices located within the geo-fence.

16. The method of claim 15, wherein the emergency instructions vary based on a proximity of a user device to the location of the emergency situation; wherein the emergency instructions include graphical directions shown in relation to the location of the emergency situation; or both.

17. The method of claim 1, which further comprises generating, by the processor, a map showing the locations of the plurality of user devices respective to the location of the emergency situation.

18. The method of claim 1 or 17, wherein the processor is outside of the geo-fence.

19. A computer-implemented method for interactive emergency information and identification, the method comprising:

establishing, by a processor, a virtual beacon in association with a landmark;

receiving, by the processor, location information representing locations of a plurality of user devices, each user device being associated with an individual associated with the landmark;

determining, by the processor, which of the user devices are located within a subscription distance from the virtual beacon based on the location information;

subscribing the individuals associated with user devices within the subscription distance to an emergency notification list;

unsubscribing from the emergency notification list the individuals associated with user devices outside of the subscription distance;

after establishing the virtual beacon, receiving, by a processor, a notification concerning an emergency situation, wherein the notification includes a location of the emergency situation; and

transmitting, by the processor, information about the emergency situation to the user devices associated with the subscribed individuals.

20. The method of claim 19, wherein the subscription distance forms a virtual boundary around the virtual beacon that encompasses the landmark.

21. The method of claim 20, wherein the virtual boundary is three-dimensional.

22. The method of claim 19 or 20, further comprising:

defining, by the processor, a geo-fence representing a physical area surrounding the location of the emergency situation;

determining, by the processor, which of the user devices are located within the geo-fence based on the location information; and

transmitting, by the processor, further information about the emergency situation to the user devices located within the geo-fence.

23. The method of claim 22, wherein the geo-fence encompasses less than the entire landmark.

24. The method of claim 22, wherein the number of user devices located within the geo-fence is less than the number of user devices located within the subscription distance from the virtual beacon.

25. The method of claim 19, wherein transmitting information about the emergency situation to the user devices includes transmitting push messages to be displayed on the respective screens of the user devices associated with the subscribed individuals.

26. The method of claim 19, wherein the processor is located remote from the landmark.

27. The method of claim 19, wherein the landmark is one of a building and a collection of adjacent buildings.

28. The method of claim 19, wherein transmitting information about the emergency situation includes transmitting emergency instructions to the user devices associated with individuals subscribed to the emergency notification list.

29. The method of claim 28, wherein the emergency instructions include graphical directions shown in relation to the location of the emergency situation.

30. A computer-implemented method for interactive emergency information and identification, the method comprising:

displaying, with a user interface executing on a user device associated with an individual, information about an emergency situation received by the user device;

prompting, with the user interface, the individual to provide a current safety status of the individual;

receiving, via an input to the user interface, the current safety status of the individual, the received safety status being subsequently transmitted to a transmitted to an emergency information and identification system;

prompting, with the user interface, the individual to provide emergency situation data; and

receiving, via an input to the user interface, emergency situation data, the received emergency situation data being subsequently transmitted to the emergency information and identification system.

31. The method of claim 30, wherein prompting the individual to provide a current safety status includes displaying a first control element that the individual may activate if help is needed and a second control element that the individual may activate if no help is needed; wherein prompting the individual to provide emergency situation data includes displaying at least one of a first control element that the individual may activate to provide textual information related to the emergency situation, a second control element that the individual may activate to provide audio information related to the emergency situation, and a third control element that the individual may activate to provide video information related to the emergency situation; or both.

32. The method of claim 30 or 31, wherein displaying information about an emergency situation includes displaying a graphical map showing a location of the emergency situation relative to a position of the user device; wherein displaying information about an emergency situation includes altering the appearance of the user interface based on the proximity of the emergency situation to the user device; wherein displaying information about an emergency situation includes displaying emergency instructions based on a position of the user device; wherein displaying emergency instructions includes displaying graphical directions on a map showing a location of the emergency situation and the position of the user device; or any combination thereof.