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**Garratt Campbell**

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(54) **LOCATION, TRACKING AND ALERTING APPARATUS AND METHOD**

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(76) Inventor: **Thomas Robert Garratt Campbell,**  
London (GB)

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Correspondence Address:  
**DRUMMOND & DUCKWORTH**  
Suite 500  
4590 MacArthur Blvd.,  
Newport Beach, CA 92660 (US)

(57) **ABSTRACT**

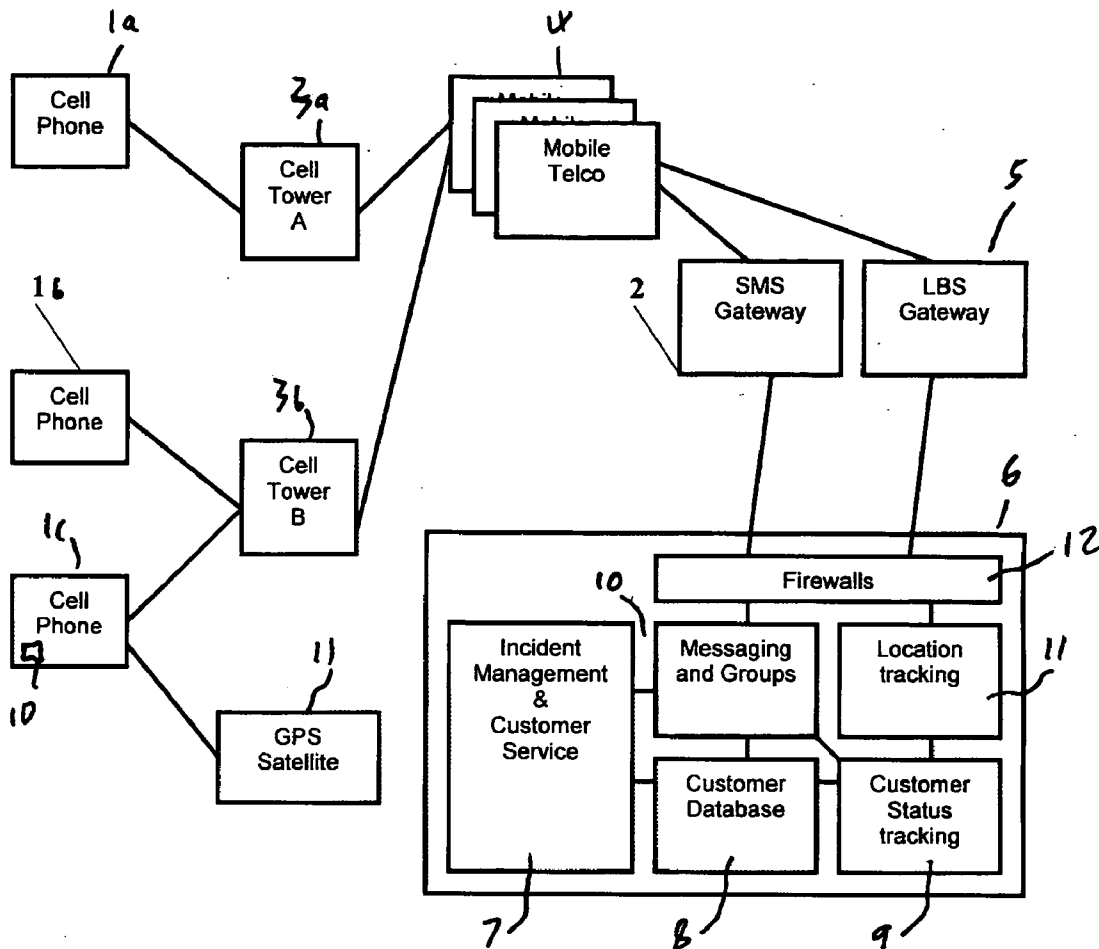
This invention describes a product that is used during emergency incidents where the location of people can be used to track who could have been involved in the incident for example Industrial Accidents, Extreme Weather, Natural Disasters, Terrorist Attacks etc. The service locates people using devices they carry with them typically their mobile phone (1). The people's locations are compared to the location and radius of the incident and the probability that they may have been involved in the incident is determined (possible or low probability). People are also automatically contacted by a variety of means for example SMS (2) to their mobile and asked to confirm their status. Their status is automatically updated and available to people who they have linked themselves to via the service.

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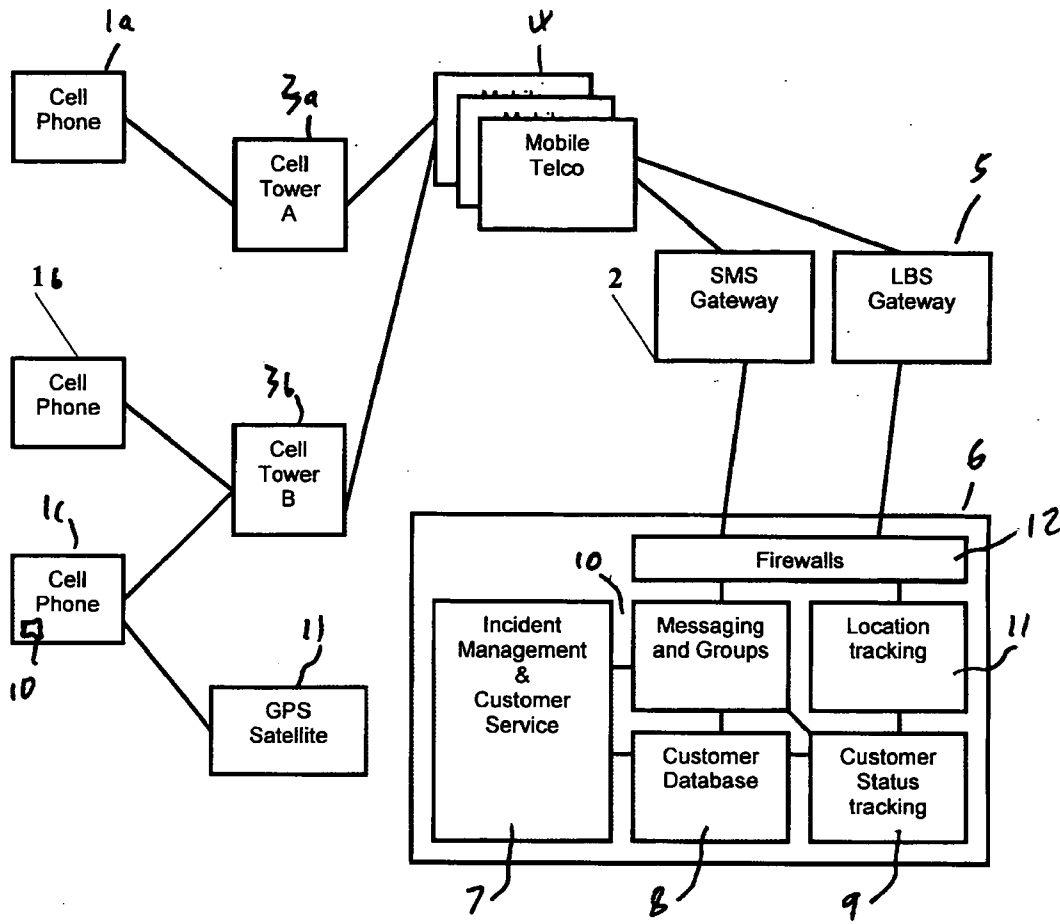


Figure 1

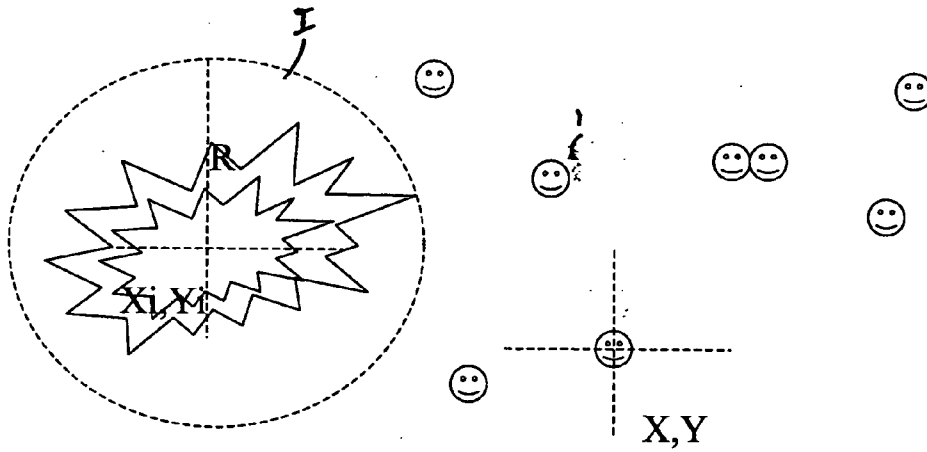


Figure 2

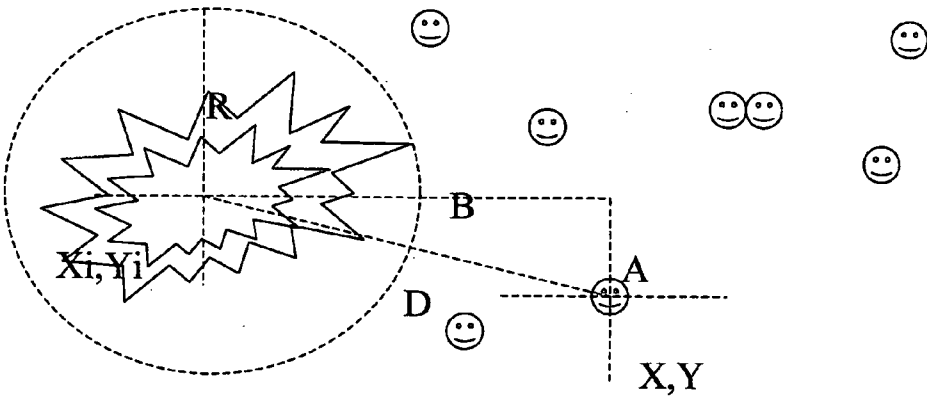


Figure 3

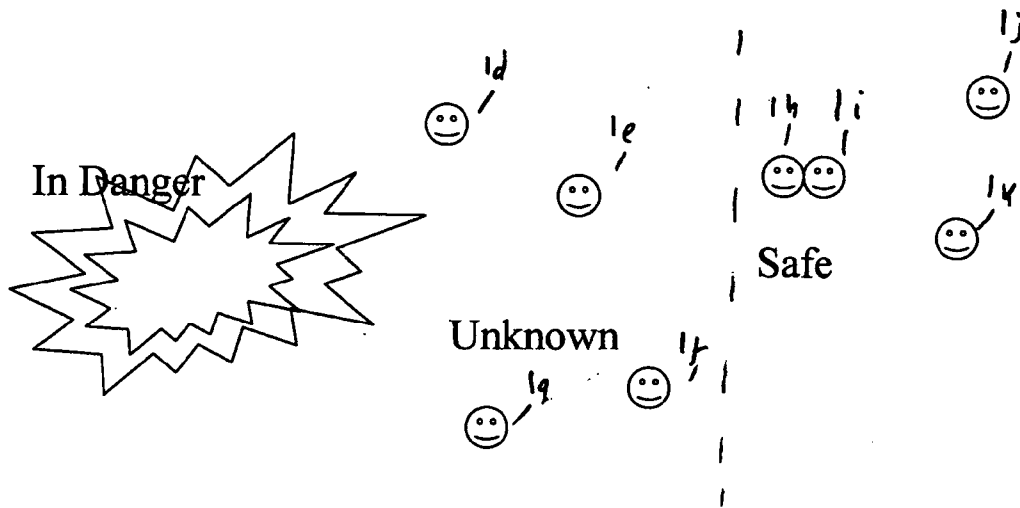


Figure 4

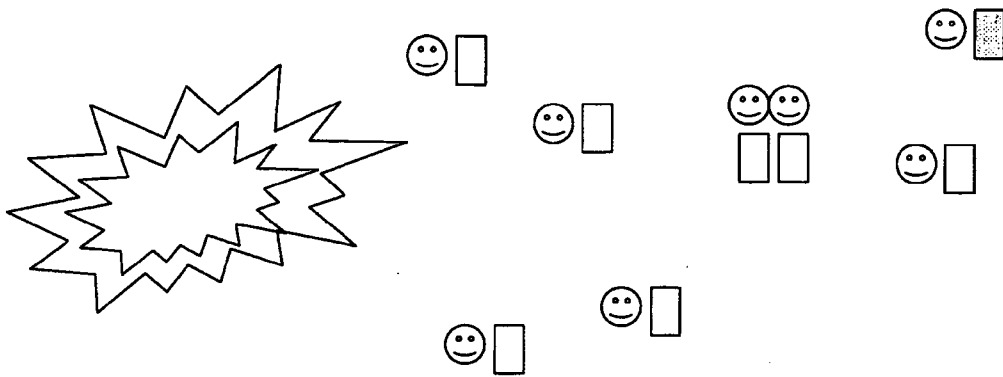


Figure 5

## LOCATION, TRACKING AND ALERTING APPARATUS AND METHOD

### BACKGROUND OF THE INVENTION

[0001] This invention relates to a method and apparatus for locating and tracking a user of a mobile terminal during periods of emergency and for alerting friends, family and other contacts of that user of the status of that user.

[0002] In the event of sudden emergencies arising such as terrorist incidents, major industrial accidents or natural disasters, people naturally need to be reassured that their friends and family are safe. That is, either that they are not near the site of the emergency or that, if they are in the vicinity, that they are accounted for and safe.

[0003] Most people carry or have access to mobile communications devices, such as mobile phones (cell phones), network PDAs and so on and these can be used to inform the contacts of the mobile user that the user is safe. However, in the event of major incidents, telecommunication networks often become overloaded. Thus, if a user finds himself in the vicinity of an emergency situation or may be a short distance outside it, he is often not able to inform his friends and family immediately that he is safe. Even if he is, he needs to call each separate contact individually and this also adds to the problem of congestion of the telecommunications networks.

[0004] The present invention arose in an attempt to provide an improved method for locating and tracking user's of mobile terminals and for alerting their contacts with their status details.

### SUMMARY OF THE INVENTION

[0005] According to the present invention in a first aspect there is provided a method of determining the status of holders of mobile communications terminals during an incident, comprising determining the location of an incident; determining the position of the mobile terminal and using the position of the mobile terminal relative to the incident to determine the state of the user of that terminal, and using that status to transmit a message concerning the user's status to one or more selected contacts of that user.

[0006] Preferably, the method includes a step of determining whether the terminal is within a predetermined distance from the epicentre of the incident or of the incident or not and sending an appropriate status message to the one or more contacts accordingly.

[0007] The method preferably includes, if the terminal is within a predetermined distance from the incident, of transmitting a message to the terminal requesting a response so that the status transmitted can be based upon this response.

[0008] In a further aspect, the invention provides a system for locating the user of a mobile terminal in the event of an incident and alerting one or more predetermined contacts, the system comprising, in the event of a particular incident, determining the position of the mobile terminal and its relative distance from the incident or the epicentre of an incident, and means for using this position to transmit status messages to one or more predetermined contacts.

distance from the incident or incident epicentre and, if so, for transmitting a message to the terminal requiring a response so that the presence or absence of a response determines the status transmitted to said one or more contacts.

[0010] The system may comprise means for determining whether the terminal is greater than a predetermined distance from the incident or epicentre and, if so, for transmitting a signal to one or more contacts regarding the status of the terminal user.

[0011] Further, non-limiting features of the invention which are considered inventive in their own right are the following:

[0012] a) An emergency location and alerting service that locates people and groups of people when an emergency incident occurs, determining their status via the their distance from incident.

[0013] b) An emergency location and alerting service as in that also determines a persons likelihood of people be affected by the incident using their location accuracy information.

[0014] c) An emergency location and alerting service as in a) that also contact people via a messaging system to determine their if they were involved in the incident.

[0015] d) An emergency location and alerting service as in a) that also determines a persons likelihood of being affected by the incident using this reply to a status request message.

[0016] e) An emergency location and alerting service as in a) that also allows people to select groups of other people to be monitored.

[0017] f) An emergency location and alerting service as in a) that also give status information to members of a group about other members of the group.

[0018] g) An emergency location and alerting service as in a) where locations of the people can be delivered in bulk from the mobile operators rather than one at a time on request.

[0019] h) An emergency location and alerting service as in a) were the incidents may have multiple locations that can be tracked and reported either together or separately.

[0020] i) An emergency location and alerting service as in a) where when a person adds an individual to their group they are also added to that persons group.

[0021] j) An emergency location and alerting service as in a) where when a person adds an individual to their group they are not added to that persons group.

[0022] k) An emergency location and alerting service as in a) where information on the incident is sent to all people in the system.

[0023] l) An emergency location and alerting service as in a) where information on the incident is sent to selected people in the system.

[0024] The invention also extends to any novel feature or novel combination of features herein disclosed.

### BRIEF DESCRIPTION OF THE DRAWINGS

[0025] Embodiments of the invention will now be described, by way of example only, with reference to the accompanying drawings, in which:

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