CLAIMS

What is claimed is:

1. A method of managing Cell Broadcast (CB) alert messages in a wireless communication network (102), the method comprising:

determining a plurality of communication devices capable of receiving the CB alert message in an alert area (404) from a number of communication devices in the alert area (404) that are CB supported, MBMS supported, and CB supported on communication devices using mobile applications or SIM applications;

predicting the reach of the CB alert message to the number of communication devices in the alert area (404) before a CB alert is initiated;

sending, by a CB alert system (136), a CB alert message to the plurality of communication devices in the alert area (404) through a wireless communication channel, each of the plurality of communication devices comprising a CB message handling application (2106);

receiving one or more acknowledgement messages from one or more communication devices, in response to receipt of the CB alert message at the plurality of communication devices, wherein the one or more acknowledgement messages are received from the CB message handling application (2106) in respective communication devices;

wherein preparing an acknowledgement statistic based on the one or more acknowledgement messages received from the one or more communication devices and the CB alert message sent to the plurality of communication devices

determining a first set of communication devices based on the acknowledgement statistic; and

performing a predefined action on the first set of communication devices, wherein the predefined action includes at least one of re-sending the CB alert message to the first set of communication devices, establishing a voice communication channel with the first set of communication devices, and sending an alert message to emergency contact numbers associated with each communication device in the first set of communication devices, wherein the alert message is associated with the CB alert message; and

wherein the alert area (404) is determined based on geo-coordinates corresponding to a predefined area on a map, and wherein the predefined area is a geographical area where the CB alert message is sent, and specific cell sites (126, 128, 130) associated with the alert area (404) are identified using the identified geo-coordinates.

2. The method of claim 1, wherein the sending of the CB alert message comprises:

identifying one or more communication network sites associated with the alert area (404);

determining one or more network elements (104-108) responsible for handling communication in the one or more communication network sites; and

delivering the CB alert message to the plurality of communication devices associated with the one or more network elements (104-108).

3. The method of claim 1, wherein the one or more acknowledgement messages comprise at least one of a unique alert identity (ID) associated with the CB alert message, location of a communication device, a predefined text message, a user composed message, a communication channel information, a user identification number, a Mobile Station International Subscriber Directory Number (MSISDN), an International Mobile Subscriber Identity (IMSI), a Subscriber Identity Module (SIM) number, an International Mobile Station Equipment Identity (IMEI) number, a Cell Identity (ID), a Location Area Code, a Mobile Network Code (MNC), and a Mobile Country Code (MCC).

4. The method of claim 1, wherein the one or more acknowledgement messages comprise at least one of a Hyper Text Transfer Protocol (HTTP) Post message, a Short Message Service (SMS) message, an Electronic mail (E-mail) message, a voice mail message, and a signalling message.

5. The method of claim 1, wherein the CB alert message comprises at least one of an identification number associated with the CB alert message, a predefined text message, an alert area information, and an interactive help module.

6. The method of claim 1, further comprising creating the CB alert message using at least one of an alert application (206) and a Graphical User Interface (GUI) associated with the CB alert system (136).

7. The method of claim 1, further comprising receiving a first set of acknowledgement messages from the one or more acknowledgement messages as a group message in a single communication packet, wherein the single communication packet is a CB uplink acknowledgement message.

8. The method of claim 1, further comprising receiving the one or more acknowledgement messages through at least one of a cellular network, an Internet Protocol network via a Wireless Fidelity (Wi-Fi) router and an Internet Protocol network via a Bluetooth router.

9. The method of claim 1, wherein the determining the number of communication devices comprises performing at least one of:

accessing capability of communication devices from the plurality of communication devices to receive CB alert message based on signalling data; and

identifying communication devices enabled with an application (2106) in the alert area (404), wherein the application (2106) is at least one of a mobile application or a Subscriber Identification Module (SIM) application including a setting to receive CB alert messages.

10. The method of claim 1, further comprising:

identifying a set of communication devices incapable of receiving the CB alert message;

finding an alternate alert notification technique for each communication device in the set of communication devices, wherein the alternate alert notification technique is different from a CB alert technique; and

sending an alert message to the each communication device using the alternate alert notification technique.

11. The method of claim 1, further comprising:

determining a count of acknowledgement messages received from the one or more communication devices; and

determining statistics associated with a number of subscribers who have received the CB alert message.

12. A Cell Broadcast (CB) alert system (136) for managing CB alert messages, the CB alert system (136) comprising:

a memory (214) to store instructions for managing the CB alert messages; and

a processor (212) operatively coupled with the memory (214) to execute the instructions stored in the memory (214), the processor (212) configured to:

determine a plurality of communication devices capable of receiving the CB alert message in an alert area (404) from a number of communication devices in the alert area (404) that are CB supported, MBMS supported, and CB supported on communication devices using mobile applications or SIM applications;

predict the reach of the CB alert message to the number of communication devices in the alert area (404) before a CB alert is initiated;

send a CB alert message to the plurality of communication devices in an alert area (404) through a wireless communication channel, wherein each of the plurality of communication devices comprises a CB message handling application (2106);

receive one or more acknowledgement messages from one or more communication devices, in response to receipt of the CB alert message at the plurality of communication devices, wherein the one or more acknowledgement messages are received from the CB message handling application (2106) in respective communication devices;

wherein preparing an acknowledgement statistic based on the one or more acknowledgement messages received from the one or more communication devices and the CB alert message sent to the plurality of communication devices;

determine a first set of communication devices based on the acknowledgement statistic;

perform a predefined action on the first set of communication devices, wherein the predefined action includes at least one of re-sending the CB alert message to the first set of communication devices, wherein the predefined action includes establishing a communication channel with the first set of communication devices, and sending an alert message to emergency contact numbers associated with each communication device in the first set of communication devices, wherein the alert message is associated with the CB alert message; and

wherein the alert area (404) is determined based on geo-coordinates corresponding to a predefined area on a map, and wherein the predefined area is a geographical area where the CB alert message is sent, and specific cell sites (126, 128, 130) associated with the alert area (404) are identified using the identified geo-coordinates.

13. The CB alert system (136) of claim 12, wherein the processor (212) is further configured to:

identify one or more communication network sites associated with the alert area (404);

determine one or more network elements (104-108) responsible for handling communication in the one or more communication network sites; and

deliver the CB alert message to the plurality of communication devices associated with the one or more network elements (104-108).

14. The CB alert system (136) of claim 12, wherein the one or more acknowledgement messages comprise at least one of a unique alert identity (ID) associated with the CB alert message, location of a communication device, a predefined

text message, a user composed message, a communication channel information, a user identification number, Mobile Station International Subscriber Directory Number (MSISDN), an International Mobile Subscriber Identity (IMSI), a Subscriber Identity Module (SIM) number, an International Mobile Station Equipment Identity (IMEI) number, a Cell Identity (ID), a Location Area Code, a Mobile Network Code (MNC), and a Mobile Country Code (MCC).

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