Privacy & Security – Your Questions Answered
Location Based SMS for Public Warning

Introduction and Background

During major emergencies, Location Based SMS is a mobile technology used by government authorities to send targeted SMS messages to everyone who may be at risk. This technology makes it possible to calculate the number of people in a defined area and identify which country they are from so the messages can be delivered in their native language. Such information is valuable to the authorities responsible for coordinating the emergency response. However, the public often have questions about the security of their personal information and the privacy of their identity. “How does the government know where I am?” is a common question.

Everbridge does not, of course, know location of individuals.

We do not “track” anyone and we do not collect information on peoples whereabouts. This document explains how Location Based SMS works in scope of privacy and security and attempts to answer some of the common questions we receive on this topic.

The public rightly need to understand if the technology collects any personal data and for what purpose.

How Location Based SMS Works

Location Based SMS (LB-SMS) from Everbridge relies on information which is already available within the mobile operators' network nodes and management systems. By integrating into the same systems that network operators use to keep their mobile networks running, and provide the familiar mobile services – we are able to send SMS to subscribers in a geographical defined area – without accessing any of the personal identifiable information (PII) such as phone numbers or the location of individuals.

All components which integrate with mobile operator systems are installed inside the mobile operators network, well behind all the firewalls that protect mobile operators from the outside.

Simplified, sending a location based SMS follows the following process:

1. End user draws an area on the map and adds the alert message and other alert details
2. The area and message is sent to the Everbridge LB-SMS servers installed inside each of the mobile operators. When multiple operators are involved, a gateway ensures that the area and message content is sent to each of them.
3. The system then uses mobile network data (cells/sites, antenna data, coverage data etc.) to convert the area to a list of cells that cover the given area
4. By using available data from the mobile network, the system then identifies mobile phones with last know events on any of these cells
5. Finally, the system integrates with the mobile operators SMS Center to send the Mobile Terminated alert message to the mobile phones in question. A Delivery Report is sent back to the system which enables status such as how many were sent, delivered, failed etc.
6. Finally, status & statisics (but no PII) is returned to the end user. Statistics include the count of subscribers per cell or even count by nationality (used to decide message language that subscribers receive).

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The following diagram shows the various components and the categories of data flowing between them:

Cell Data: this is information about cells, and site locations in the network

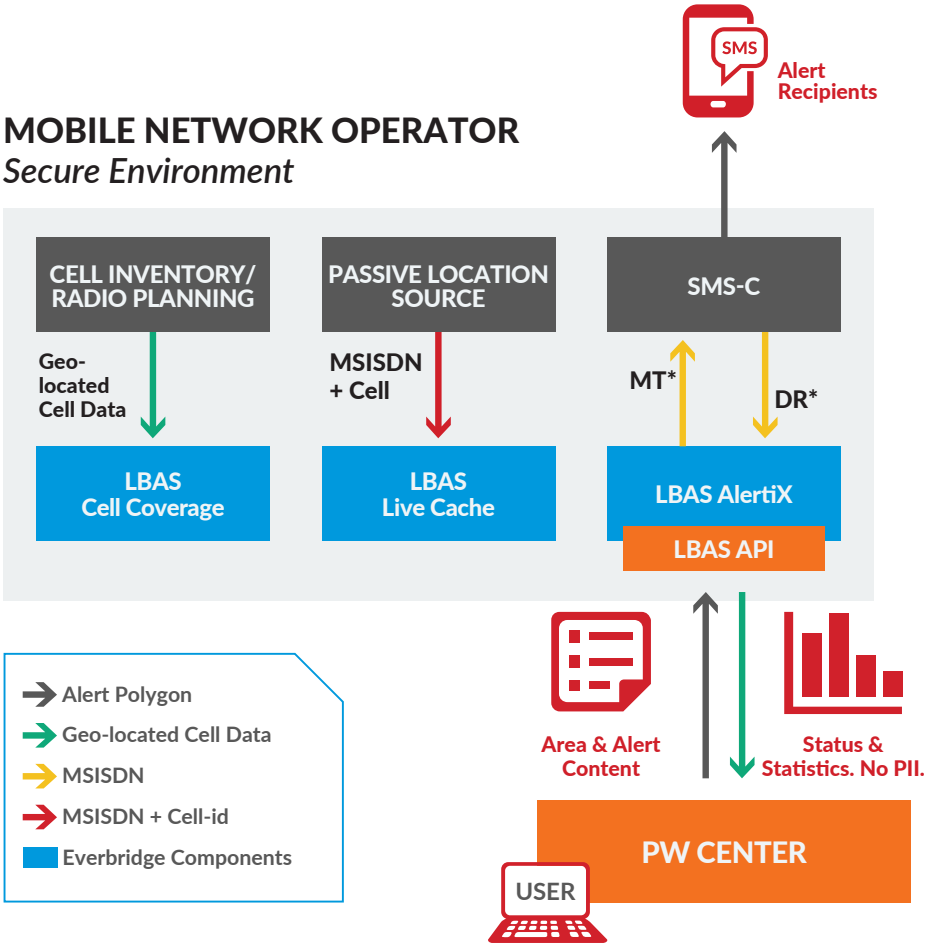
LBAS ZS: this is the component that maps a geographical area (polygon) into a cell-list

Location Source: are the live feeds from the network that gives the mapping between a SIM and the last known used cell

LBAS LC: Keeps the mapping between the SIM and the last known used cell

SMSC: This is the service node in the mobile network that sends the SMS

LBAS AX / LABS API: This is the interface towards the external applications, which provides the secure separation between data processed on the operator side and the external applications initiating alerts



Please note:

+ All personally identifiable information (PII) is kept inside the mobile operators at all times. No user of the system (shown as "PW Application" in drawing above) will at any time be able to get PII.
+ The SMS does not have any information about locations, or even the area, for the SIM cards it sends messages to.
+ The information about the last known used cell for each SIM card in the network is only maintained as a "real-time" snapshot to be used when there is an alarm/warning scenario.
  - In a default system setup, there is no storage of historical information in the system. In other words, the system does not produce any new information about subscribers beyond what is already available in the operator's system.
  - There is no conversion or refinement of the SIM-cell mapping into map coordinates or other accurate location descriptors

Let's Chat

Do you have questions? Would you like to know more about Public Warning?
Get in touch by email **Publicwarning@everbridge.com** to learn more or visit **www.everbridge.com**

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Common Questions and Misconceptions

How do you know my location?

We don't. But your mobile operator knows on which cell (mobile tower) your SIM-card is or was last used. That's how mobile phones work.

The users of our system who are sending the alert will never be able to see the phone number or location on individual recipients. Only the count of subscribers and statistics are exposed outside the mobile network.

Does this require access to my phone?

No. The location is based on "passive" data from the mobile network. The only interaction with your phone is the alert itself, which is sent through the mobile network as an ordinary SMS. Location based SMS does not use the GPS or any other location service on the phone.

Is this compatible with GDPR requirements?

Yes. Everbridge does not collect any PII, but uses data already stored by the mobile operator. This data is never exposed outside the mobile network and never shared with any 3rd parties. To ensure compliance with the GDPR a data processing agreement (DPA) is always signed between Everbridge and the mobile operators.

Can someone identify an individual from looking at the statistics?

No. We have taken several measures to avoid this. For instance, if the number of subscribers on a given cell/tower/area or from a country falls below a certain threshold (i.e. 20 subscribers) the count of the subscribers is not returned at all.

Can I trust that the alert is real?

Yes. Because the alert is sent as SMS, the originator field (sender id) can be defined either as a phone number or an alphanumeric string up to 11 characters. While normal SMS may be susceptible to 'spoofing' when a non-reliable sender uses a fake sender id through a commercial SMS provider, this is not possible with Everbridge LB-SMS. Everbridge is directly integrated with the mobile operators SMSC and works with them to make sure that sender id's are blocked for any other usage in the network. Everbridge recommends using a well known sender id, such as the local emergency number (i.e. '112') for critical alerts.

Can I trust it will work in an emergency?

Yes. The Everbridge LB-SMS system is typically deployed with full site redundancy and monitored 24/7 for a guaranteed uptime of 99.99%. If any component of the system fails, there is always another ready to take its place. Everbridge recommends that the system is throroughly tested at regular intervals. The system comes with various ways to test the full value chain of the system – but without actually sending live SMS to recipients. Together with other security measures such as role based user access and password verification before sending, regular tests and simulations ensures that the system will work as expected when needed.

Is there a risk that someone hacks the system and finds my location?

No. This would require hacking the core network of the mobile operator which is of course safeguarded in every possibly way by the mobile operators themselves. Our servers are installed alongside the most sensitive components of the mobile network and only a very limited set of personell will have access to it.

ABOUT EVERBRIDGE

Everbridge, Inc. (NASDAQ: EVBG) is the global leader in critical event management and enterprise safety software applications that automate and accelerate an organization's operational response to critical events in order to keep people safe and businesses running. Everbridge is based in Boston and Los Angeles with additional offices in Lansing, San Francisco, Beijing, Kolkata, London, Oslo, Singapore, and Stockholm.

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