Android Emergency Location Service

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Questions? Contact **android-emergency-location@google.com**
Web site: **crisisresponse.google/els**

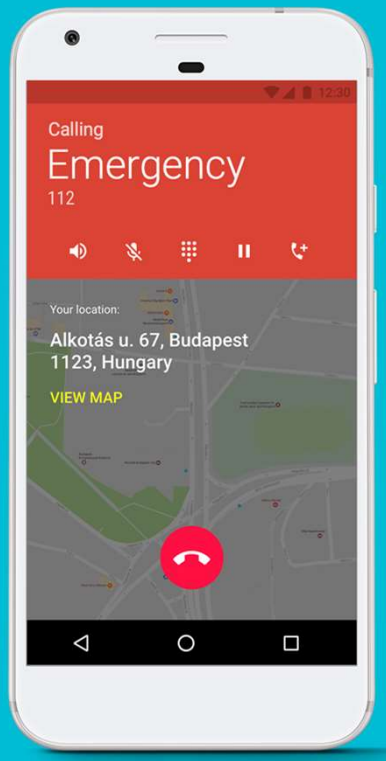
android

Android Emergency Location Service (ELS)

Save lives by sending enhanced emergency location directly from Android handsets to emergency services without user interaction, **as a supplemental service**.

- It just works - regularly updated, requires no special hardware, no app install and no user action.
- **Supported in > 99% of existing Android phones** (Android OS 4.0/Ice Cream Sandwich + Google Play Services).
- Easy to integrate with emergency services infrastructure.
- **Free for all partners**.

android



- **14 countries**
- **130+ million people**
- **200k+ calls/ day**

Deployment partners:

- Carriers/operators
- Emergency infrastructure providers
- Government entities

FCC Roadmap

2015	Horizontal Accuracies	Vertical Accuracies
2016	40% within 50 meters	
2017	50% within 50 meters	Carriers must deliver uncompensated barometric pressure data available to the PSAP if available on the handset. And develop a vertical accuracy standard to be approved by the FCC.
2019	70% within 50 meters	**Google is here today**
2020	80% within 50 meters	• Implement either coordinate or dispatchable address approach to meet the FCC approved standards in the top 25 markets. • 50% of handsets must be Z capable
2022	No additional requirements	• Deploy dispatchable addresses in the top 50 markets • 100% of handsets must be Z capable

Source: Wireless E911 Location Accuracy Requirements, FCC, Feb 3, 2015

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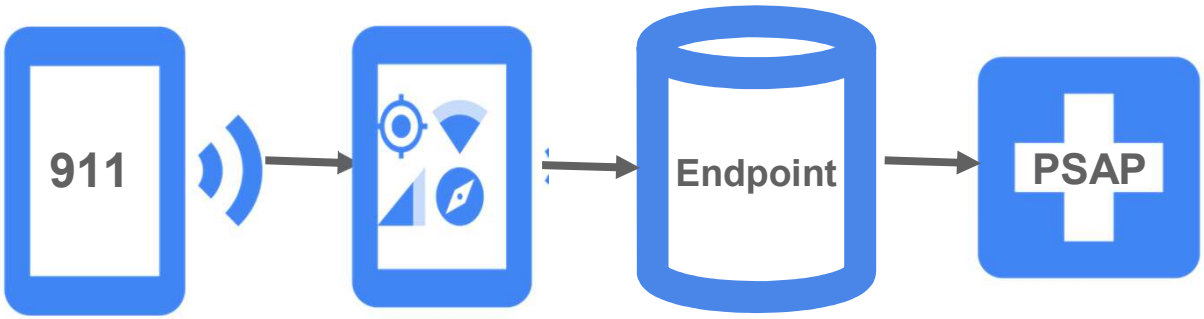
Emergency Location Data Flow



Emergency call initiated by Android device

Location computed on device

Location sent directly to emergency services through endpoint (maintained by ELS Partner) per partner-specified configuration (MCC/MNC, etc)

PSAP (Public Safety Answering Point): call center & dispatch control for emergency services

Endpoint: a SMSC or HTTPS server maintained by partner that can receive emergency location information.

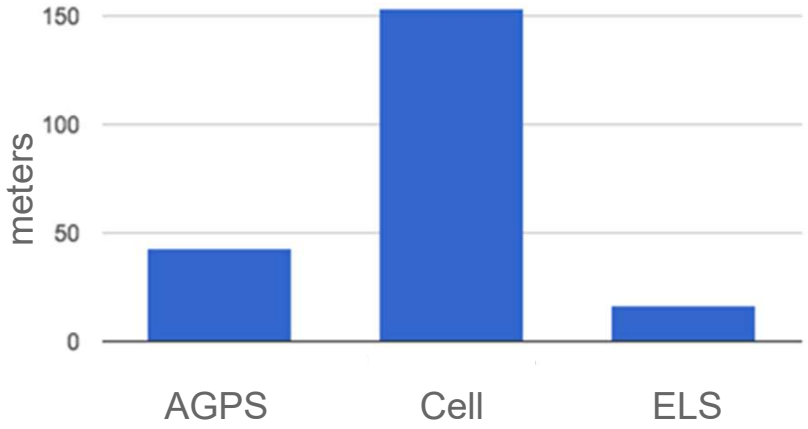
MCC/MNC: mobile country code/mobile network code

AML - Advanced Mobile Location, open standard for sending emergency location (supported by Android ELS)

Indoor Test Results

Tier 1 US Carrier - 100 calls

- Planning on adopting ELS in the next couple months



	Yield	67th Percentile Error	90th Percentile Error
AGPS	63.11%	43m	107m
Cell	36.89%	154m	165m
ELS	**90.2%**	**17m**	**18m**

Note: Results may vary depending on country/region, internet & mobile infrastructure, etc.

Configuration/Control

Google is able to remotely configure populations of devices in coordination with ELS partners.

When is ELS activated?

How is location gathered?

Where is location sent?

Sample configuration

Emergency Number	911/112
SIM MCC	234
Network MCC/MNC	234XX, 234YY
Battery Level	>5%
Location Gathered	10s, 20s into call
Location Sent	Data SMS to 112

Success Stories

New Zealand

- A group tramping in the Bay of Plenty had become lost. One group member was injured, they had no food or water. Group called 111 from a mobile phone (which had a low battery), triggering a GPS record using ELS (with an **accuracy of six meters)**. Police Search & Rescue were dispatched and safely walked the group out of the bush a couple of hours later. Previously the group might have spent the night in the bush before Search & Rescue could be engaged.

Estonia

- An emergency call was received in a small town in Estonia; children were home alone with a toaster on fire! The children knew their flat number and street name but not the complete address, nor any relative's phone number. The call-taker was able to use the **30m radius location** from ELS to find the right house and immediately dispatch rescue and ambulance units to arrive quickly.