

New Technology Improves 9-1-1 Accuracy

CURRENT SITUATION

- Wireless 9-1-1 location technology is not accurate enough.
- People are moving from landline phones to only using wireless devices, and more calls are being made while indoors. In fact, over 70% of 9-1-1 calls are from mobile phones, according to the Federal Communications Commission.
- The need exists to improve indoor location accuracy in order to provide faster and more reliable 9-1-1 response to wireless callers.

Addressing the current situation: In January 2015, the FCC passed new rules to increase wireless location accuracy that for the first time included elevation.

Public safety in action: 9-1-1 must begin to prepare to receive elevation and indoor 9-1-1 call locations with the ultimate goal of improving emergency response.

PILOT PROJECT



PILOT PROJECT IN ACTION

Completed in December 2016, the pilot project tested mobile device enhanced hybrid locations at the Frisco Communications Center in NCTCOG using smartphones with RapidSOS configuration in the operating system for placing test 9-1-1 calls and a new GeoComm PSAP mapping application with an interface to RapidSOS.

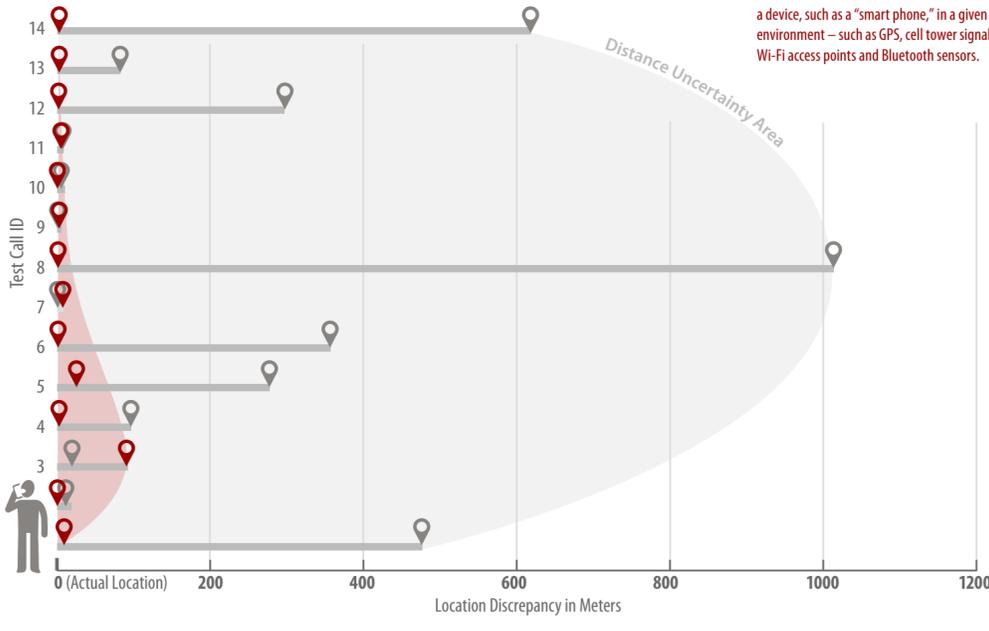
The intent of the test was to determine the best map data configurations for use in mapping device enhanced locations in a manner that will enable increased efficiencies in emergency response through better location identification.

TEST CALL RULES

- Test calls were placed from multiple devices.
- There were team members in the field and team members in the PSAP to record and capture the testing information.
- A team member was responsible for taking photos of the location, as well as measuring and marking the floor plan while in the field.
- GeoComm and RapidSOS team members were responsible for placing and documenting the test calls, as well as executing technical aspects of the test.
- A PSAP received the test calls.

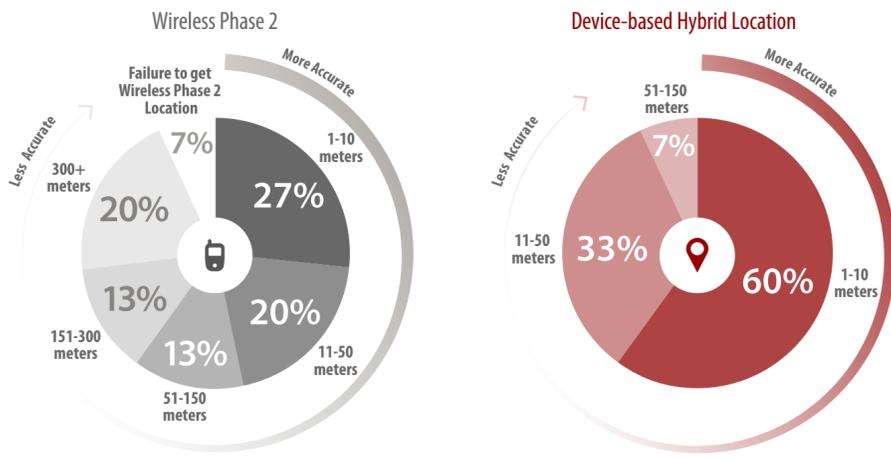
RESULTS

Device-based hybrid location (red pin), Wireless Phase 2 location (grey pin)



Device-based hybrid is an estimation method that typically utilizes either a selection or a combination of location methods available to a device, such as a "smart phone," in a given environment – such as GPS, cell tower signals, Wi-Fi access points and Bluetooth sensors.

INDOOR CALL LOCATION ACCURACY DIFFERENCES BY TECHNOLOGY



TEST CALL SHOWS DISPATCHABLE LOCATION ACCURACY

CALL LOCATION DETAIL

Dispatchable location provides the address or other critical location information for first responders such as building name, floor, unit, room & seat.

Data Source: NCTCOG and City of Frisco, TX

PILOT PROJECT CONCLUSIONS

- The pilot project findings indicate that device-based hybrid location technology can provide a faster and more accurate indoor location of an emergency.
- In all test scenarios, device-based hybrid caller location was available by the time traditional Wireless Phase 1 information came in, and the caller location was on average more accurate than traditional Wireless Phase 2 mapping efforts.

Use of the technology in a PSAP setting would result in a **more efficient, effective, and accurate emergency response.**

"My first reaction when I saw the demonstration was 'Wow,'" said Christy Williams, Director 9-1-1, North Central Texas Council of Governments. "To see a dot show up on the map with the exact location of the emergency, literally showing to the left or right of a staircase was truly amazing. I've never seen anything like this before for mobile calls — this is huge for telecommunicators who are trying to save lives."

Pilot project location testing - check out the excitement!

