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The Very Latest Developments - Wireless 9-1-1 Location Accuracy & Text-to-9-1-1

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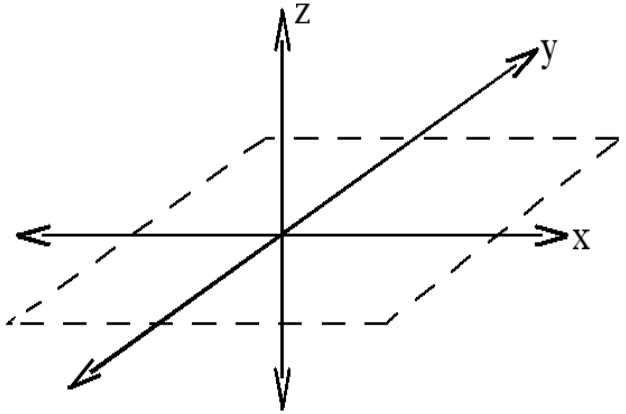
Evolving 9-1-1 Caller Trends

- Consumers are replacing traditional landline phones with wireless devices, and many of the calls on these devices are placed while indoors
- Even where a wireline telephone is available, the first device reached for to call 9-1-1 is often a cell phone
- The location information currently available for wireless calls from indoor locations lacks any of the address-specific information provided with most wireline calls, and is generally inferior to location information available for outdoor wireless calls
- FCC rules do not apply to indoor wireless 9-1-1 calls

Commission's Proposal for Indoor Location Accuracy

- Horizontal (x- and y-axis) Plane
  - 50 meters, for 67% of 911 calls within 2 years, and 80% of 911 calls within 5 years
- Vertical (z-axis) Plane
  - 3 meters, for 67% of 9-1-1 calls within 3 years, and 80% of 911 calls within 5 years



- An independent test bed would be leveraged to demonstrate the carriers could meet the location accuracy requirements
- PSAPs would have a mechanism in place to file complaints where evidence shows a carrier is not complying with location accuracy requirements, subject to the implementation of re-bid policies

Commission's Proposal for Indoor Location Accuracy

- The Commission crafted additional proposals that would require carriers to:
  - provide PSAPs with a location fix of the wireless indoor 9-1-1 caller within 30 seconds,
  - inform PSAPs of the location technology used to generate the location information for each wireless indoor 9-1-1 call, and
  - report their E911 Phase II call tracking information, with information on the percentage of wireless calls that include Phase II location information

APCO's Comments

- APCO was supportive of the Commission's proposal, but signaled an openness to a consensus approach between carriers and other stakeholders. Such an approach must:
  - Provide meaningful advancements in indoor location accuracy, with an ultimate goal of a dispatchable location;
  - Apply universally to all wireless carriers and across different regions and location types;
  - Contain verifiable requirements with objective and approved testing mechanisms; and
  - Be enforceable by the Commission.

APCO's Comments (Continued)

- In addition, APCO recommended that:
  - the Commission seek an initial indoor accuracy benchmark more precise than 50 meters, or an indoor requirement based on building address and floor information (a "dispatchable location");
  - an independent test bed should be used to test indoor location accuracy technology;
  - The Commission should establish a minimum time to first fix for carriers to transmit location information, balanced with preserving accuracy; and
  - Standards bodies should adopt uniform confidence and uncertainty values and metrics; fix confidence at 90% and permit uncertainty to vary

Text-to-911 Background

- December 2012: Carrier-NENA-APCO Agreement
  - 4 largest carriers agreed to make text-to-911 available by May 15, 2014
- May 2013: Report & Order
  - Required bounce-back by September 30, 2013
- August 2014: FCC Order & FNPRM
  - Required text-to-911 for “covered text providers,” sought further input, established a Task Force on optimal PSAP architecture

What's Required

- "Covered text providers" must, starting December 31, 2014, deliver texts to PSAPs within 6 months of a valid request
- Voice calls always preferred if possible
- Key questions:
  - What is a valid PSAP request?
  - What is a "covered text provider"?
  - What's not yet in place?

Valid PSAP Request

- PSAP has notified the covered text provider that it is technically ready and authorized by governing authority
- FCC plans to create an online database to register text-readiness
- Until then, PSAPs may file electronically with the FCC

"Covered Text Provider"

- Includes cellular service providers
- Providers of "interconnected text messaging services" that enable consumers to send and receive texts using telephone numbers

What's Not Yet in Place

- Texts while roaming
- Location information
- Non-interconnected text messaging
- Texting via non-CMRS networks (WiFi)
- Rich media text services
- Real-time text
- Vehicle telematics services offering text

Additional Proposals

- Covered text providers would be required to deliver "best available" location information within 2 years
- Covered text providers would support roaming
- Applying requirements to non-interconnected text service providers

APCO's Comments

- Supports proposal to require location info & roaming support within 2 years
- Emphasized importance of accurate location information for long-term effectiveness in light of evolving texting technologies and NG9-1-1
- Goal should be dispatchable location

Implementing Text to 9-1-1 Services

- Volume to date is minimal, expansion not yet predictable due to small subset of PSAPs who have implemented.
- Location challenges exist (routing vs. dispatchable)
- Liability and Security Issues

Implementing Text to 9-1-1 Services

- Solution challenges for PSAPs
  - Protocols for complex calls not yet established
  - Triaging calls and data
  - Translation issues (both language and short codes)
  - PSAP operational models vary
  - How do we train and prepare

Implementing Text to 9-1-1 Services

- Current lack of roaming support is a serious impediment to full adoption and effectiveness of text- to-9-1-1 services by both the general public and PSAPs
- To support future texting services, need to ensure interoperability, standardization, & cybersecurity, and consider impact on PSAP operations and need to manage public expectations

Implementing Text to 9-1-1 Services

- Text is here and it is a good thing
- Carriers have built to standard and implemented accordingly
- PSAPs need to train and prepare based on that implementation
- SMS is only the beginning
  - Recent FNPRM seeks comment on enhanced location info; delivery over WiFi; roaming support - - NG9-1-1 and MMES are just around the corner and should provide better solutions for all.

9-1-1 Location Accuracy

- Growing number of 9-1-1 calls are wireless
  - And of these calls, a growing number are being placed from indoors
  - The indoor location case is especially technically challenging
  - Consumer expectations may not match reality

Indoor 9-1-1 Location Accuracy: Other Options

- The Commission proposed "x, y, z" rules to improve 9-1-1 indoor location accuracy, but invited comments on other ways to achieve providing a dispatchable location
- The comment record describes other potential technologies that may lead to a dispatchable location, including:
  - Wi-Fi technology;
  - Beacons;
  - Small cells and femtocells; and
  - Smartphone features such as barometric pressure, compass, accelerometer, etc.

Task Force on Optimal PSAP Infrastructure

- Purpose is to explore whether (1) PSAP consolidation could lead to more efficient and effective operations and (2) state & local governments that divert 9-1-1 fees should be ineligible to participate in FCC committees and working groups

Questions?