ctia™

June 15, 2020

<u>VIA ELECTRONIC FILING</u>

Ms. Marlene H. Dortch, Secretary
Federal Communications Commission
445 Twelfth Street, SW
Washington, DC 20554

> Re: *Ex Parte Presentation, Wireless 9-1-1 Location Accuracy, PS Docket No. 07-114*

Dear Ms. Dortch:

On June 11, 2020, CTIA and member company representatives from the nationwide wireless providers met via telephone with Nicholas Degani and Zenji Nakazawa of Chairman Ajit Pai's office to discuss the benefits of adopting an alternative nationwide z-axis benchmark that will deliver ± 3 meter vertical location information for far more wireless 9-1-1 calls than can be achieved under the FCC's existing benchmark. On June 15, 2020, CTIA and the nationwide wireless providers also met separately with Erin McGrath of Commissioner Michael O'Rielly's office and Travis Litman of Commissioner Jessica Rosenworcel's office. Attachment A lists meeting participants.

The FCC's current z-axis rules were structured around the technology solutions—network-dependent solutions—deemed promising more than five years ago. In light of the limitations of those solutions, the FCC established compliance benchmarks for April 2021 and April 2023 that are limited to the Top 25 / Top 50 CMAs, leaving much of the United States and almost half of Americans without Commission-backed requirements for vertical location information of wireless 9-1-1 calls. Recognizing that location technologies and public safety priorities have evolved since 2015, the *Fifth Further Notice of Proposed Rulemaking* sought comment on "Alternative Options for Z-axis Deployment," including modifying the geographic coverage requirements.[1]

CTIA and the nationwide providers encouraged the Commission to adopt an alternative z-axis framework proposed in the record that expands the geographic coverage requirements to wireless 9-1-1 calls nationwide and recognizes the current state of mobile OS-based solutions to deliver ± 3 meter vertical location information.[2] Specifically, the Commission should allow providers to meet the April 2021 benchmark with z-axis solutions that deliver ± 3 meters nationwide, rather than in just the Top 25 CMAs. In so doing, the Commission can ensure that providers can deliver ± 3 meter vertical location information for twenty times more 9-1-1 calls than the existing benchmark focused on the Top 25 CMAs.

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[1] *Wireless E911 Location Accuracy Requirements*, Fifth Report and Order and Fifth Further Notice of Proposed Rulemaking, 34 FCC Rcd 11592, 11622-23 ¶¶ 71, 74 (2019).

[2] *See* Letter from T-Mobile USA, Inc., to FCC, PS Docket No. 07- 114 (filed Apr. 23, 2020).

As Attachment B shows, adopting a nationwide approach that recognizes the current capabilities of mobile OS-based solutions can yield 40% of 9-1-1 calls producing ± 3 meter z-axis location information by April 2021, while network-dependent solutions in contrast will likely yield only 2% of 9-1-1 calls producing ± 3 meter z-axis location information. Further, by adopting a requirement that increases the target accuracy metric in the Test Bed over time (i.e., 50% in 2021, 70% in 2023 and 80% in 2025),[3] mobile OS-based solutions can yield up to 75% of 9-1-1 calls with ± 3 meter z-axis information nationwide by April 2025, while network-dependent solutions will likely yield only 16% of 9-1-1 calls with ± 3 meter z-axis information.

Stage Za testing showed that an existing mobile OS-based solution can meet this approach—to the benefit of wireless 9-1-1 callers nationwide.[4] In contrast, CTIA and the nationwide providers further noted that, given solutions tested in Stage Z and Stage Za, to date no commercial z-axis solutions have yet been validated to achieve the Commission's current benchmark of ± 3 meters for 80% of calls in the Test Bed across all of the test regions and morphologies.[5] Network-dependent solutions will rely on handset manufacturers for commercial availability, and there is no evidence to suggest that these network-dependent solutions will be integrated by April 2021 given handset manufacturers' privacy-related concerns.[6] To the extent network-dependent solutions require a consumer to download an application or opt-in consent to location tracking, such an approach contravenes the FCC's long-held view that the 9-1-1 rules "do not envision location accuracy as being a product of customer choice."[7] Thus, the participants expressed significant concern that no z-axis solutions are available that achieve the FCC's current April 2021 benchmarks.

Based on the analysis presented in Attachment B, the participants have identified a meaningful alternative that can deliver nearly twenty times the number of calls to 9-1-1 with ± 3 meters vertical location information nationwide in 2021, compared to solutions focused on the current benchmarks in the top U.S. markets. CTIA and the nationwide providers are eager to work with the Commission and public safety stakeholders to deliver ± 3 meter vertical location information for as many wireless 9-1-1 calls as possible, nationwide.

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[3] *See id.*, at 1-2 (explaining the percentage of calls meeting ± 3 meter accuracy would increase in steps: 50% of calls in the Test Bed, nationwide, by April 2021; 70% nationwide by April 2023; and 80% nationwide by April 2025).

[4] *See* Letter from CTIA to FCC, PS Docket No. 07- 114, at 3 (filed Apr. 29, 2020) (CTIA Stage Za Cover Letter) and Attachment, 9-1-1 Location Technologies Test Bed, LLC Test Report for Z-Axis Technology, Stage Za (Report Za).

[5] *Id.*

[6] *See, e.g.,* Comments of Google LLC, PS Docket No. 07- 114, at 8 (filed Feb. 21, 2020); Reply Comments of Google LLC, PS Docket No. 07-114, at 9 (filed Mar. 20, 2020); Letter from Google LLC to FCC, PS Docket No. 07-114, at 3 (filed Nov. 8, 2019); Letter from Apple Inc., to FCC, PS Docket No. 07- 114, at 3 (filed Oct. 29, 2019).

[7] *Revision of the Commission's Rules To Ensure Compatibility with Enhanced 911 Emergency Calling Systems*, Fourth Memorandum Opinion and Order, 15 FCC Rcd 17442, 17459 ¶ 49 (2000).

Pursuant to Section 1.1206 of the Commission's rules, a copy of this letter is being filed in ECFS and provided to the Commission meeting attendees. Please do not hesitate to contact the undersigned with any questions.

Sincerely,

/s/ Matthew Gerst

Matthew Gerst
Vice President, Regulatory Affairs

Attachments

ATTACHMENT A
June 11, 2020 Meeting Attendees to Chairman Pai's Office

Office of Chairman Ajit Pai
Nicholas Degani
Zenji Nakazawa

CTIA
Matthew Gerst
Scott Bergmann
Thomas Sawanobori
Adam Krinsky, Wilkinson Barker Knauer, LLP

AT&T
Joe Marx
Kelly Springer

T-Mobile
Eric Hagerson
Jeanna Green
Ryan Jensen
Ray Rothermel

Verizon
Robert Morse
Christophe Lescanve
Susan Sherwood

June 15, 2020 Meeting Attendees to Meeting with Commissioner O'Rielly's Office

<u>Office of Commissioner Michael O'Rielly</u>
Erin McGrath

<u>CTIA</u>
Matthew Gerst
Thomas Sawanobori
Adam Krinsky, Wilkinson Barker Knauer, LLP

<u>AT&T</u>
Joe Marx
Kelly Springer

<u>T-Mobile</u>
Eric Hagerson
Jeanna Green
Ryan Jensen
Ray Rothermel

<u>Verizon</u>
Robert Morse
Susan Sherwood

June 15, 2020 Meeting Attendees to Commissioner Jessica Rosenworcel's Office

Office of Commissioner Jessica Rosenworcel
Travis Litman

CTIA
Matthew Gerst
Thomas Sawanobori
Adam Krinsky, Wilkinson Barker Knauer, LLP

AT&T
Joe Marx
Kelly Springer

T-Mobile
Eric Hagerson
Jeanna Green
Ryan Jensen
Ray Rothermel

Verizon
Robert Morse
Susan Sherwood

ATTACHMENT B
Analysis of Alternative Nationwide Z-Axis Benchmark
Based on Mobile OS-Based Solutions

Vertical Location for 9-1-1 Callers

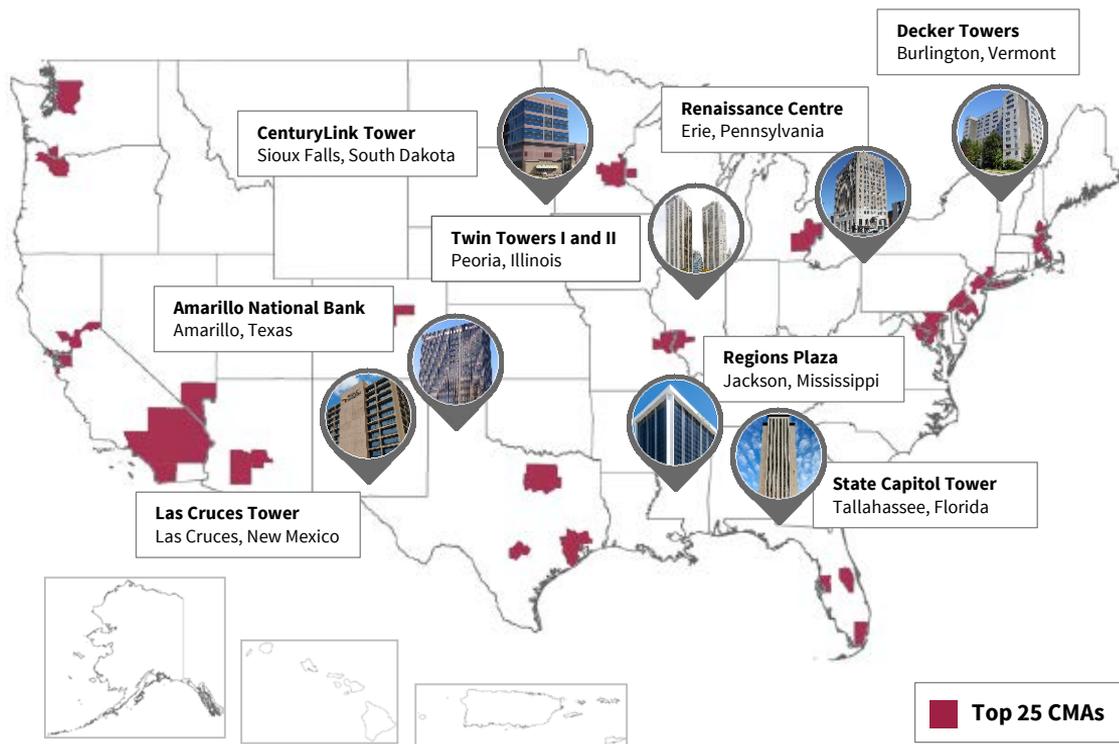Providing ± 3m Location Estimates to 9-1-1 Callers Nationwide Through Mobile OS-Solutions

June 2020

A Solution that Works for 9-1-1 Callers Nationwide

- The wireless industry is focused on providing a ± 3m vertical location estimate to the greatest number of 9-1-1 callers at the earliest possible time, including evaluating any available technologies participating in the Test Bed LLC.

- Mobile OS-based solutions will provide the greatest benefits to consumers.
  - Offer immediate nationwide coverage – not limited geographically to only the top U.S. markets;
  - Leverage commercial technologies that continually improve;
  - Enable backwards compatibility with the majority of existing devices;
  - Will work in many devices regardless of whether a device has a barometer (e.g., lower-end devices);
  - No consumer action is required; and
  - Will not introduce new privacy questions related to location tracking.

- Mobile OS-based solutions will lead to more 9-1-1 calls with ± 3m vertical location information for public safety agencies—not only in 2021, but also beyond.

Compliance with the FCC Rules Has Limited Scope for 9-1-1 Callers

Decker Towers
Burlington, Vermont

Renaissance Centre
Erie, Pennsylvania

CenturyLink Tower
Sioux Falls, South Dakota

Twin Towers I and II
Peoria, Illinois

Amarillo National Bank
Amarillo, Texas

Regions Plaza
Jackson, Mississippi

Las Cruces Tower
Las Cruces, New Mexico

State Capitol Tower
Tallahassee, Florida

■ **Top 25 CMAs**

As of the first vertical location compliance milestone in April 2021, the FCC's rules leave 96% of the country's geography and 58% of its population without ± 3m vertical 9-1-1 location data.

FCC rules should allow solutions that will deliver more 9-1-1 calls nationwide with ± 3m z-axis location information by April 2021.

Characteristics of Network Dependent and Mobile OS Solutions

Network Dependent Solutions Utilize Beacons and Barometers

Special towers with good signal (limited reach)

Built-in barometric pressure sensors (limited reach)

Consumer-initiated downloads where not integrated

Calibration and periodic recalibration may require device tracking

New privacy considerations among consumers, OS-provider, wireless service providers and proprietary solution provider

Mobile OS Solutions Utilize Many Technologies

NO special towers required

NO barometric pressure sensors required

NO consumer-initiated downloads

NO automatic calibration and periodic recalibration requiring device tracking

NO new privacy considerations among consumers, OS-provider, carrier and proprietary solution provider

OS Solutions Yield Higher Percentage of 9-1-1 Calls with ± 3m Vertical Location Information When Factoring the Assumed Performance and Availability of Network Dependent Solutions

	Mobile OS-based Solutions	Network Dependent Solutions
April 2021	**40%** of 9-1-1 calls nationwide producing ± 3m z-axis location	**2%** of 9-1-1 calls within supported geographic area (Top 25 CMAs) producing ± 3m z-axis location
	• 50% target accuracy	• 80% target accuracy
	• 80% capable devices	• 50% capable devices
	• 100% geographic availability	• 42% geographic availability (excluded in above call estimate)
	• 100% solution availability on capable devices	• 5% solution availability on capable devices (opt-in required) *
April 2023	**60%** of 9-1-1 calls nationwide producing ± 3m z-axis location	**8%** of 9-1-1 calls within supported geographic area (Top 50 CMAS) producing ± 3m z-axis location
	• 70% target accuracy	• 80% target accuracy
	• 85% capable devices	• 65% capable devices
	• 100% geographic availability	• 55% geographic availability (excluded in above call estimate)
	• 100% solution availability on capable devices	• 15% solution availability on capable devices (opt-in required) *
April 2025	**75%** of 9-1-1 calls nationwide producing ± 3m z-axis location	**16%** of 9-1-1 calls within supported geographic area (Top 50 CMAs) producing ± 3m z-axis location
	• 80% target accuracy	• 80% target accuracy
	• 94% capable devices	• 80% capable devices
	• 100% geographic availability	• 55% geographic availability (excluded in above call estimate)
	• 100% solution availability on capable devices	• 25% solution availability on capable devices (opt-in required) *

* Estimate of likely uptake on proprietary location applications and consumer opt-in for location monitoring.

The FCC Should Adopt Rules that Benefit 9-1-1 Callers Nationwide

- After initially proposing technology mandates in the 1990s, the FCC has a successful record of adapting its location accuracy rules to enable wireless providers to choose among the best available technologies for 9-1-1 callers.
  - Horizontal:
    - $1^{st} - 3^{rd}$ Orders (1996 - 2010): E-911 Phase II network-based and handset-based rules evolved to provide for different location accuracy solutions on different timelines
    - 4th Order (2015): Phased-in 50m accuracy based on a mix of available technologies, including GPS and Device-Based Hybrid (DBH)
  - Vertical:
    - 4th Order (2015): Dispatchable Location and z-axis rules provide alternative approaches to vertical location based on emerging technologies
    - 5th Order (2019): Rules focused on network dependent solutions to meet +/- 3m vertical location estimate in the top 25 and then the top 50 CMAs, leaving much of the U.S. without vertical location information

- In a 6th Order, the FCC should draw from its experience of enabling wireless providers to take advantage of the best available technologies by adopting z-axis rules that recognize the benefits of mobile OS-based vertical location solutions:
  - Nationwide coverage, including rural areas; not limited to a subset of CMAs
  - Backward compatibility with most handsets in the marketplace, including devices that do not have barometric sensors (e.g., often used by low-income consumers)
  - Capability to provide ± 3 meters to far more 9-1-1 calls, with a phased-in accuracy target in the Test Bed