

REDACTED COPY

January 28, 2013

VIA ELECTRONIC SUBMISSION

Marlene H. Dortch
Secretary
Federal Communications Commission
445 12th Street, S.W.
Washington, D.C. 20554

**Re: Progeny LMS, LLC
Request for Confidential Treatment
Ex Parte Notice of Progeny LMS, LLC
WT Docket No. 11-49**

Dear Ms. Dortch:

Progeny LMS, LLC (“Progeny”), by its counsel and pursuant to Sections 0.457 and 0.459 of the Commission’s Rules, 47 C.F.R. §§ 0.457, 0.459, hereby requests that the redacted portions of the attached *Ex Parte* Notice of Progeny LMS, LLC (“Notice”) be treated as confidential and be withheld from public inspection. An unredacted version of the attached Notice was filed with the Commission in this docket on January 15, 2013, is marked as confidential in ECFS, and this request relates directly to that filing. Progeny requests that this letter and the attached redacted version of the Notice be included in the public record.

Pursuant to Section 90.353(d) of the Commission’s rules¹ and paragraph 29 of the Commission’s *Waiver Order*,² Progeny is required to demonstrate that its Multilateration Location and Monitoring Service (“M-LMS”) network does not cause unacceptable levels of interference to Part 15 devices. On January 27, 2012, Progeny filed with the Commission the

¹ See 47 C.F.R. § 90.353(d).

² See Request by Progeny LMS, LLC for Waiver of Certain Multilateration Location and Monitoring Service Rules, *Order*, DA 11-2036, ¶ 29 (Dec. 20, 2011) (“*Waiver Order*”) (granting conditional waivers of Sections 90.155(e) and 90.353(g) of the Commission’s rules).

results of testing that were conducted in 2011 on behalf of Progeny by an independent third party testing firm, Spectrum Management Consulting Inc. (“SMC”).³

At the request of the Commission, Progeny subsequently agreed to additional testing on a joint basis with three entities: Itron; Landis+Gyr Company (“Landis+Gyr”); and the Wireless Internet Service Providers Association (“WISPA”). The resulting reports address the tests that were conducted with each of the parties. One of the reports, the one prepared jointly with Itron, includes details about the equipment employed in the tests, its capabilities, and its performance, matters that Itron believes are commercial trade secrets. Progeny and Itron therefore jointly requested confidential treatment for the redacted portions of the test report.

The Commission subsequently placed the test reports on public notice for comment and parties filed comments on the reports on December 20, 2012. Progeny filed the attached Notice on January 15, 2013 to disclose its meeting with a member of the Commission staff regarding the test report and the comments. In discussing the Progeny/Itron joint test report, the attached Notice addressed information that Itron redacted from the test report and claims to be confidential.

In support of this request, and in accordance with the requirements of Section 0.459(b) of the Commission’s rules, 47 C.F.R. § 0.459(b), Progeny submit the following:

0.459(b)(1): Progeny seek confidential treatment for certain portions of the attached Notice, primarily the distances between the Itron ERT and CCU devices tested and the injected signal levels of the PER testing.

0.459(b)(2): Progeny filed the Notice in WT Docket Number 11-49 following joint testing that Progeny undertook at the request of the Commission staff and in furtherance of the requirement that Progeny must demonstrate that its M-LMS network does not cause unacceptable levels of interference to Part 15 devices.

0.459(b)(3): Progeny’s Notice references information from the Part 15 Joint Test Report that Itron claims is highly sensitive, confidential, and proprietary commercial and technical information. Itron has informed Progeny that it treats such information as highly confidential and does not disclose it to third parties absent a Nondisclosure Agreement (“NDA”). In fact, Itron required Progeny to enter into an NDA prior to gaining access to Itron’s technology and information. As such, Itron has informed Progeny that the redacted

³ See *Coexistence of M-LMS Network and Part 15 Devices*, Spectrum Management Consulting Inc. (Jan. 27, 2012) (“*Part 15 Field Test Report*”) (included as an attachment to *Letter from Bruce A. Olcott, Counsel to Progeny LMS, LLC, to Marlene H. Dortch, Secretary, Federal Communications Commission*, WT Docket No. 11-49 (Jan. 27, 2012) (“*Progeny Part 15 Field Test Report Filing*”).

information in the Notice qualifies as material that “would customarily be guarded from competitors” within the meaning of Section 0.457(d)(2) of the Commission’s rules. In addition, Itron believes that the redacted portions of the Notice would be protected from disclosure under the Freedom of Information Act (“FOIA”) as “trade secrets and commercial or financial information obtained from a person and privileged or confidential.” 5 U.S.C.A. § 552(b)(4).

0.459(b)(4): The redacted portions of the attached Notice contain information that Itron believes are trade secrets and confidential information regarding the design and operation of Itron’s AMR networks and devices. The market for AMR equipment is reportedly highly competitive and Itron indicates that it must protect its trade secrets in order to remain competitive with other providers of AMR equipment and services.

0.459(b)(5): Itron has informed Progeny that disclosure of the confidential information could compromise the ability of Itron to compete successfully with other providers of AMR equipment and services in this highly competitive industry. As a result, Itron has informed Progeny that the release of any portion of this information could compromise Itron’s competitive edge in the AMR equipment industry, resulting in substantial competitive harm to Itron.

0.459(b)(6): Itron has indicated to Progeny that it does not permit the dissemination of its confidential trade secrets and proprietary information regarding its AMR equipment and methodologies to non-employees without the execution of a confidentiality agreement. Furthermore, all such confidentiality agreements require third party recipients of the information to request confidential treatment of the information as a part of any submission of any portion of the information to government agencies, such as the Commission. The NDA that Itron required Progeny to enter into included such a provision.

0.459(b)(7): The information contained in the attached Notice is not available to the public.

0.459(b)(8): Progeny requests that the Commission permanently withhold the redacted information contained in the attached Notice.

For the foregoing reasons, Progeny respectfully request that the redacted portions of the Notice be granted confidential status and be withheld from public inspection. If confidential treatment is not granted for these redacted portions of the attached Notice, Progeny request that all copies of the Notice be returned to Progeny.

Marlene H. Dortch
January 28, 2013

Please let us know if you have any questions.

Respectfully Submitted,

/s/ Bruce A. Olcott

Bruce A. Olcott
Squire Sanders (US) LLP
1200 Nineteenth Street, N.W.
Suite 300
Washington, D.C. 20036
(202) 626-6615
Counsel to Progeny LMS, LLC



Squire Sanders (US) LLP
1200 19th Street, NW
Suite 300
Washington, D.C. 20036

O +1 202 626 6600
F +1 202 626 6780
squiresanders.com

Bruce A. Olcott
T +1 202 626 6615
bruce.olcott@squiresanders.com

January 15, 2013

BY ELECTRONIC DELIVERY

Marlene H. Dortch
Secretary
Federal Communications Commission
445 12th Street SW
Washington DC 20554

Re: Progeny LMS, LLC
Permitted Oral *Ex Parte* Presentation
WT Docket No. 11-49

Dear Ms. Dortch:

On January 11, 2013, representatives of Progeny LMS, LLC (“Progeny”) met with Renee Gregory, legal advisor to FCC Chairman Julius Genachowski to discuss the results of additional testing conducted to demonstrate Progeny’s compliance with Section 90.353(d) of the Commission’s rules. Participating in the meeting on behalf of Progeny were Gary Parsons and the undersigned. During the meeting, the participants discussed the results of additional tests that were jointly conducted with Itron, Inc., Landis+Gyr Company, and the Wireless Internet Service Providers Association to demonstrate that Progeny’s Multilateration Location and Monitoring Service (“M-LMS”) network does not cause unacceptable levels of interference to Part 15 devices.

It was highlighted during the meeting that, in each of the joint tests that were conducted, the Part 15 device under test remained fully capable of sending and receiving its desired data using the same interference mitigation techniques that are used by Part 15 devices to withstand or avoid interference from other Part 15 devices in the 902-928 MHz band. In most of the joint test conditions, Part 15 devices were able to send and receive data using spectrum across the entire 902-928 MHz band, including the 4 MHz of spectrum used by Progeny’s position location service. In worst case test conditions, with a Part 15 receiver outdoors, on an elevated pole that was adjacent to a Progeny transmitter, although the tested device showed reduced capability to transfer data in the specific 4 MHz of spectrum used by Progeny’s service, the Part 15 device

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was still fully capable of using frequency hopping, automatic channel selection, and other capabilities to transfer the desired data in other portions of the band without disruption or overload to the device. The joint tests therefore reaffirmed Progeny's previous demonstration that its M-LMS network does not cause unacceptable levels of interference to Part 15 devices.

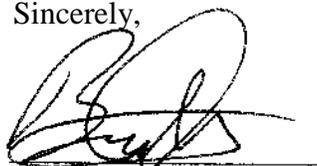
Progeny's position location service is able to operate compatibly with Part 15 devices because of the significant interference mitigation techniques that Progeny employed in the design of its network, including the use of a low duty cycle and broadcast-only transmissions. These mitigation measures constitute substantial concessions on the part of Progeny as compared to the M-LMS network design that is specified in the Commission's rules.

Progeny also highlighted the fact that it has completed construction and has brought into operation its initial M-LMS networks in 39 of its largest licensed Economic Areas ("EA"), including a fully deployed network in the San Francisco Bay Area, portions of which have been in operation for nearly three years without resulting in harmful interference to Part 15 devices.

Progeny also discussed its recent participation in the indoor location accuracy test bed that was conducted in the San Francisco Bay Area under the direction of the Commission's Communications Security, Reliability, and Interoperability Council ("CSRIC"). The results of these indoor location accuracy tests will be published by CSRIC during the first quarter of 2013 and Progeny anticipates that the results will show that Progeny's service can provide a high level of indoor location accuracy that could benefit significantly the capabilities of emergency first responders to locating and assisting wireless callers to E911.

The attached presentation was distributed and discussed during the meeting. Thank you for your attention to this matter. Please contact the undersigned if you have any questions.

Sincerely,



Bruce A. Olcott
Counsel to Progeny LMS, LLC

M-LMS Position Location Network

Meeting With Renee Wentzel

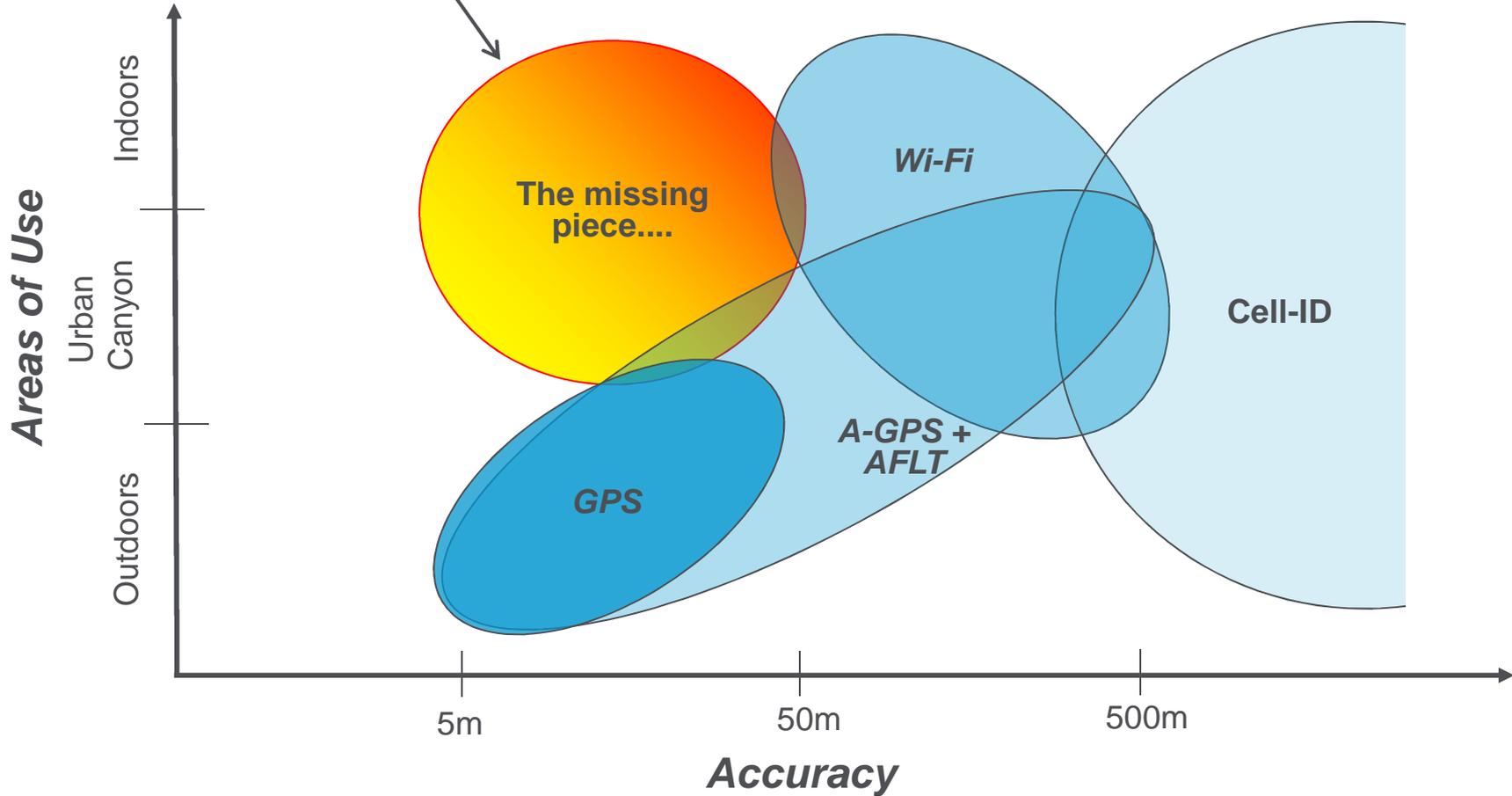
January 11, 2013

NextNav LLC & Progeny LMS LLC

High Precision Urban and Indoor Positioning Services

Positioning Technology State of Affairs

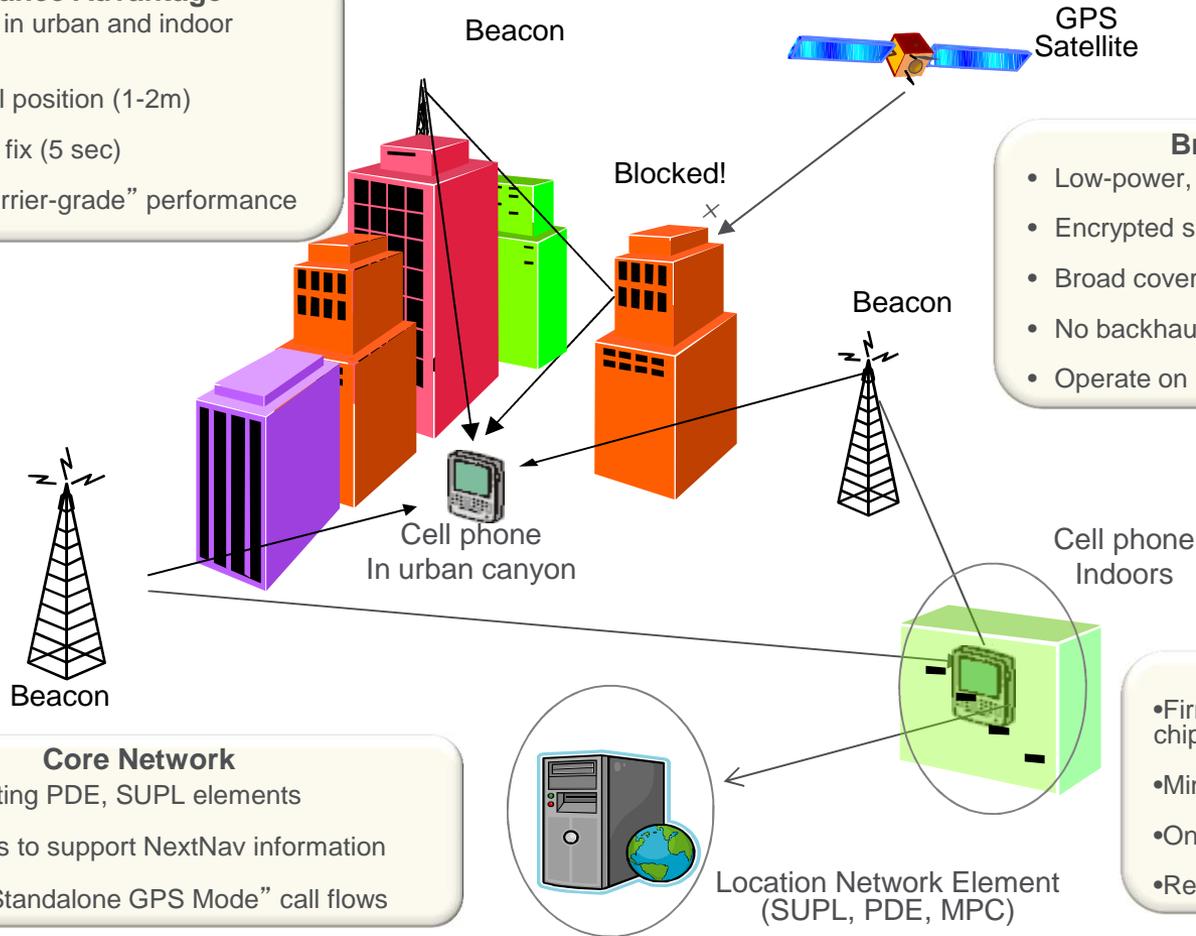
There is no reliable, high-precision solution where mobile devices are used today



Progeny Metro Overlay Deployment

Performance Advantage

- Precise location in urban and indoor environments
- Accurate vertical position (1-2m)
- Fast time to first fix (5 sec)
- Dependable “carrier-grade” performance



GPS Satellite

Beacon

Blocked!

Beacon

Cell phone
In urban canyon

Cell phone
Indoors

Beacon

Core Network

- Utilizes existing PDE, SUPL elements
- Modifications to support NextNav information
- Similar to “Standalone GPS Mode” call flows

Location Network Element
(SUPL, PDE, MPC)

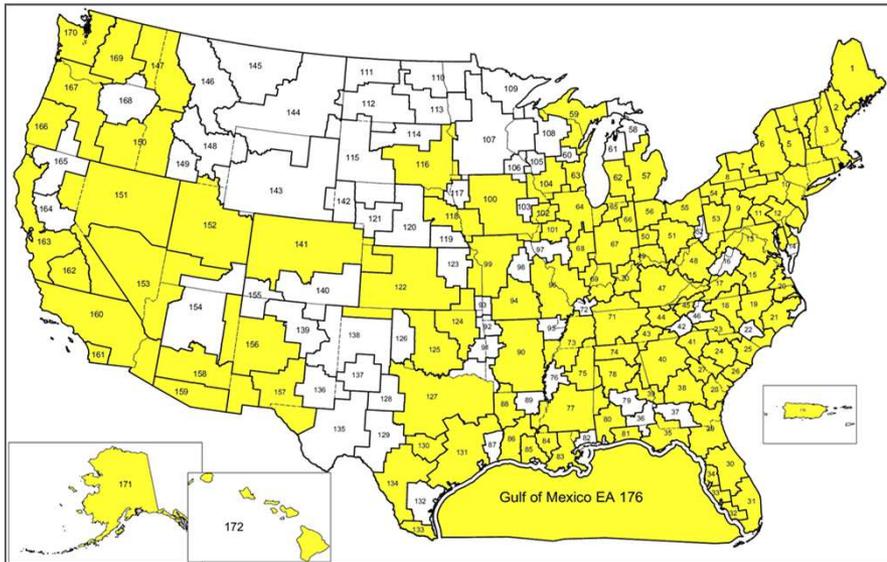
Broadcast Beacons

- Low-power, highly synchronized
- Encrypted signal
- Broad coverage from minimal sites
- No backhaul, small form factor
- Operate on licensed spectrum

Receivers

- Firmware upgrade to “typical” GPS chipsets
- Minimal handset integration cost
- On-device computation of location
- Reduced power consumption

Progeny LMS Licensed Spectrum

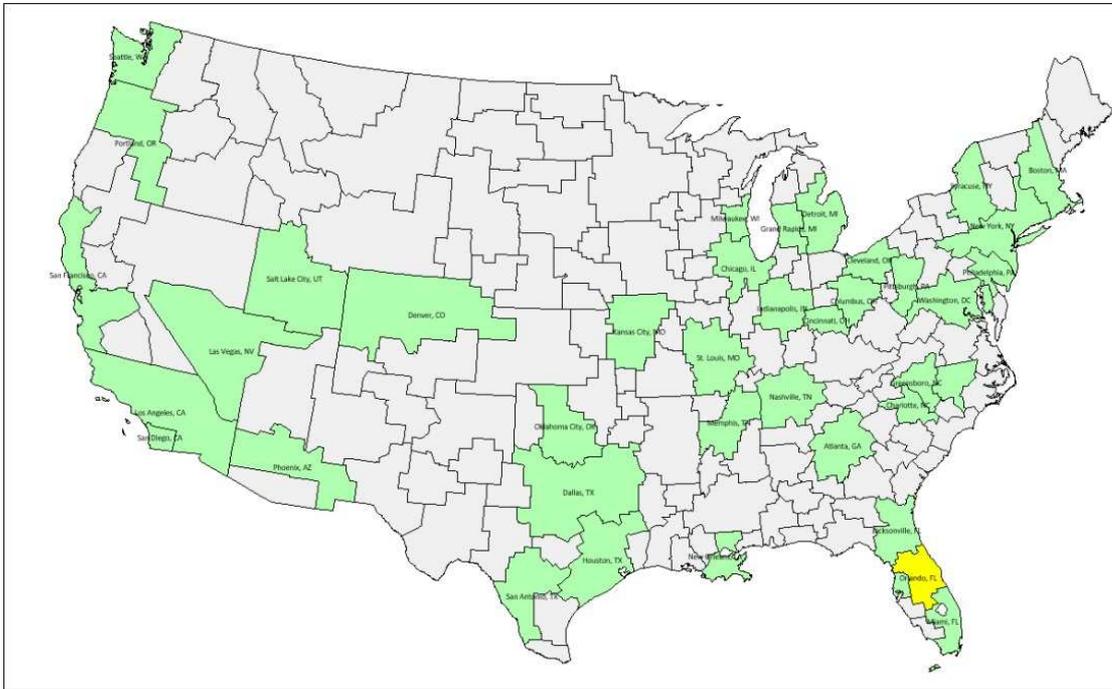


- Approximately 93% POP coverage
- Spectrum designated for location services in 902-928 MHz band

Managed Location Network

- Every network element is owned, operated and managed by NextNav
- Broadcast beacon locations selected to optimize location precision
- Use of owned assets and licensed spectrum ensures performance
- Accuracy and dependability suitable for public safety applications (e.g., E911)
- Bay Area test network operational; multi-market network deployment underway

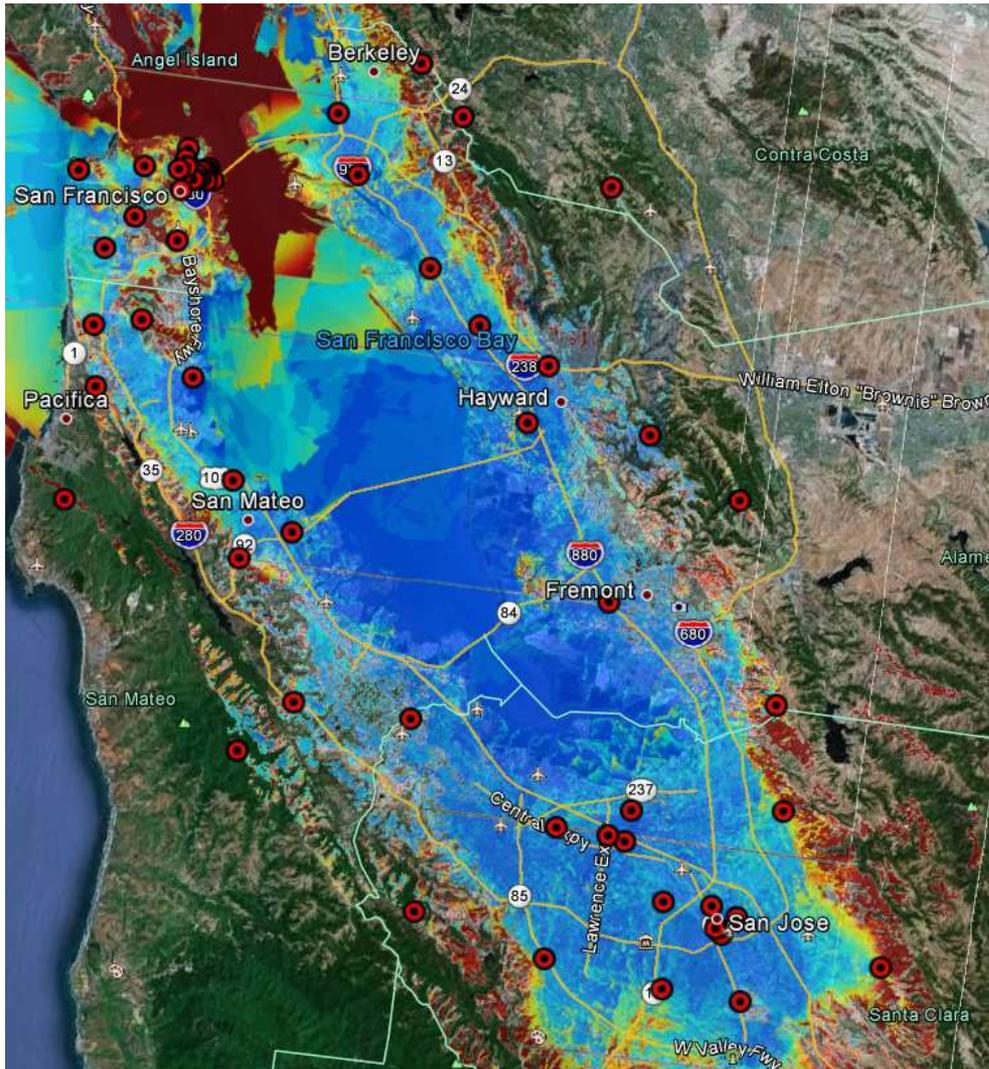
Deployment Status – Initial 40 Markets



-  Complete & On-air (39 Markets)
-  Complete, Pending Power (1 Market)

- Initial deployment in top 40 licensed EAs nearly completed, with a fully-deployed service capability expected in 2014
- Top 40 EAs contain over 190MM POPs, with approximately 150MM POPs in metro areas
- Coverage to grow metros beyond top 40 following launch of service

San Francisco Initial Market Coverage



- 900+ square miles of coverage
- Average beacon separation 8 - 10km
- Network optimized for coverage and location accuracy

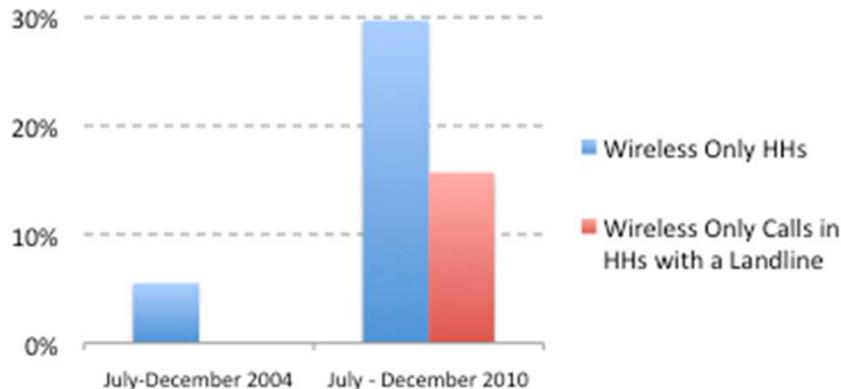
Performance Key

Good  Best

 M-LMS Beacons

- In Tarrant County, TX, in 2001, 34% of all E911 calls were placed from mobile devices; by 2010 more than 80% were from mobiles
- Mobile devices today are predominately used indoors, with as many as 70% of voice calls and 80% of data sessions occurring within a structure¹
- This is the result of massive adoption of cellular devices, and a continuing trend of fixed line replacement²

Wireless-Only Households, 2004 - 2010

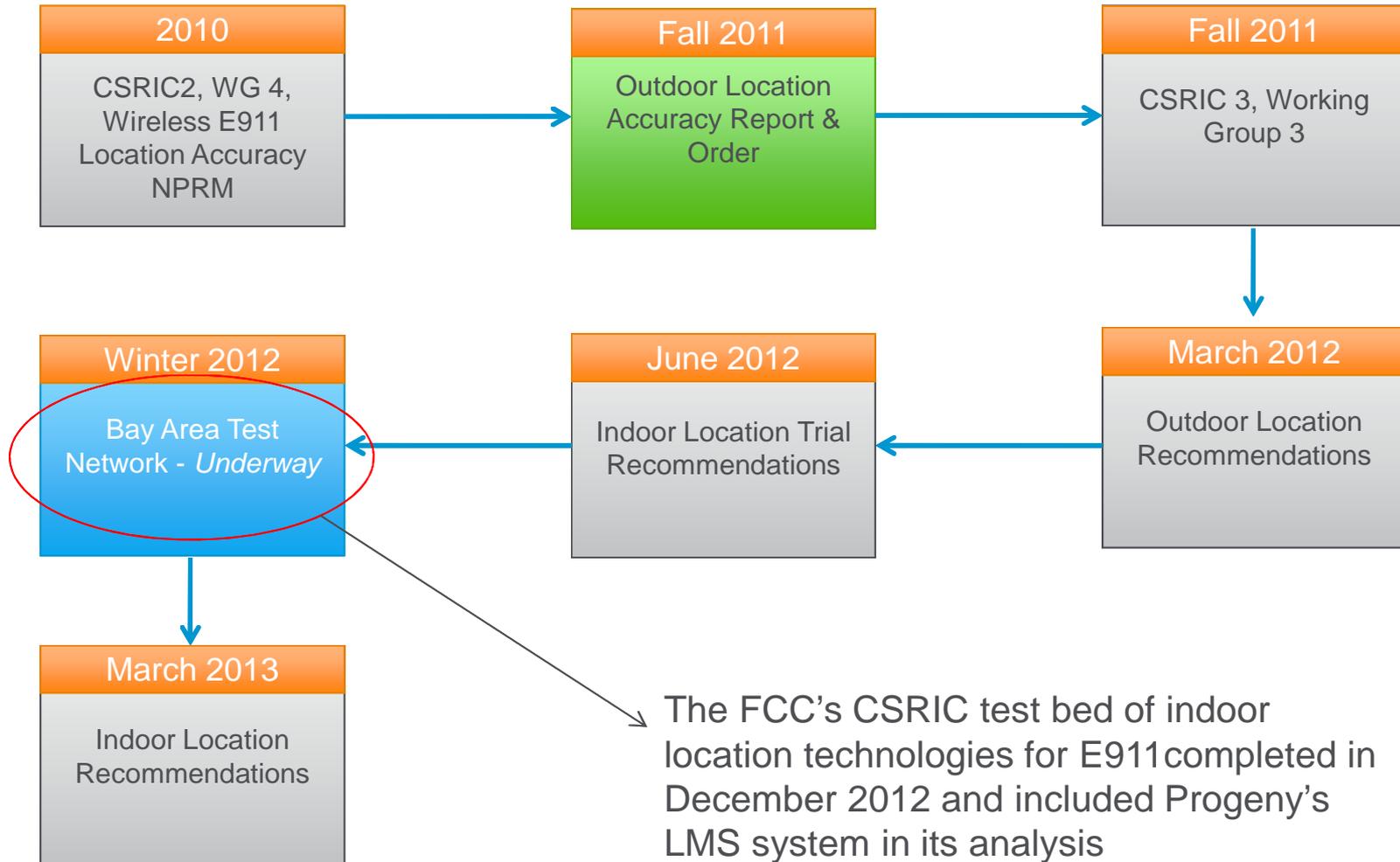


- The FCC has issued two NPRMs and created the 3rd CSRIC to establish rules around indoor location accuracy for E911
- NextNav is a participant in CSRIC 3's Working Group 3, on Indoor Location Accuracy

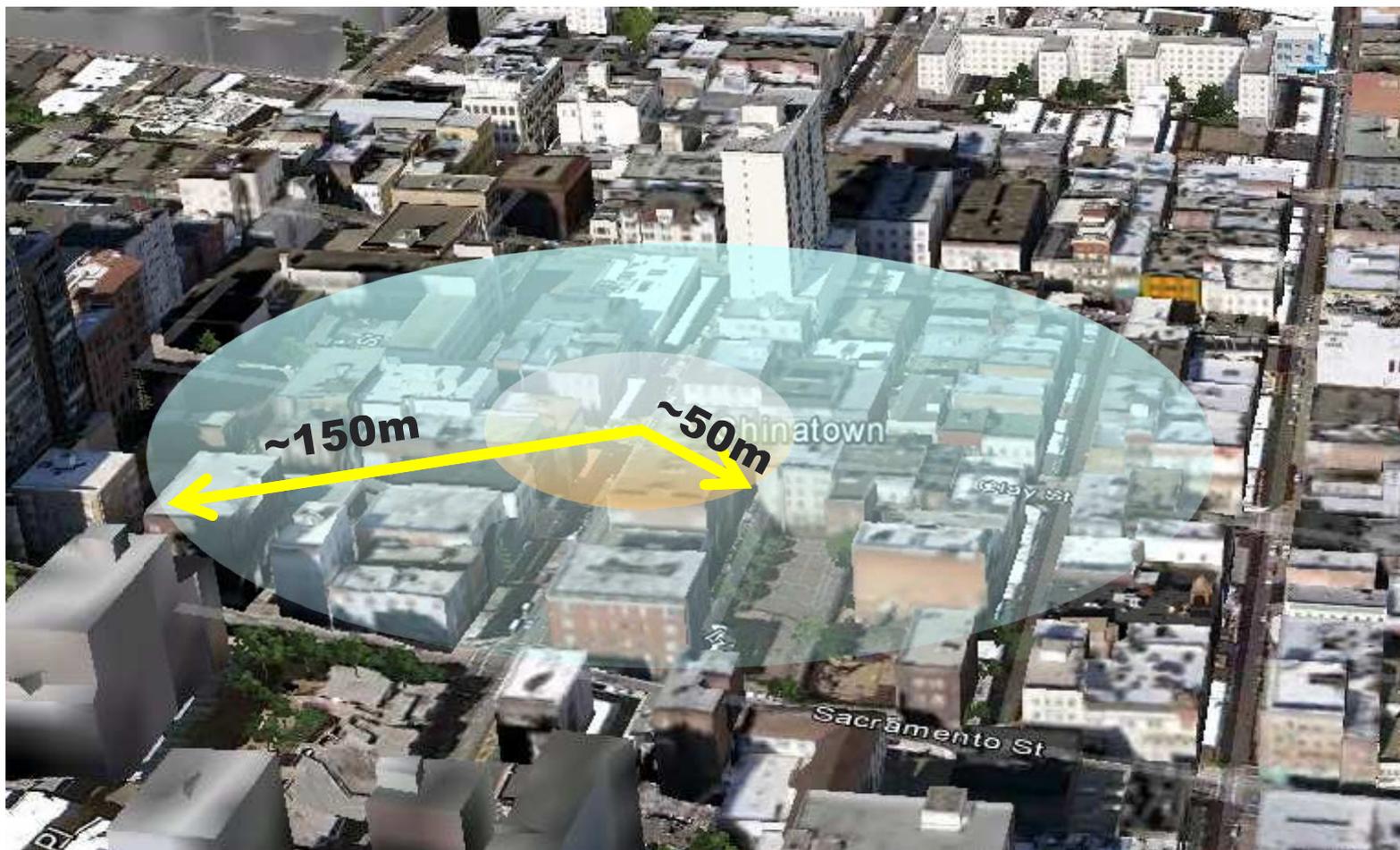
(1) Source: Strategy Analytics via indoorlbs.com.

(2) Source: CDC, January 2011, "Wireless Substitution: Early Release of Estimates From the National Health Interview Survey, July-December 2010".

FCC's E911 Indoor Location Process

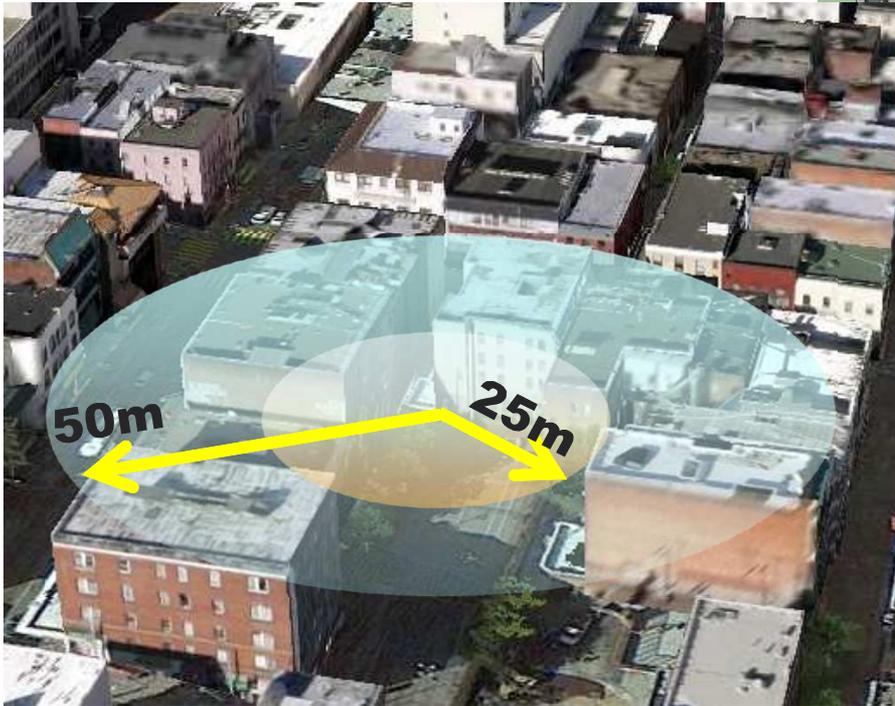


Existing E911 Rules (Outdoor)



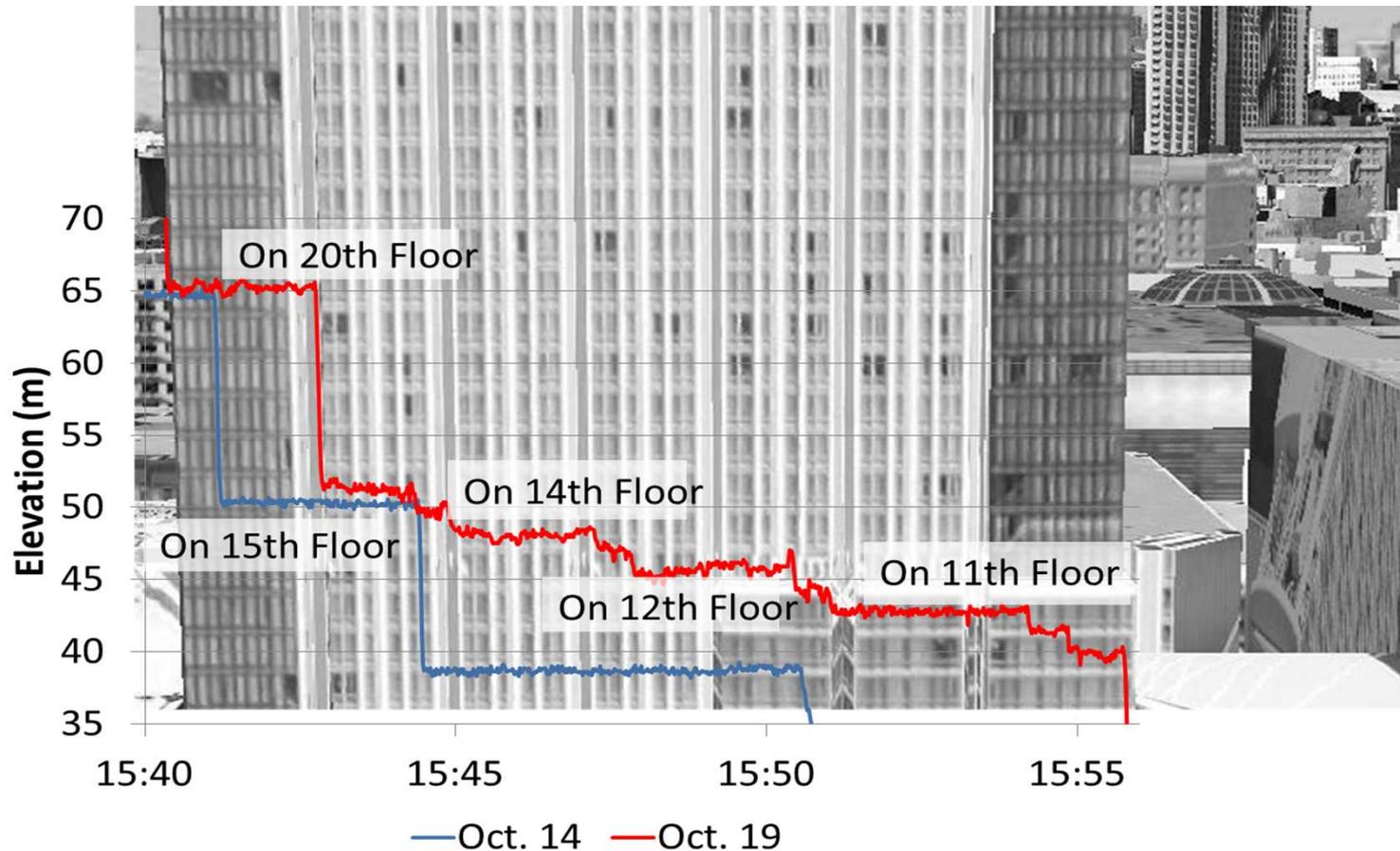
In-Building Requires High Performance Location – and Height

- NextNav's wide area testing demonstrates building-level (26m) performance 67% of the time – and consistent floor-level height accuracy



Note: building image is illustrative only, and does not represent an actual floor plan.

Floor-Level Height Accuracy



NextNav is building the nation's first high precision, real time barometric pressure calibration network

- M-LMS is a primary service in the upper portion of the 902-928 MHz band that was licensed by the Commission through auction
- Secondary Part 15 devices must accept harmful interference from primary M-LMS networks
 - Harmful interference is interference that “seriously degrades, obstructs or repeatedly interrupts” the functioning of a device
- M-LMS licensees must demonstrate that their systems do not cause *unacceptable levels of interference* to Part 15 devices
 - Unacceptable levels of interference is harmful interference that Part 15 devices cannot withstand or avoid using the various mitigation techniques that they use with other Part 15 devices
- Progeny’s M-LMS network uses significant and effective interference mitigation techniques to ensure that it will not cause unacceptable levels of interference to Part 15 devices

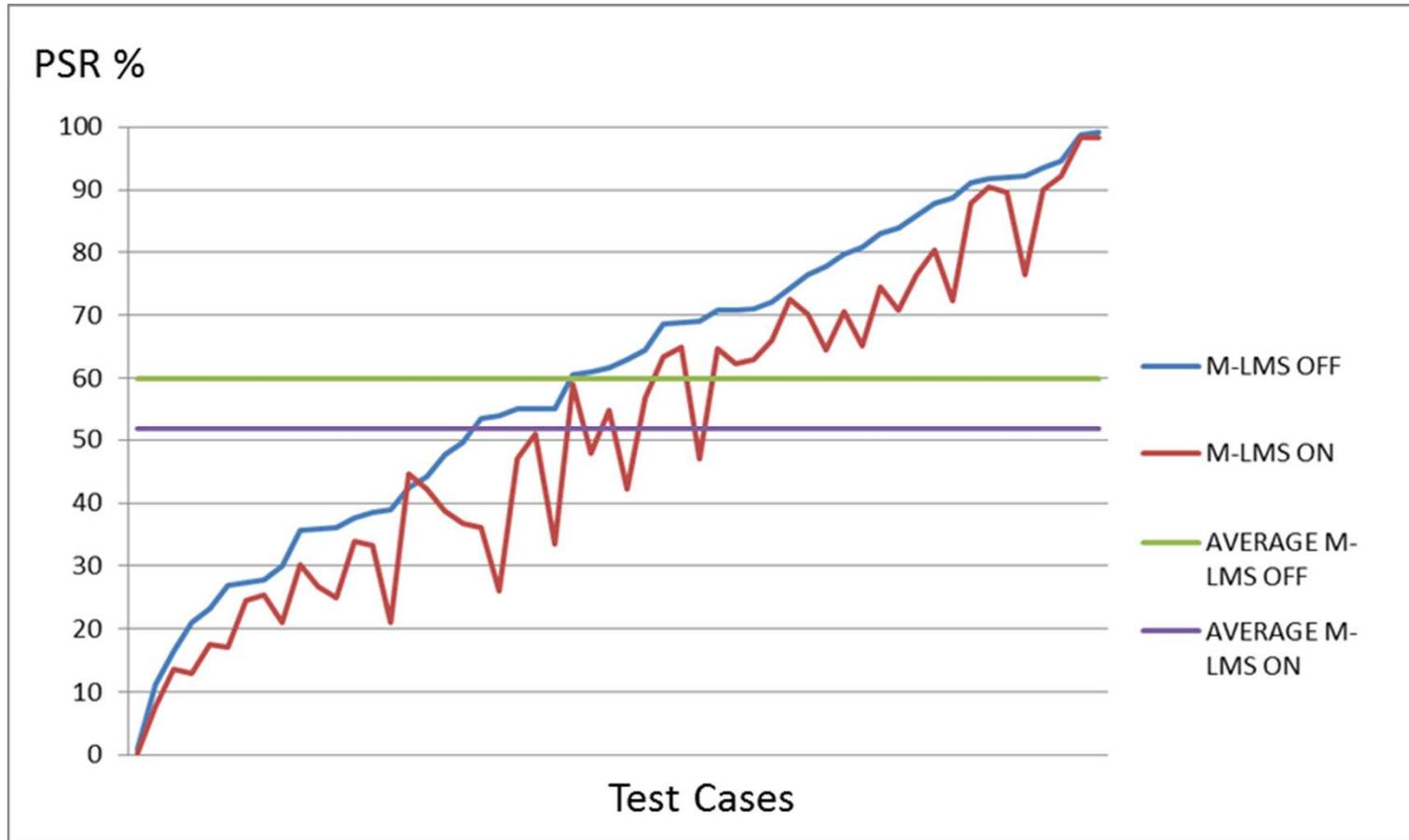
- The interference mitigation techniques used by Progeny to protect Part 15 devices are not required by the Commission's rules (and in one case, necessitated a waiver of the rules). They include:
- **Broadcast Only**
 - No return path from ubiquitously deployed mobile devices (required waiver)
 - Enables high-site/low-density architecture increasing distance from Part 15 devices
 - No need for additional transmitters for capacity as the number of users increases
- **Low Data Rate**
 - Maximizes signal penetration with a minimum number of transmit beacons
- **10-20% Duty Cycle**
 - Intermittent transmissions allow Part 15 devices to continue to operate co-frequency
 - Maximizes co-existence with Part 15 devices even when close to an M-LMS beacon

- Progeny has engaged in multiple rounds of testing to demonstrate its network does not cause unacceptable levels of interference
 - Extensive testing on a range of Part 15 devices using an independent test organization was conducted in the fall of 2011 and filed in January 2012
 - Joint testing with Itron, Landis+Gyr and WISPA was conducted during July through September 2012 and filed with Commission in October 2012
 - Itron and others appear to have conducted their own additional testing
- All of the results show that Progeny's M-LMS network does not cause unacceptable levels of interference to Part 15 devices
 - In every test, the Part 15 device continued to function as intended
 - In some tests, Part 15 devices detected Progeny's signal, but could avoid detection by changing channels or altering link distance
 - Although Progeny's service reduced the throughput of some commercial devices, the reductions attributable to Progeny were usually only a small fraction of the throughput reductions attributable to other Part 15 devices

Two Way Equipment Test Results Total Packet Success Rate

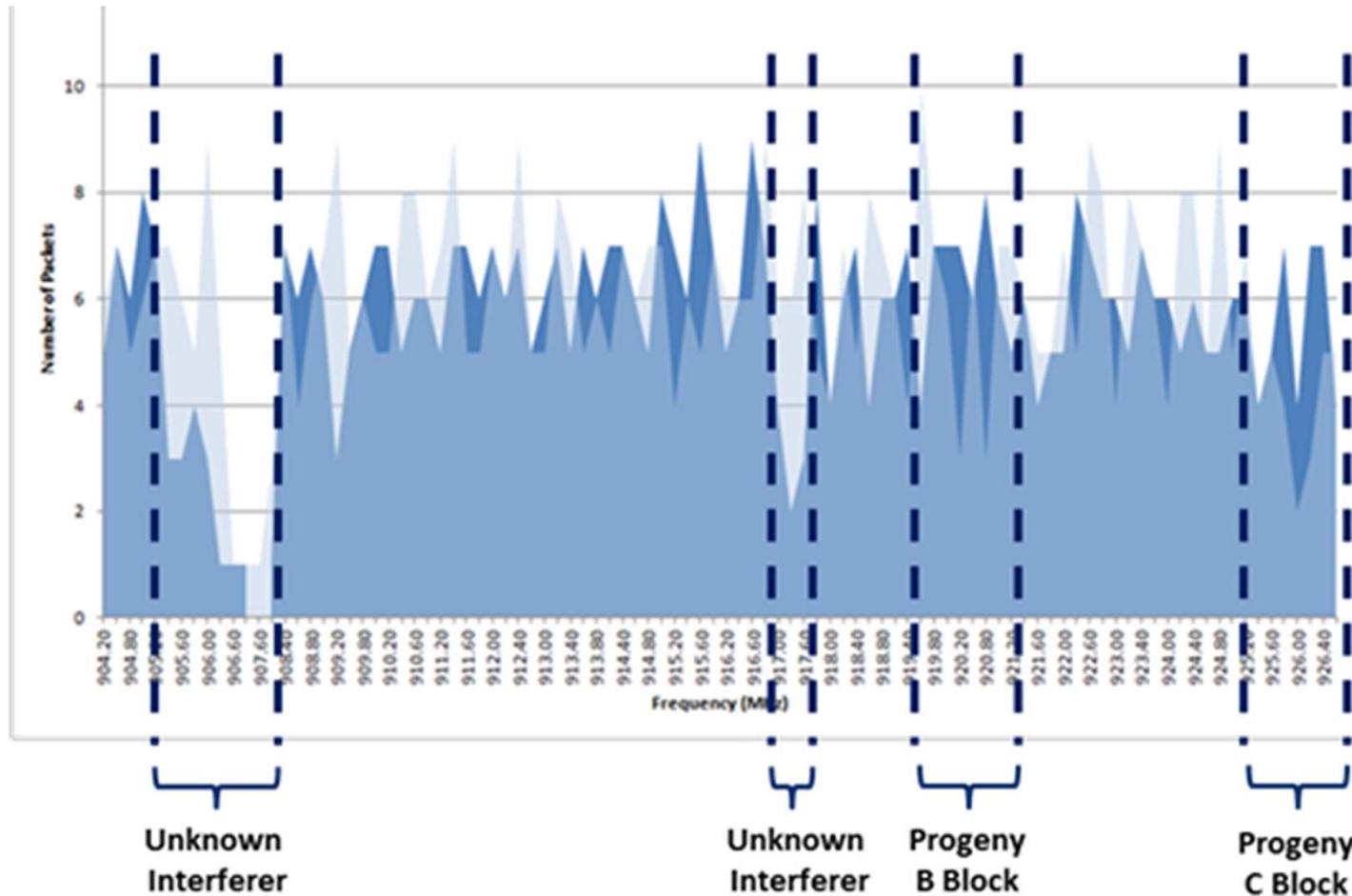
Test Configuration	Throughput Reduction %
Location A Narrow Band	0.31%
Location A Wide Band	-0.85%
Location B Narrow Band	-0.01%
Location B Wide Band	0.05%

Overall Itron System Results



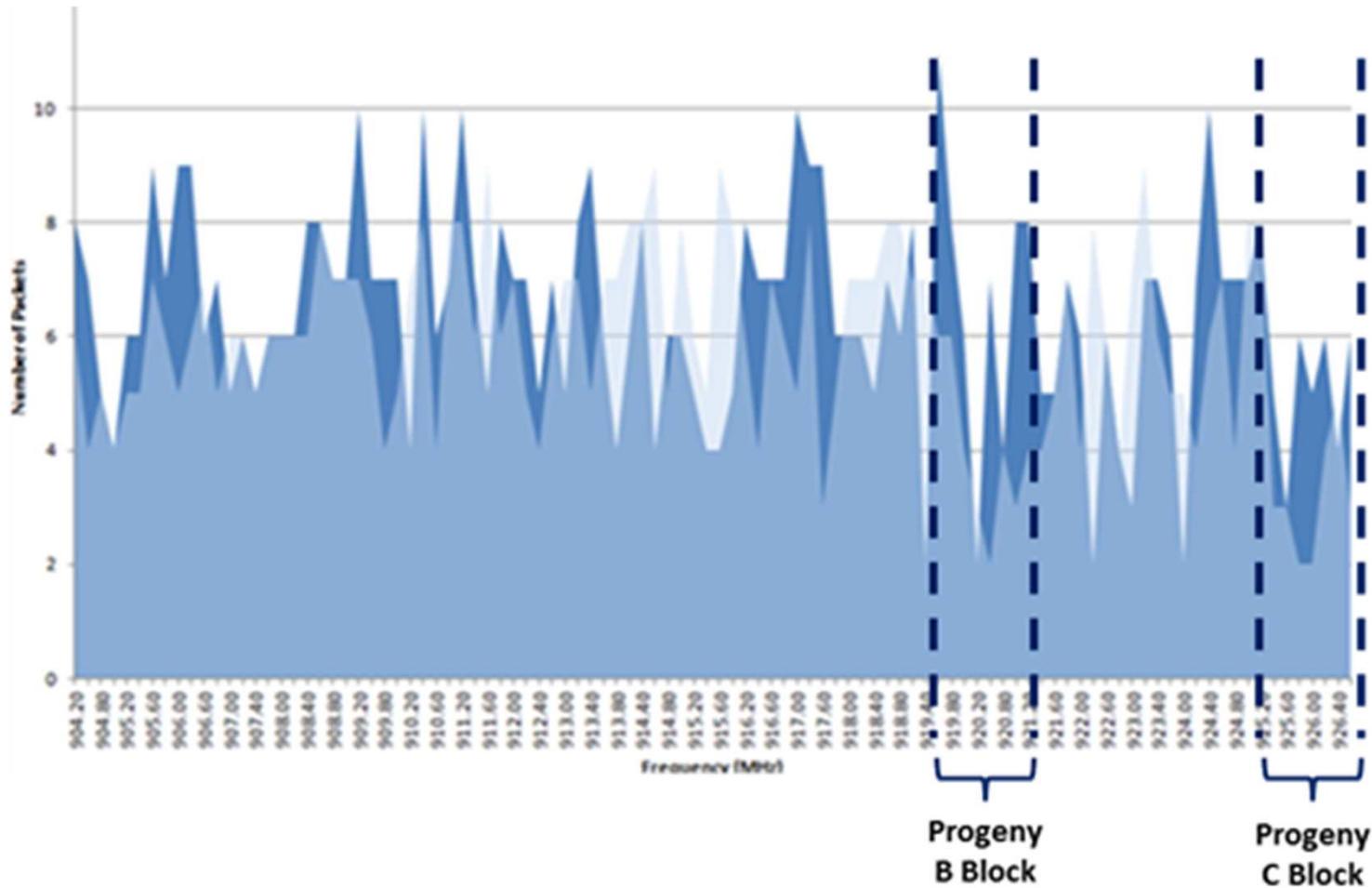
Itron Test 16 and Test 20 (25 ft. Ht.)

Location 2: Suburban (no close proximity and no colocation)



Itron Test 34 and Test 38 (25 ft. Ht.)

Location 1: Suburban (close proximity, but no colocation)



FWB Link Test Results



Test Configuration	Canopy		Ubiquiti	
Adjacent Channel	Downlink	-0.5%	Downlink	2.0%
	Uplink	-0%	Uplink	-2.3%
	Avg.	-0.25%	Avg.	-0.15%
Overlapping Channel	Downlink	-14.9%	Downlink	-47.9%
	Uplink	-8.3%	Uplink	-41.5%
	Avg.	-11.6%	Avg.	-44.7%
Full Co-Channel	Downlink	-49.0%	Downlink	-2.5%
	Uplink	-13.2%	Uplink	-17.6%
	Avg.	-31.1%	Avg.	-10.1%

REDACTED

- WISP Operators use 900 MHz fixed wireless broadband (FWB) devices only in very rural areas because it is very intolerant to interference from other sources
 - Even a baby monitor “will blow up” FWB links “to any customer within the nearby area” according to WISP operators
- The critical public safety need for Progeny’ s position location service is in urban and suburban areas
- Progeny’ s deployments in very rural areas would involve relatively few transmitters, primarily to augment GPS
- Progeny is therefore willing to work with 900 MHz WISP operators to ensure that any interference that might result in these rural areas is minimal

- Progeny's position location service does not cause unacceptable interference to Part 15 devices
- Progeny employs significant interference mitigation techniques greatly reducing potential for interference
- Most Part 15 devices, when used in a typical manner, will never detect or experience interference from Progeny's M-LMS network
 - They only rarely simultaneously occupy the same frequency as a Progeny signal due to frequency hopping, Progeny's duty cycle, or other technology approaches
 - Even when a Progeny beacon is co-frequency, the Part 15 receiver will usually detect only the transmission from the much closer Part 15 transmitter
 - If a Progeny signal is detected, most Part 15 devices will switch to non-Progeny channels (either automatically or through user selection)
- In all cases in which a Part 15 receiver did detect a Progeny signal and remained on the same channel, the device continued to operate, transmitting and receiving its desired signal