



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 25, 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 23 and 24, 2013, representatives of Progeny LMS, LLC (“Progeny”) met with representatives of the Commission staff to discuss the results of the more than a year of testing that has been conducted by Progeny to demonstrate its compliance with Section 90.353(d) of the Commission’s rules. Participating in the meeting on January 23rd on behalf of the Wireless Telecommunications Bureau were Ruth Milkman, Paul Murray, Paul D’Ari, Bill Stafford, Karen Ansari, Hugh Van Tuyl, and Saurbh Chhabra. Participating in the meeting on January 23rd on behalf of the Office of Engineering and Technology were Julius Knapp and Geraldine Matise. Participating in the meeting on January 24, 2013, were David Turetsky, Chief of the Public Safety & Homeland Security Bureau (“PSHSB”), and David Siehl and Timothy May, also of PSHSB. Participating in the meeting on the 23rd on behalf of Progeny were Gary Parsons, Ganesh Pattabiraman, David Knutson, Ron Olexa and the undersigned. Participating in the meeting on the 24th 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. (“Itron”), Landis+Gyr Company (“Landis+Gyr”), and the Wireless Internet Service Providers Association (“WISPA”) to demonstrate that Progeny’s Multilateration Location and Monitoring Service (“M-LMS”) network does not cause unacceptable levels of interference to Part 15 devices. The attached presentation was distributed and discussed during the meeting.

37 Offices in 18 Countries

Squire Sanders (US) LLP is part of the international legal practice Squire Sanders which operates worldwide through a number of separate legal entities.

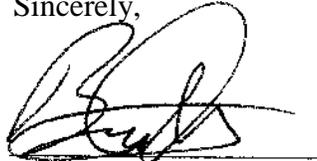
Please visit squiresanders.com for more information.

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

Progeny also recently participated in the indoor location accuracy test bed that was conducted in December 2012 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 in March 2013 and Progeny understands that the Commission staff is already reviewing the preliminary test results.

Thank you for your attention to this matter. Please contact the undersigned if you have any questions.

Sincerely,

A handwritten signature in black ink, appearing to read 'Bruce A. Olcott', written over a horizontal line.

Bruce A. Olcott
Counsel to Progeny LMS, LLC

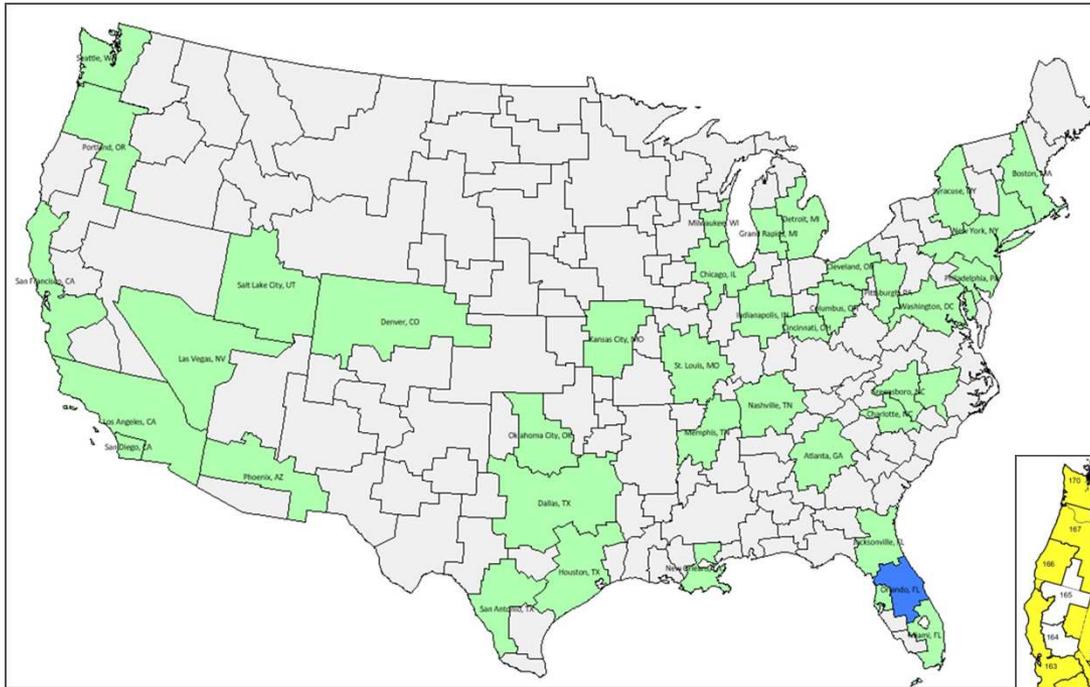
M-LMS Position Location Network

January 24, 2013

NextNav LLC & Progeny LMS LLC

High Precision Urban and Indoor Positioning Services

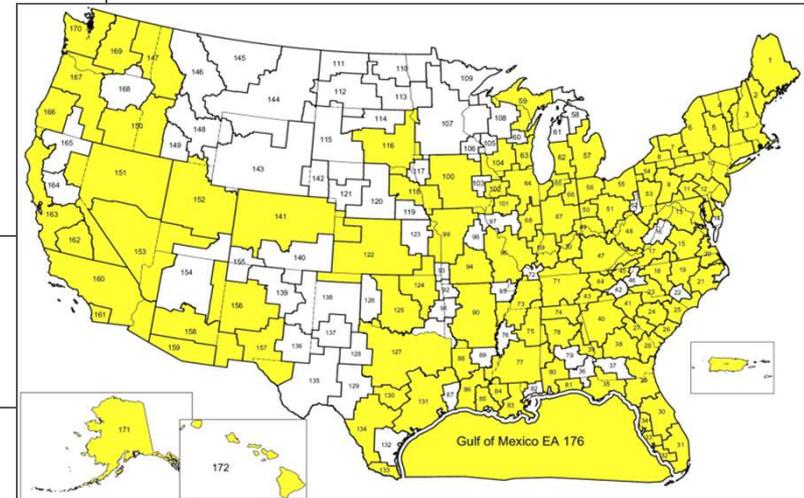
Deployment Status – Initial 40 Markets



Complete & On-air (39 EAs)

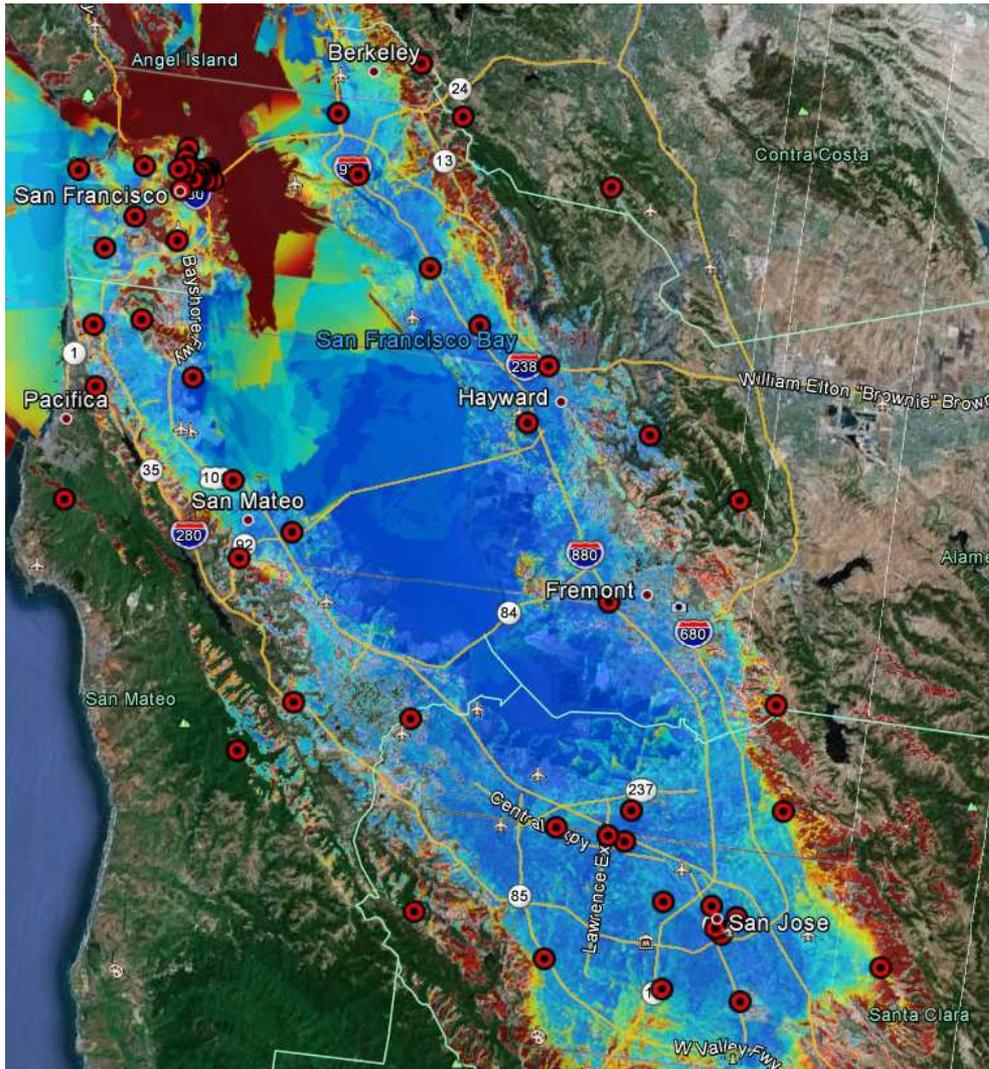
Complete, Pending Power (1 EA)

Licensed Markets (115 EAs)



- Initial deployment complete in top 39 licensed EAs
- 40th EA (Orlando) waiting on power at one site (nesting eagle)
- Average population coverage exceeds 45 percent in top 40 EAs

San Francisco Market Coverage



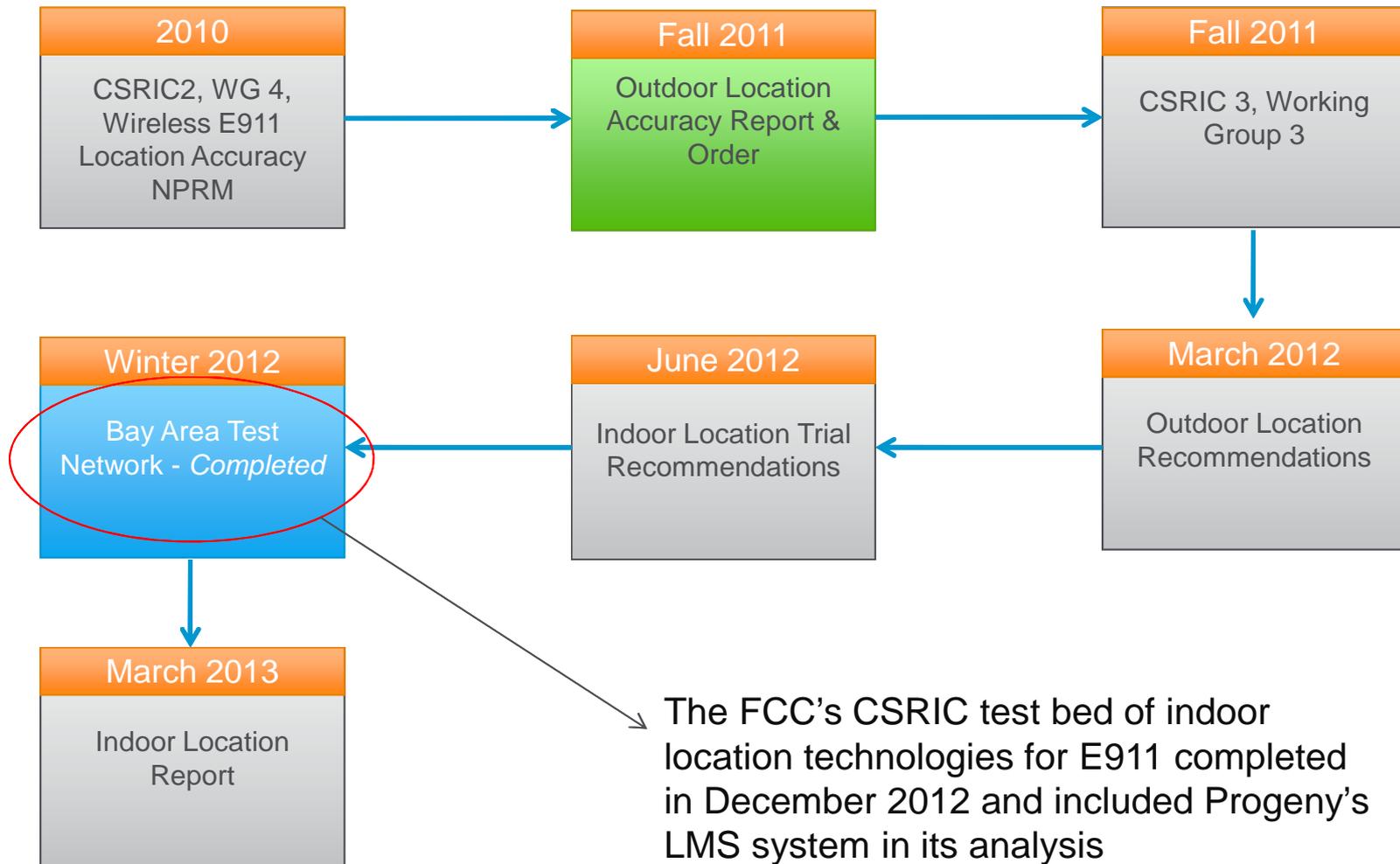
- 900+ square miles of coverage
- Average beacon separation 8 - 10km
- Network optimized for coverage and location accuracy

Performance Key

Good  Best

 M-LMS Beacons

FCC's E911 Indoor Location Process



- 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 (normal mode of operation)
 - Although Progeny's service reduced the throughput of some commercial devices when operating co-frequency, the reductions attributable to Progeny were usually only a small fraction of the throughput reductions attributable to other Part 15 devices

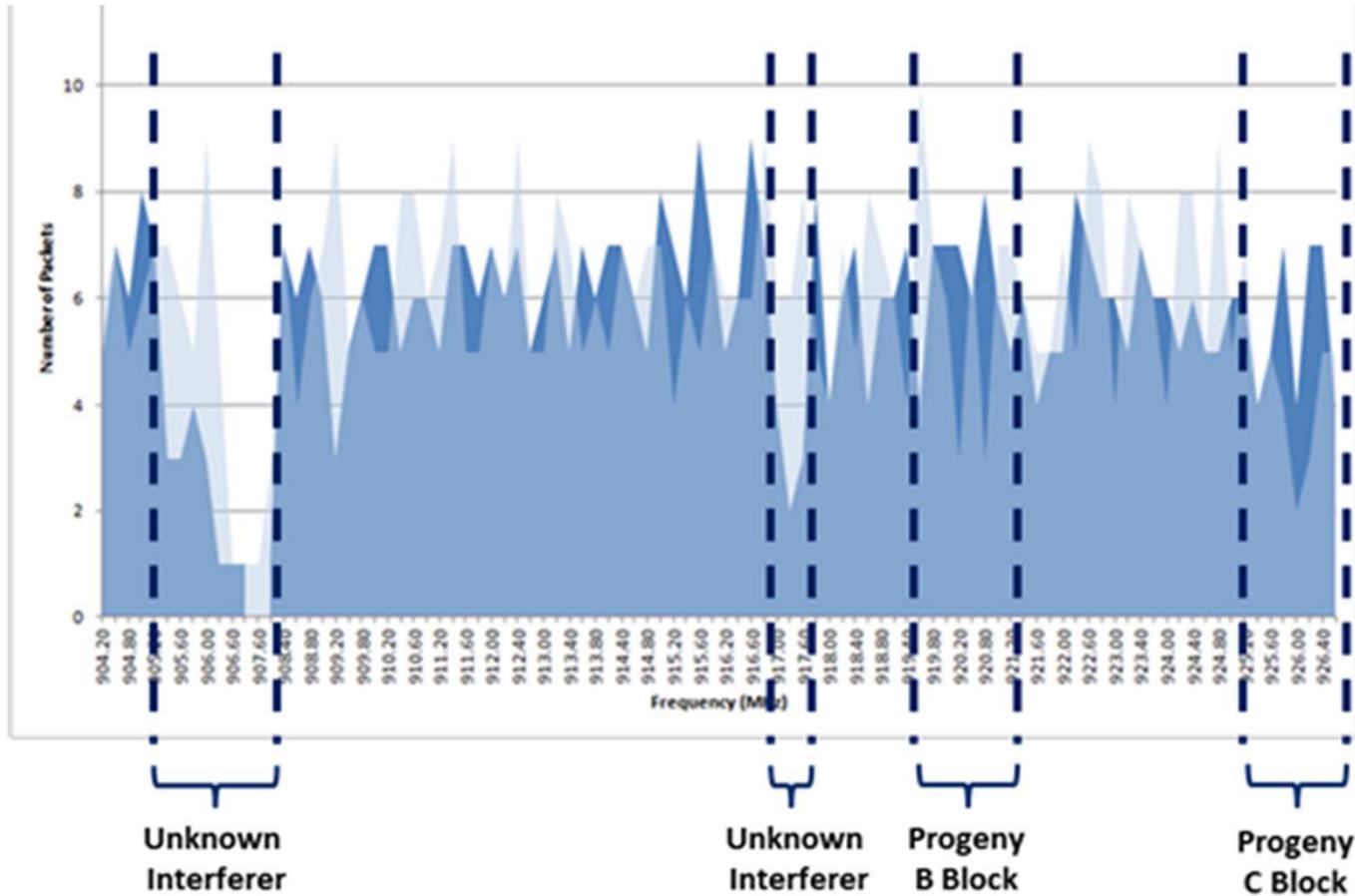
- The interference mitigation techniques used by Progeny to protect Part 15 devices are not required by the Commission's rules (and in one case, necessitated a waiver of the rules). They include:
- **Broadcast Only**
 - No return path from ubiquitously deployed mobile devices (required waiver)
 - Enables 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

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%

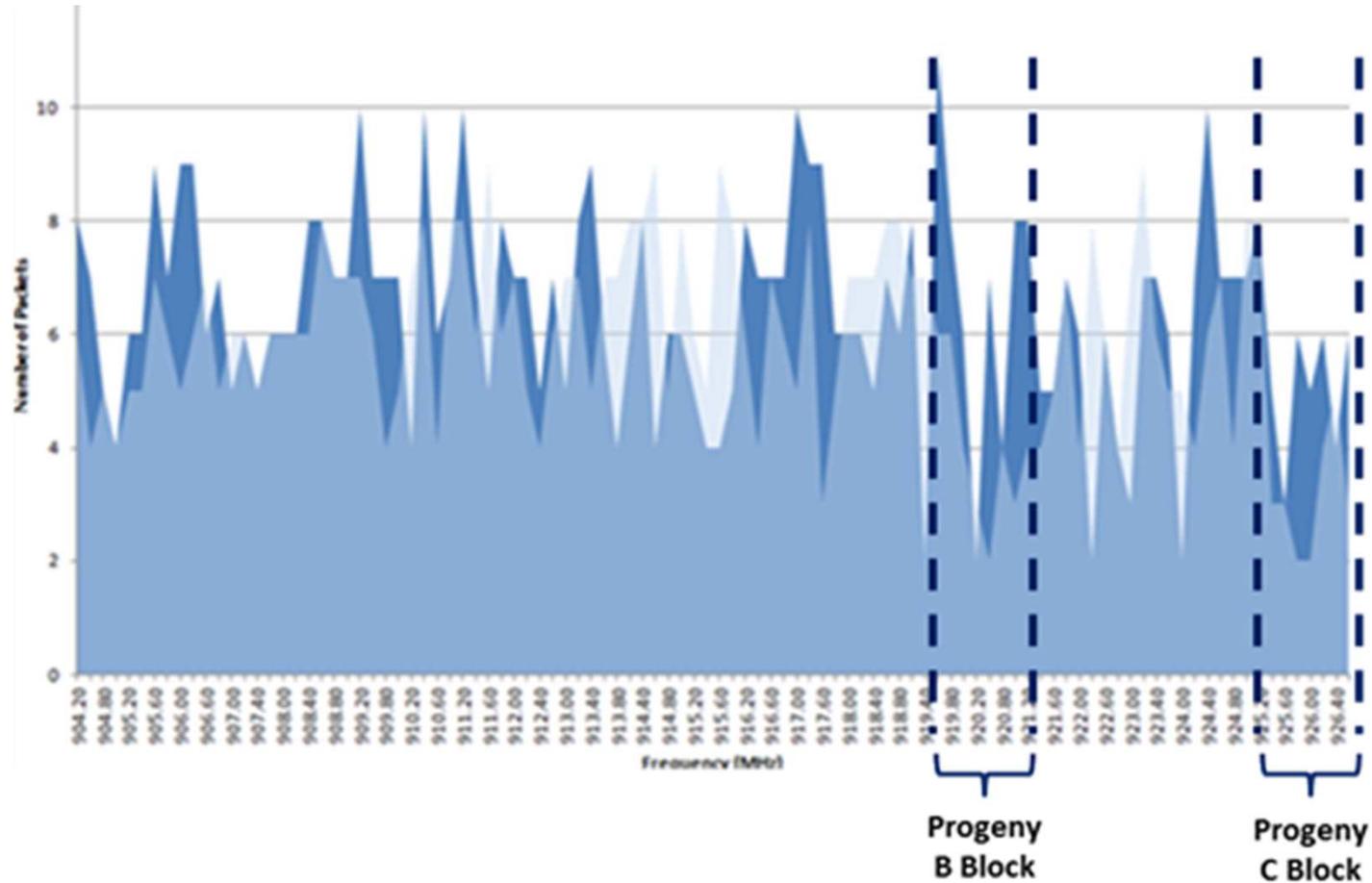
Itron Tests 16 & 20 (average case)

Loc. 2: Suburban, 25 ft. ht., no close proximity or colocation



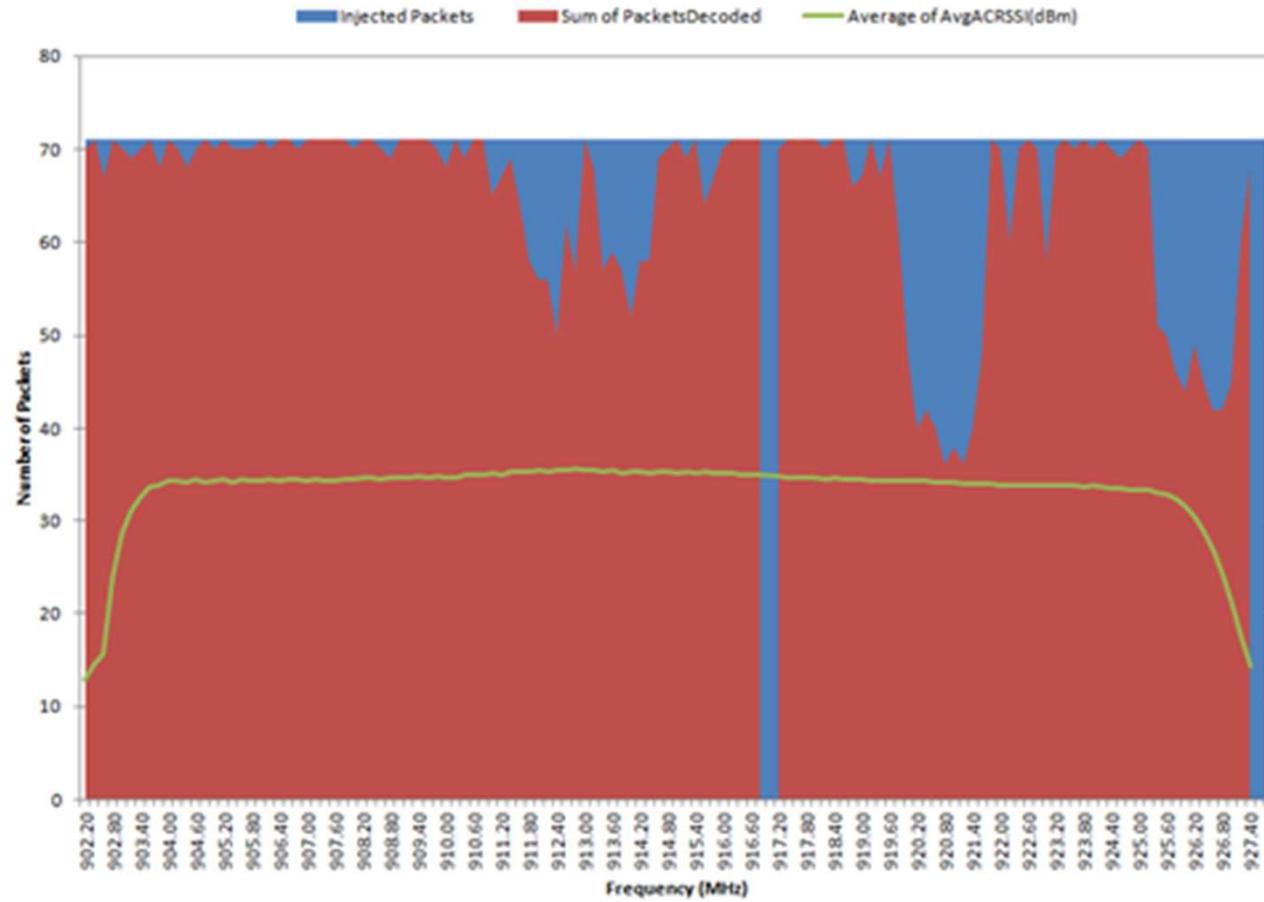
Itron Tests 34 & 38 (close proximity)

Loc. 1: Suburban, 50 ft. ht., close proximity, but no colocation

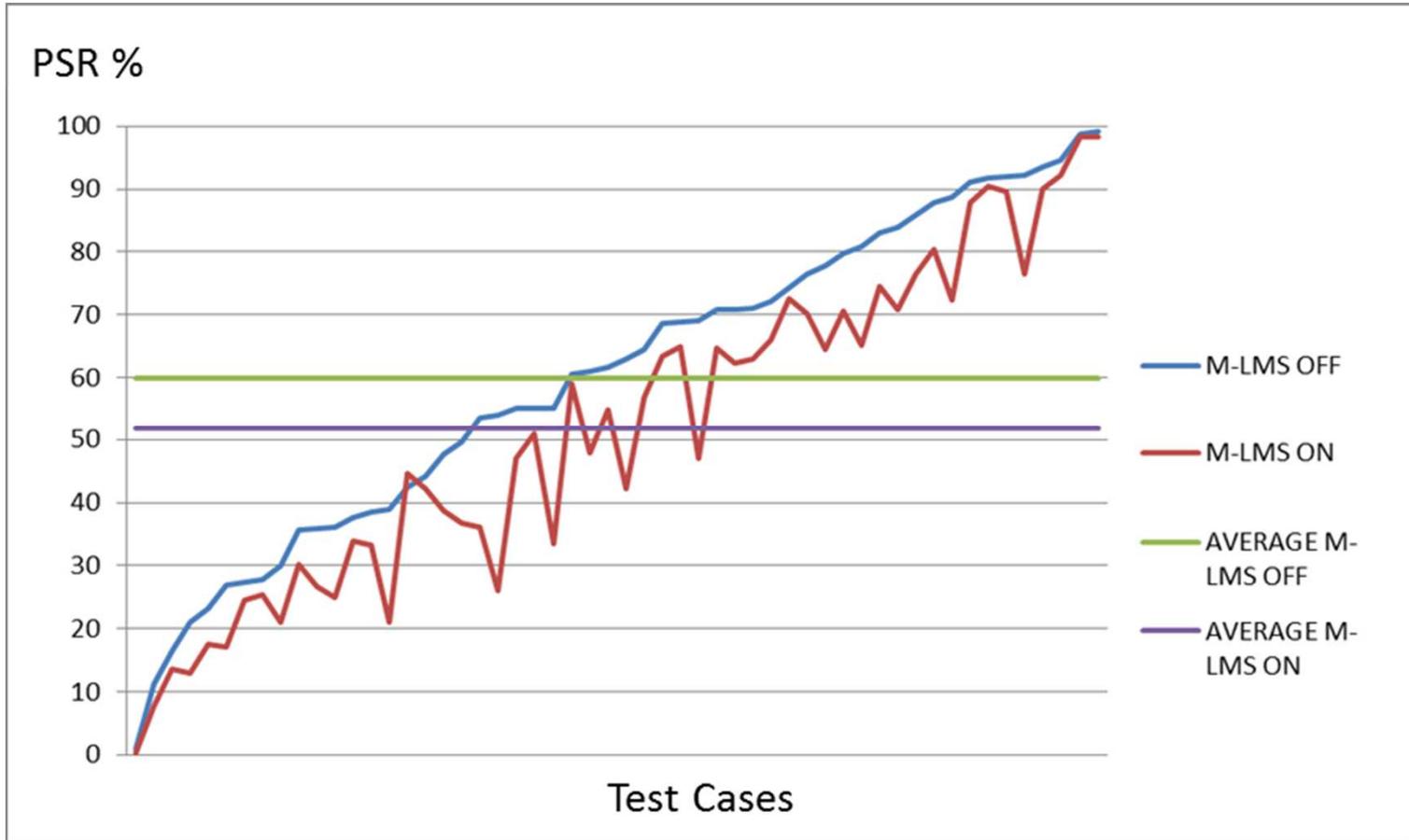


Test 25 PER Test (worst case)

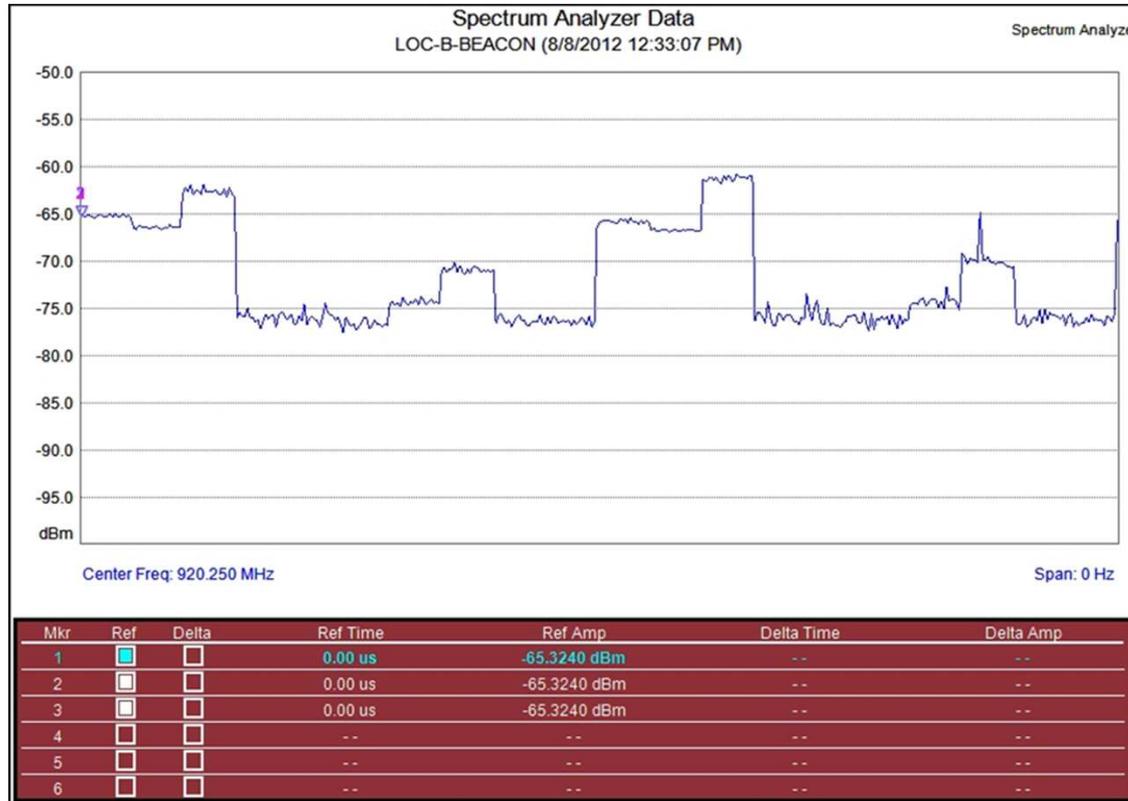
Loc. 3: Urban, 11 ft. ht., close proximity & colocation



Overall Itron System Results

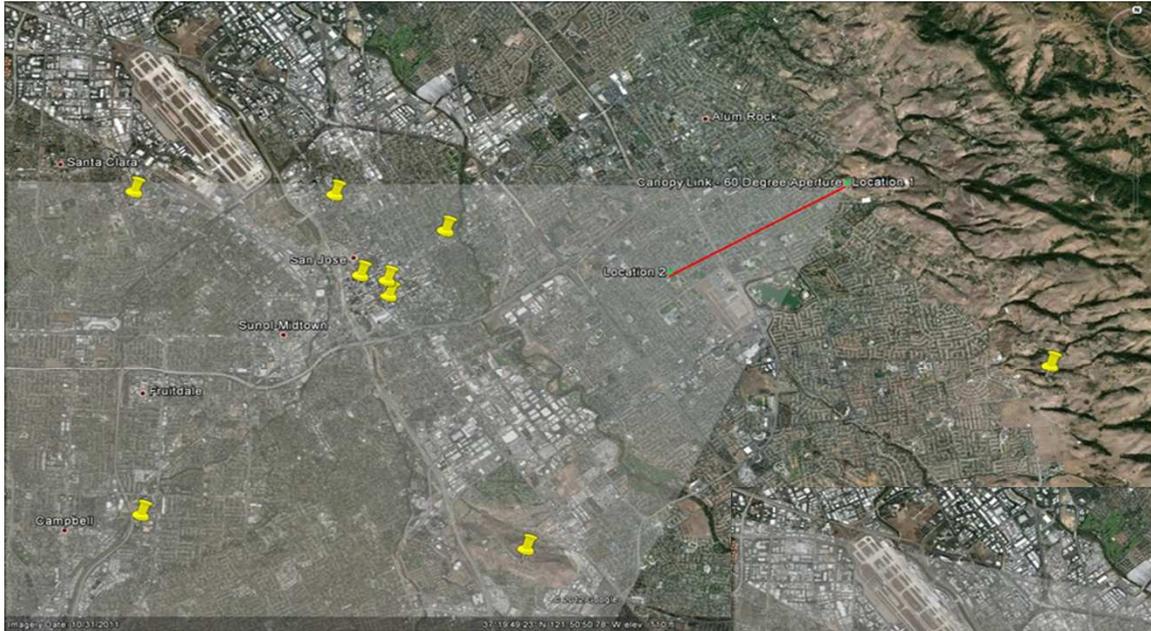


Landis+Gyr/Progeny Duty Cycle Chart



Measurement Parameters			
Trace Mode	Average	Start Frequency	920.250 000 MHz
Trace Average	1	Stop Frequency	920.250 000 MHz
Preamp	OFF	Frequency Span	0.000 000 Hz
Min Sweep Time	--	Reference Level	-50.000 dBm
Reference Level Offset	0.0 dB	Scale	5.0 dB/div
Input Attenuation	0.0 dB	Serial Number	409173
RBW	1.0 MHz	Firmware Version	V5.32
VBW	300.0 kHz	Date	8/8/2012 12:33:07 PM
Detection	Peak	Device Name	S332D
Center Frequency	920.250 000 MHz		

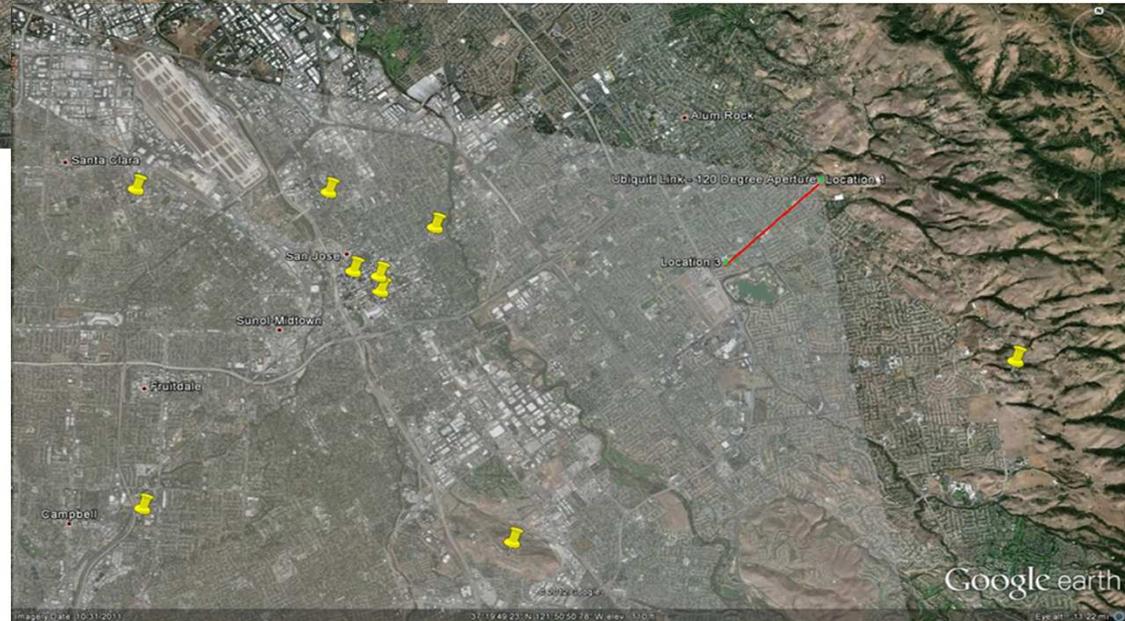
FWB Link Test Configurations



- Yellow pins mark Progeny beacons
- Test configuration intentionally directed towards urban concentration of Progeny beacons

Location and beam width of Canopy test link

Location and beam width of Ubiquiti test link



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%

- 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