

# Case Study: City of Boston, Massachusetts

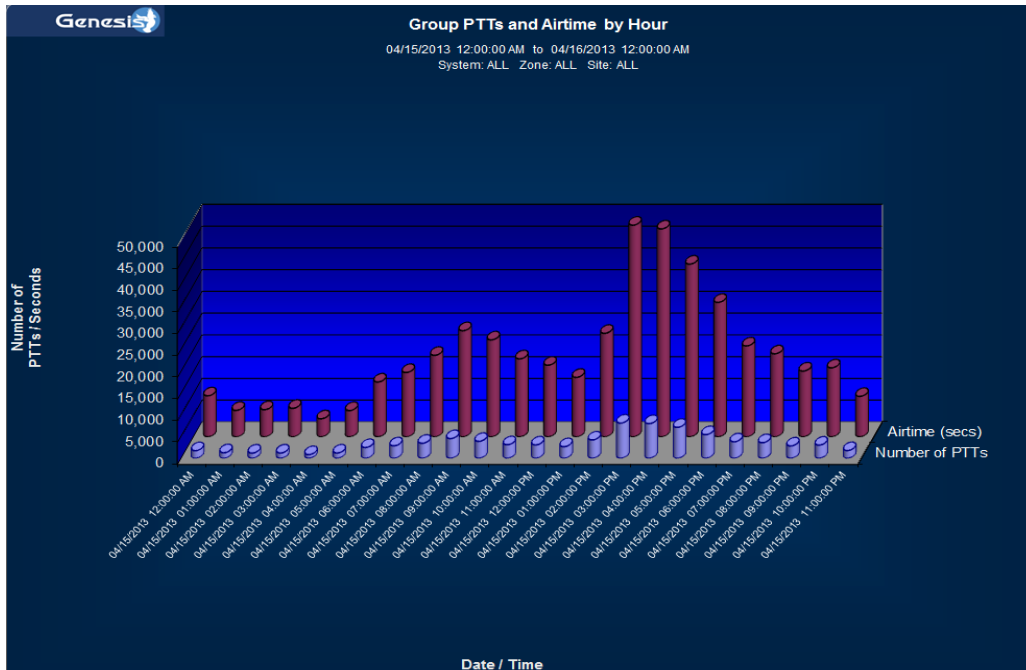
Boston is the capital and largest city in the Commonwealth of Massachusetts, with an area of 89 square miles of which 41 sq/miles are water. The Greater Boston Metro area is home to 4.5 million people and among the top ten largest metropolitan areas in the US with rapidly growing neighboring communities. A city rich with history, one of the best known sporting events in the city is the Boston Marathon, managed by the Boston Athletic Association since 1897. Each year on Patriot's Day, over 26,000 runners are officially registered and an additional several thousand "bandits" join the Marathon after it starts. The race continues for 26 miles through 8 communities and has hundreds of thousands of spectators.

Planning for this event starts early in December the year before. The City is an integral part of planning. The need for a shared radio system was identified – one which would improve the coverage of concurrent systems, offer greater operability and interoperability, leverage grant investments, and modernize infrastructure. The MASS (Metropolitan Area Simulcast System) project took 2 single owner-operated 3 site 800 MHz analog simulcast systems and merged them into a single 6 site simulcast system. The merger improved both coverage and capacity for both entities. The key partnership between the City and the Commonwealth resulted in a shared system in just 6 months. The partnership formed the foundation for the deployment of a Metro Boston 700 MHz 8 site simulcast ASTRO® 25 P25 Phase 2 overlay.

This two zone M3 trunked system configuration has zone cores located in the Headquarters of the Massachusetts State Police in Framingham and Boston Police Headquarters in Boston. The system has over 35,000 subscribers and is primarily funded by the Commonwealth, the City of Boston and the Metro Boston UASI (Urban Area Securities Initiative). Each entity shares in the maintenance and operating costs while technical, steering, and executive committees decide on the policies, procedure and operational responsibilities of the system.

Each committee has made a commitment to constantly evaluate products which might increase the system's overall value and productivity; therefore, Genesis products performance management solutions were introduced at a planning session in during the design phase when the second master site controller was being installed. The State Police and the Cities of Boston and Cambridge, were the initial users of Genesis software tools which included NetVista, iVista and Clone Watch. These software tools played an integral part in the forensic reporting after the Marathon event and the subsequent bombing. The Incident Command System (ICS) Form 205 for the event assigned radio channels for various agencies and functions. For the race, a "super patch" was created with 6 different radio systems all patched together at the system level. This ensured that no matter where an officer was from, whether an out-of state agency or a federal resource, they could join the super patch to communicate with all agencies.

At this year's event, two bombs were detonated, the first at 2:51 PM. Using Genesis' performance management reporting tool, it was determined that during the hour following the bombs, there were 50,000 PTTs on the statewide system. Only 21 total busies were experienced during this time; and only 2 of these were long with an average duration 2.1 seconds. None of these busies occurred on the incident's command and control channel. These statistics were presented at the National MTUG (Motorola Trunked Users Group) held in Anaheim, CA in August of this year. Donald Denning, Public Safety Chief Information Officer for the City of Boston said, "We continually use the Genesis system and product suite to manage our system in real time as well as for forensic analysis. If you have the Genesis tools, I encourage you to understand how they work because it gives you very valuable information – and we used it to analyze all these busies." This type of forensic reporting helps justify investments in capacity and coverage as well. Additionally, this information is valuable to Communications Unit Leaders (COM-Ls) as they plan for subsequent events and allows them to continually refine their communications plans.



Detailed Busies at T+0  
 21 total – Avg. Duration: 2.1 sec.

Busy Start Time	Busy Seconds	ID	RadioAlias	TargetID	TargetAlias
04/15/2013 02:51:42 PM	2.8	51358	SP-1358	2111	C-PTL-1
04/15/2013 02:51:42 PM	7.1	54315	SP-1140	2073	A-PTL-1
04/15/2013 02:51:44 PM	7.8	4844	HAP-5233	2003	DOT-HAP
04/15/2013 02:51:45 PM	1.9	65317	DHQ2-D- PTL-1	2123	D-PTL-1
04/15/2013 02:51:48 PM	3.7	35165	MEMA-153	2063	EVENT-8
04/15/2013 02:51:48 PM	2.5	64254	DCR3 MEMA-E	2433	MEMA-EAST
04/15/2013 02:51:50 PM	1.2	57347	RUGGIERO APX-U	2209	SP-TECH-WIDE
04/15/2013 02:51:54 PM	0.7	39014	MDOT-0922	2239	E-PTL-4
04/15/2013 02:51:55 PM	0.4	50273	SP-0273	2081	H-PTL-2
04/15/2013 02:51:58 PM	1.5	39433	MEMA-X032	2433	MEMA-EAST
04/15/2013 02:52:00 PM	1.7	51255	SP-1255	2081	H-PTL-2
04/15/2013 02:52:01 PM	1.3	44096	MSP-3140	2123	D-PTL-1
04/15/2013 02:52:01 PM	1.6	51358	SP-1358	2111	C-PTL-1
04/15/2013 02:52:02 PM	4.5	36513	MTA-0513	2003	DOT-HAP
04/15/2013 02:52:04 PM	1.0	50950	SP-0950	2239	E-PTL-4
04/15/2013 02:52:06 PM	1.3	39832	MEMA-X069	2433	MEMA-EAST
04/15/2013 02:52:07 PM	0.1	51709	SP-1709	2073	A-PTL-1
04/15/2013 02:52:08 PM	0.3	32979	MEP-134	2447	MEP-1
04/15/2013 02:52:08 PM	3.4	36802	MEMA-D-2	2063	EVENT-8
04/15/2013 02:52:09 PM	0.4	44096	MSP-3140	2123	D-PTL-1
04/15/2013 02:52:31 PM	0.3	35165	MEMA-153	2063	EVENT-8
04/15/2013 02:52:35 PM	0.0	36513	MTA-0513	2003	DOT-HAP

By 5:00 PM the evening of the bombing, 400 officials had assembled in the command post along with 200 Federal agents. The Unified Command Center was operating out of the state EOC in Framingham with more than 25 agencies participating there. Police from NH and VT participated. A total of over 1,250 subscribers units affiliated to the command and control talk group. These statistics were also available using the Genesis reporting tools and helped draft new communication plans and ICS 205s.

During the ten days in April after the terrorist attacks, Greater Boston leaned on a strong foundation of pre-planning, training and coordination to provide communications to hundreds of federal, state and local law enforcement agencies through extraordinary measures. We, at Genesis, are proud to have been a part of these efforts.

