District of Columbia's Public Safety In-Building Radio Systems

In-Building Systems Testing Companies Approval Process

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Version 1.4

GOVERNMENT OF THE DISTRICT OF COLUMBIA
Office of Unified Communications, Washington, DC

Table of Contents

1 Background

The Office of Unified Communications (OUC) of the District of Columbia operates the City's public safety communications including the 911 and 311 call centers and the public safety radio system for the City. This system is a standardized P25 700/800 MHz FDMA/TDMA system.

Effective January 2015, the District of Columbia has adopted a legislation mandating radio coverage for newly constructed buildings as required by the International Fire Code (see http://dcregs.dc.gov/Gateway/RuleHome.aspx?RuleNumber=12-H510). The code specifies that "emergency responder radio coverage systems and related equipment shall comply with all additional requirements, specifications and criteria established by the District of Columbia Office of Unified Communications to satisfy the operational needs of emergency responders and to prevent adverse impact on the District of Columbia's public safety communications".

The set of documents that constitute the *additional requirements, specifications and criteria established by the District of Columbia Office of Unified Communications* is available at https://ouc.dc.gov/page/oucs-public-safety-building-radio-systems-requirements.

In particular, it requires that the building owners/managers contract one of the OUC approved vendors to perform the acceptance testing of the system, as well as its annual testing.

This document described the process to follow to be a vendor approved to perform in-building systems testing on behalf of the District of Columbia.

2 Overview

The needs to support the OUC for their in-building wireless systems tests are two folds:

- **System acceptance testing**: occurs when the system is first brought on line or when significant changes in the building that might impact the performance of the in-building system are made. Such changes include (this is a non-exhaustive list): interior re-design (interior walls, ceiling, etc.), deployment of additional radio systems such as commercial Distributed Antennas Systems (DAS) or private communications systems, extension of existing DAS, etc..
- **Annual testing**: Every year, the in-building system needs to be tested to verify it is still providing the required coverage and does not have a negative impact on the donor radio network.

The detailed testing processes are described in documents that can be found here: https://ouc.dc.gov/page/oucs-public-safety-building-radio-systems-requirements.

In all cases, all expenses for performing the testing are borne by the Building Owner and or its representatives.

2.1 System Acceptance Testing

The System Acceptance Testing comprises two distinct parts:

- The functional test includes verifying the soundness of the installation, checking the features and configuration of the equipment, and evaluating the impact of the installed equipment on the donor network. Corrections and fine tuning of the BDA might occur during that phase. It typically lasts 6-8 hours depending on corrections that need to be made.
- The coverage test consists in verifying that the coverage objectives meet the first responders' needs. A subset of the measurements is also used to build a reference baseline. The duration of that phase depends on the size of the building.

2.2 Annual Testing

The Annual Testing comprises two distinct parts:

- The functional test verifies the physical installation has not deteriorated and checks the impact of the installed equipment on the donor network.
- The coverage test consists in verifying that all frequencies are passing through the BDA and all fiber DAS remote units (if applicable). It then measures and compares signal levels under the antennas to the baseline measurements. Any repairs or discrepancies shall be addressed by the building owner.

3 Eligibility

The companies willing to perform in-building wireless systems testing on behalf of the OUC shall meet the following criteria:

- Independence: The selected company shall not perform the Acceptance Testing on systems for which they had any direct or indirect involvement in the design or installation. If that is the case, any other OUC approved vendor shall perform the Acceptance Testing . The selected company shall be allowed to perform Annual Testing (assuming the Acceptance Testing passed), on systems for which they had any direct or indirect involvement in the design or installation.
- LMR expertise:
    - Must have personnel on staff with a Motorola P25 system management training certification
    - Must have experience designing, implementing or upgrading P25 systems
- Must have significant experience designing and implementing public safety in-building repeater systems.

4 Approval Process

The companies willing to perform in-building wireless systems testing on behalf of the OUC shall email the following documentation to das.ouc@dc.gov:

- Signed affidavit stating the company shall not participate in any manner to the design or installation of a public safety system for which the company is performing the acceptance testing or annual testing.
- Evidence of experience demonstrating the criteria is met
- Relevant Motorola training certifications

The OUC will review the application and make the decision.