



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

Building Owners/Manager
Responsibilities

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Version 1.0



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1 Background

For public safety, reliable two-way communications are essential throughout the whole geographical area of a jurisdiction including on-street, in tunnels and within buildings.

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>.

To comply to the District requirements, the building owners must deploy in-building radio frequency repeater systems. Those systems comprise a Bi-Directional Amplifier (BDA) and a Distribution Antennas System (DAS). As a key stakeholder, the building owner/manager has responsibilities in the deployment and operations of the in-building repeater system. This document summarizes those responsibilities.

2 The Stakeholders

District of Columbia Regulatory Agency (DCRA):

The DCRA manages the construction permitting process associated with the building. DCRA issues Certificates of Occupancy. DCRA is responsible for ensuring that construction and installation of the building and all building components meet the requirements set forth by the DC Building Code.

Fire and Emergency Medical Services (FEMS) Department:

FEMS is responsible for ensuring that construction and installation of the building and all building components meet the requirements set forth by the District Fire Code. The DC Fire Code is consistent with the Fire International Code. Additionally, the Fire Marshall works with the OUC to validate that the installed in-building radio system provides adequate levels of service.



The Office of Unified Communications (OUC):

The OUC is the operator of the public safety radio network and therefore will ensure that the in-building radio systems meet the radio performance criteria. The performance criteria include coverage requirements but also interference handling management protecting both the radio enhancement system and the host network. The requirements also include among other things visibility and access to the system for operations and maintenance purposes.

The building owner/manager:

As required by the FCC, the owner and operator of the repeater system (e.g. the building owner/manager) needs to obtain an authorization to transmit on frequencies from the entity they are licensed to. The OUC is also the public safety frequencies licensee to the FCC. Once the in-building system has demonstrated it meets the performance criteria described in this document, and once the Fire Department has validated the system has met its requirements, the OUC will provide the building owner an authorization to transmit on the frequencies they are licensed to.

Additional details on the building owner or manager's responsibilities are described in the following section.

3 Building Owner/Manager Responsibilities

The following slide give a high-level summary of the process and highlights key building owner responsibilities.



Mandatory Sequence of Tasks

- **Step 1 – Project Initiation**
 - Building owner submits an authorization request
 - OUC adds to database and assigns unique ID / Site Code Number
- **Step 2 – Design Validation**
 - Building owner submits design documentation / equipment specifications / personnel certifications
 - OUC reviews and approves design documentation / submittals
 - Vendor installs equipment
- **Step 3 – System Acceptance**
 - OUC approved vendor inspects system upon installation complete
 - OUC approved vendor coordinates test schedule with OUC
 - OUC approved vendor conducts testing per OUC requirements / submits results
 - Building owner submits As-Built diagrams and cable sweep results
 - OUC coordinates Fire Marshall test
 - OUC provides transmission authorization letter
- **Step 4 – Continuous Operation / Annual Inspection**
 - System monitoring via OCTO-NOC
 - OUC maintains remote access and credentials for emergency shut down of system
 - OUC maintains emergency contact info
 - Building owner provides scheduled maintenance
 - Annual test / inspection by OUC authorized vendor

<u>Building Owner Costs</u>	
✓	Testing by OUC approved vendor
✓	Equipment maintenance contracts
✓	Remote monitoring licenses
✓	Remote monitoring connectivity
✓	Annual testing by OUC approved vendor

The owner of the building is responsible for:

- Fund the procurement of the repeater system and ancillary components and its installation. Equipment and system performances shall meet OUC requirements.
- Contract one of the OUC approved vendors to perform the acceptance testing when implementation complete
- Schedule with the approved OUC testing vendor and the OUC the acceptance testing itself
- Provide an IP connectivity for OUC remote access to the equipment. The connectivity specifications shall match OUC requirements.
- Provide required documentation according the OUC requirements
- Forward at its cost the monitoring of the equipment to the DC -NOC
- Provide the contact information for the building manager and a 24x7 emergency contact no later than acceptance testing time. The building manager will receive from the OUC the authorization to transmit on OUC licensed frequencies.
- Contract a vendor to maintain the equipment



- Provide advance notice to the OUC of any equipment or parameter changes;
- Contract one of OUC approved vendors to perform annual testing
- Share the testing results with the OUC. If OUC identifies any issues you shall make necessary adjustments within one (1) week of the date of the notification from OUC; and
- At any time, if the BDA/DAS system causes degradation to the District's radio system, immediately shut down the system and provide OUC with plans to remedy the issue within 24 hours.
- Fund additional testing and any troubleshooting and repairs costs if necessary
- Fix deficient equipment or configurations until meeting requirements.

Also please note that:

A significantly number of buildings are built to be occupied by offices or for commercial use.

It might take a few months, sometimes years to rent all floors out. Meanwhile, some of the building interiors might not be completed when coming to perform a Public safety DAS test (floors without interior walls, no ceilings, etc.)

In that case the building is not complete i.e. the whole building still needs to be tested. The testing staff shall note which floors are not physically complete.

The transmission authorization letter sent by the OUC will specifically include which floors were complete when testing occurred and which floors were not. The letter will also explain that when significant modification will be made to the building affecting radio waves propagation and/or levels of interference, the building owner shall perform again a public safety BDA/DAS test at his cost using one of the OUC approved vendors. A non-exhaustive list of modifications affecting radio propagation includes:

- adding interior/exterior walls, ceiling, partitions,
- extending the Distributed Antennas System
- implementing additional wireless systems (internal systems or cellular systems for instance)

The extent of the test will depend on the modifications made to the building. It will be determined on a per case basis.

4 OUC Approved Vendors

The List of OUC approved testing vendors can be found on this web page:

<https://ouc.dc.gov/page/oucs-public-safety-building-radio-systems-requirements>.