

ATTACHMENT B

Cabling Requirements for the District of Columbia (Healthcare Finance Office) 441 4th Street NW, 9th Floor & 10th Floors, Washington, DC 20002

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Project Overview

The District of Columbia Government , Department of General Services (DGS) on behalf of City-Wide District of Columbia Government agencies requires that contracted vendors providing and performing cabling/wiring jobs meet industry-standard wiring requirements.

The current City-Wide Wiring Standards are published describing industry minimum requirements. (Appendix A)

The purpose of this document “Request for Bid and Statement of Work” is to include and outline additional requirements over and above the industry standards which contracting vendors desiring to do business in a competitive environment with the District must meet.

The DGS is facilitating cabling upgrade that will include existing cable remediation and installation of drops for the Department of Healthcare Finance (DHCF) at 441 4th Street, N.W... 20001 on the 9th and 10th floors. There is also a Video Teleconferencing Solution for this requirement as well.

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Appendix: A

Current Scope of Cabling / Wiring Requirements

As part of an effort to insure the District of Columbia government's physical infrastructure for voice and data telecommunications meets or exceeds industry-wide standards and specifications, the Office of the Chief Technology Officer (OCTO) has determined the minimum technical requirements for voice and data cabling used by all District Government agencies. As authorized by District of Columbia Municipal Regulations (DCMR) (1-1402), the OCTO provides telecommunications oversight for all agencies within the District government and acts as an agent for various District agencies in securing a compliant, high-performance voice and data network structured cabling systems. The OCTO works with individual agencies to determine their requirements; assists in the preparation an agency specific Statements of Work (SOW); reviews quotations, inspects the work of various contractors and recommends the acceptance or rejection of the effort. As the authorizing agent, DRES is not responsible for any changes to the initial scope of the task or project once a contractor quotation has been accepted. The OCTO shall not be held responsible for any activity increasing the scope of effort unless specifically requested in writing from the OCTO. Deviations from the requirements of this Statement of Work must be issued on agency letterhead and countersigned by a responsible OCTO representative.

PURPOSE: This document details the minimum services and practices the Contractor shall provide the District Government as part of their proposal for the installation of voice and/or data cabling infrastructure. The requirements in this Blanket Statement of Work shall be incorporated in any proposal, contract, Blanket Purchase Agreement or task order to perform voice or data infrastructure cabling for the Government of the District of Columbia.

UNDERSTANDING OF THE TECHNICAL REQUIREMENTS: The Chief Technology Officer (CTO) desires to maximize the utilization of any existing cabling system that is compliant with current ANSI/TIA/EIA specifications and recommendations for voice or LAN cabling. The Contractor shall dedicate the time and resources necessary to develop a thorough understanding of the technical requirements for this request and the business goals of the agency, the CTO and the District government. The Contractor shall meet or exceed these requirements, as specified. The Contractor must understand that a standardized, intelligent distribution network allowing efficient and effective centralized management must be in place as the foundation for our strategic plan. The technical design and cable components used in our communications infrastructure are straightforward in design. The infrastructure is based on proven state-of-the-art industry-standard techniques and technologies.

DEFINITIONS: For the purposes of this Statement of Work, the following additional definitions shall apply.

ACP – Association of Cabling Professionals. A telecommunications body serving the cabling and building industries that develops standardized installation practices.

ANSI – American National Standards Institute. The administrator and coordinator for the United States private sector voluntary standardization system.

BICSI – Building Industry Consulting Services International. An international telecommunications body serving the building industry that develops standardized installation practices. The Telecommunications Distribution Design Manual (TDMM) published by BICSI is used as the reference for the installation practices for telephone and data cabling. All references to the BICSI TDMM refer to the current edition.

CENELEC – European Committee for Electro technical Standardization. The administrator and coordinator for the European private sector voluntary standardization system.

CSA – Canadian Standards Association. A Canadian testing and certification agency comparable in function to the Underwriter’s Laboratories.

CTO – Chief Technology Officer. The CTO has oversight and approval of all technology projects conducted within the District of Columbia as prescribed by District law.

DGS- Department of General Services. DGS provides strategic management and financial planning for the District’s portfolio of more than 18 million square feet of owned space and 3.5 million square feet of leased space.

ECMA – European Computer Manufacturer’s Association – An international industry association that promulgates and publishes industry-wide standards insuring compatibility between devices and systems.

EIA/TIA – Electronic Industries Association, Telephone Industries Association. Electronic and telephone Industry associations that promulgate and publish industry-wide standards insuring compatibility between devices and systems.

ETL – Electrical Testing Laboratories. An independent testing laboratory that provides product testing and certification.

IDC – Insulation Displacement Contact

IEEE – Institute of Electrical and Electronics Engineers, Inc. An international organization that is responsible for promulgating and publishing minimum standards insuring compatibility between devices and systems.

FCC – Federal Communications Commission. The US Government agency having the power to regulate all electrical communications systems originating in the United States including radio, television facsimile, telegraph, telephone and cable systems.

ISO – International Organization for Standardization. An international organization with the responsibility for developing, promulgating and publishing international standards that relate to health, safety and practices.

NEMA – National Electrical Manufacturers Association. An industry association with the responsibility for developing, promulgating and publishing standards that relate to health, safety and practices.

NFPA 70 NEC – National Fire Protection Association, National Electrical Code. A nationally recognized code containing provisions that detail the practical safeguarding of persons and property from hazards relating to the use of electricity. All references to the NEC refer to the current edition.

OCTO – Office of the Chief Technology Officer. See CTO.

Outside Plant (OSP) – Cable and equipment designed for exposure to the elements or burial without enclosing in conduit or other protective sheathing.

TIA/EIA – See EIA/TIA.

UL – Underwriter’s Laboratories. A non-profit corporation established to maintain and operate laboratories for the examination and testing of devices, systems and materials to determine their relation to hazards to life and property.

WAO – Work Area Outlet. The outlet at which horizontal cabling is terminated at the user’s workstation location. A WAO may be located in a floor, wall or systems furniture space.

II. **GENERAL SCOPE OF WORK ITEMS**

1. Provide support for the general objectives of this scope of work:
 - (a) The Contractor shall provide an industry-standard and compliant, high-performance structured cabling system design that meets or exceeds all current standards and accommodates multi-media applications. The Contractor shall install, test and certify the structured cabling infrastructure to support the agency and CTO requirements on a firm fixed-price (FFP) basis.
 - (b) The Contractor shall perform a physical site survey for each specified site and provide the requesting agency and the CTO with a detailed infrastructure design and installation plan that incorporates and maximizes the use of any existing compliant cable infrastructure. The plan shall indicate the number and types of cables proposed, recommended outlet locations and contain a project Gantt chart with applicable tasks, work breakdown structure, milestones showing completion dates and other logic leading to a successful project prior to beginning the cabling effort.
 - (c) The Contractor shall remove any existing telecommunications cabling in any space that is either abandoned or displaced as a result of the installation of new telecommunications infrastructure under this Statement of Work.
 - (d) Material and work specified herein shall comply with the applicable requirements of:
 - a. ANSI/ICEA S-80-576
 - b. ANSI/ICEA S-83-596-1994
 - c. ANSI/ICEA S-87-640-2000
 - d. ANSI/TIA/EIA – 26-7-1998
 - e. ANSI/TIA/EIA – 455-A-1991
 - f. ANSI/TIA/EIA – 455-1.07
 - g. ANSI/TIA/EIA – 455-50B
 - h. ANSI/TIA/EIA – 525-14-A
 - i. ANSI/TIA/EIA – 526-7-1998
 - j. ANSI/TIA/EIA – 526-14-A-1998

- k. ANSI/TIA/EIA – 568
- l. ANSI/TIA/EIA – 569
- m. ANIS/TIA/EIA – 570
- n. ANSI/TIA/EIA – 598-A-1955
- o. ANSI/TIA/EIA – 604-3-1997
- p. ANSI/TIA/EIA – 606
- q. ANSI/TIA/EIA – 607
- r. BICSI Telecommunications Distribution Methods Manual (BICSI TDMM)
- s. CENELEC – EN 50173
- t. CTO Standards and Practices
- u. District Regulation
- v. FCC 47 CFR 68
- w. IEEE 802.3ab
- x. ICEA S-90-661
- y. ISO – 11801
- z. NEMA WC-63.1-2000
- aa. NEMA – 250

DETAILED SCOPE OF WORK ITEMS

- 1) The Contractor shall:
 - (a) Provide two (2) Category 6 (CAT (6) ***plenum***) cables for data and voice to the user locations specified for all new installations. Cat 6 high performance plenum rated copper cabling shall meet or exceed ANSI/EIA/TIA – 568 – B, CENELEC EN 50173, ICEA S-90-661, NEMA WC-63.1 and ISO 11801 requirements. The primary data cable shall have a gray jacket. The primary voice telephone cable shall have a blue jacket and data will have the orange jacket at the wall plate.
 - (b) Exercise care when installing category rated cable. Cable shall not be subjected to a pulling tension greater than 25 LBF (40 Newtons), nor shall the cable be kinked at any point. Cables subjected to more than 25 LBF of pulling tension or exhibiting evidence of kinks, as disclosed by a discoloration or deformation of the cable jacket, shall be replaced.
 - (c) Terminate each voice and data cable on an 8 position, 8 contact (8p8c) un-keyed keystone style Cat 6 insulation displacement contact (IDC) jacks at the Work Area Outlet (WAO);
 - (d) Category 6 (CAT (6) ***plenum***) cable shall be independently tested to deliver proof the product will support Gigabit transmission in accordance with EIA/TIA 568-B and the IEEE 802.3AB standard (NOTE: the District of Columbia Wide Area Network (WAN) engineers must review cable standards for future installs). These tests must verify full compliance with the standards set forth in the EIA/TIA 568-A-5 specifications and ICEA S-90-661-1997 Cat 5X-100 Horizontal Cable specifications.

SCOPE

Room Requirements: This will be a Voice of Internet Protocol (VoIP) solution for telecommunications. There are a total of 375 dual voice and data plus an additional nine (30) dual pulls for the wireless access points (dual drops) for the along with 24 single CAT 6 runs for network printers floor along with a dual fiber run. *Please remember to pull your low voltage permit!*

Data Drops and telecommunications racks installation:

- ✓ 117, which includes nine (30) wires access points dual drops for the cube and office areas as the drawing designate.
- ✓ There will be a total of three (6) Comcast Co-Ax cable drops
- ✓ **Please factor in 15% more for additional drops, which can be in a variation of CAT (6) VGA, Co-Ax or HDMI**
- ✓ **Please provide patch cables for all closet work**
- ✓ Install all CAT (6) plenum dual drops at location specified on drawings
- ✓ Install vertical horizontal wire management on communications racks
- ✓ Provide a hard copy of the test results for connectivity
- ✓ All cables and jacks will be color coded according to DC City Wide standards
- ✓ Terminate all existing cables onto new patch panels. Test and Label all cables
- ✓ Six (6) 48 port patch panels per cabling design per closet (North and South)
- ✓ Cable vendor will install a fifty (50) pair copper tie cable block for analog services per closet
- ✓ Demo all existing cable
- ✓ All installation miscellaneous Materials (Tape, Tie Wraps, Velcro Wraps, Labels etc... and closet patching from the patch panel to the switch) will be provided by contractor
- ✓ **Vendor will install 2 or more latter racks for cable management.**
- ✓ DCNET will deliver its internet and data services via copper Ethernet handoff between the DCNET and switch and the customer LAN switch.
- ✓ DCNET will deliver its VoIP service via the customers cable infrastructure
 - VoIP Handset directly to DCNET Equipment via the customer's cable infrastructure
 - DCNET discourages the use of consumer grade routers, hub and switch to extend port density as this will affect the network performance and throughput, network issues created by these devices may result in temporary interruption of services
 - DCNET's preference is a 1-to-1ratio of switch port of user when DCNET is providing direct LAN support.

Additional Requirements:

Power requirements will be provided by the Contractor as needed.

Wireless LAN Requirements for the Structured Cable Vendor:

Additionally the cabling vendor is required to install the wireless access points to the DC network, with dual pulls (Orange Cat (6) cable) to each access point. Additionally DC-Net will configure the APs for Secure and DCFreeWiFi however; the cabling vendor is responsible for installing the data cable for the AP's in the areas designated by DC-Net's wireless team for the access point location.

Fiber Run to the MPoP for the Structured Cable Vendor:

Also the cabling vendor is responsible for the installation of one armored shielded 48 strain L/C to L/C ended fifty (50) micron multimode fiber one hundred seventy five feet (175) run from the DCNET M (POP) to the 1C server room in the One Judiciary Square (OJS) building. Additionally the voice and data cabling vendor is responsible for providing the **CORNING** fiber tray, bulkhead and A/B patch panels for both the MPoP and server room.

Audio Visual Requirements for the Structured Cable Vendor:

Audio Visual cabling will be installed in the conference areas. Equipment acquisition and installation will be managed by DGS. The DGS will be responsible for power & cable drops or for running conduit to the various parts of the room. The cabling vending will responsible for the acquisition and partial installation of one (1) wiremold by Legrand, this wiremold configuration is two (2) Cat 6 ports, one (1) VGA, one (1) HDMI and two (2) electrical plugs.

Cable Television Requirements for the Structured Cable Vendor:

The DGS cabling contractor will install the CO-Axe cabling for the TV's/LCD's.

Video- teleconference Requirements for the Audio Visual Vendor:

Summary

The Healthcare Finance Main Conference Room will be video teleconferencing-enabled and provide PC presentation, DVD and VHS playback capabilities. The system will include an integrated loudspeaker and microphone system for near and far-end sound. A touchpanel control system will be implemented for end-user control and operation.

Infrastructure

- ✓ Supply and install (1) Crestron Digital Media interconnect from underneath the conference table to the A/V rack.
- ✓ Supply and install (1) Cat5e cable from camera to VTC codec such that HDMI Cat5 extenders can be used to transmit HDMI video and control.
- ✓ Supply and install (3) microphone cables from the conference table to the A/V rack. All in-wall and in-floor cabling will be plenum-rated.
- ✓ Power at the display, equipment location and table will be responsibility of others.
- ✓ LAN/ data connections will be responsibility of others.

- ✓ A cable path from the table to the A/V rack, including core drilling, will be responsibility of others.

Installation

- ✓ Supply and install (1) furniture-grade A/V rack with (2) universal shelves.
- ✓ Install and configure GFE DVD and VHS player.
- ✓ Supply and install (1) Crestron DMPS-300-C Digital Media Presentation System
- ✓ Supply and install (1) Crestron TPMC-9-B touchpanel.
- ✓ Supply and install (3) Shure MX393 tabletop microphones on conference table.
- ✓ Supply and install surge protector at equipment rack.
- ✓ Supply and install (1) Crestron DM-TX-201-C DigitalMedia transmitter at conference table.
- ✓ Supply and install (1) Crestron DM-RMC-100-C DigitalMedia receiver behind existing GFE TV display.
- ✓ Supply and install (1) Cisco 12x PrecisionHD camera and wall-mount bracket underneath display.
- ✓ Supply, install and configure (1) Cisco C40 VTC codec in A/V rack.
- ✓ Configure existing GFE in-ceiling speakers to operate with Crestron DMPS-300-C.

User Control and Operation

- ✓ Program and configure the Crestron system and touchpanel to accommodate all sources and user commands.
- ✓ Sources include GFE DVD and VHS player and C40 codec.
- ✓ Program and configure the control system to wake the C40 codec and power on the display upon PC connection at table and/ or activity on Crestron touchpanel.
- ✓ Program and configure the control system to power off the display when codec enters sleep mode.
- ✓ Program and configure the control system to power system on if incoming call is detected. Feature to be enable or disabled by codec's auto-answer setting.
- ✓ Program and configure the control system for remote administration monitoring, alerting and control.
- ✓ Crestron control will reside on HFC LAN.
- ✓ LAN/ data connections will be responsibility of others.

User Training and Instruction

- ✓ Provide on-site user training and instruction.
- ✓ Design user reference guide.
- ✓ Supply and install (1) Cat5e cable from camera to VTC codec such that HDMI Cat5 extenders can be used to transmit HDMI video and control.
- ✓ Supply and install (3) microphone cables from the conference table to the A/V rack.
- ✓ All in-wall and in-floor cabling will be plenum-rated.
- ✓ Power at the display, equipment location and table will be responsibility of others.
- ✓ LAN/ data connections will be responsibility of others.

- ✓ A cable path from the table to the A/V rack, including core drilling, will be responsibility of others.

Installation

- ✓ Supply and install (1) furniture-grade A/V rack
- ✓ Supply and install (1) Crestron DMPS-300-C Digital Media Presentation System
- ✓ Supply and install (1) Crestron TPMC-9-B touchpanel.
- ✓ Supply and install (1) Sharp 60" flat-panel LED and (1) Peerless wall mount bracket.
- ✓ Supply and install (3) Shure MX393 tabletop microphones on conference table.
- ✓ Supply and install surge protector at equipment rack.
- ✓ Supply and install (1) Crestron DM-TX-201-C DigitalMedia transmitter at conference table.
- ✓ Supply and install (1) Crestron DM-RMC-100-C DigitalMedia receiver behind TV display.
- ✓ Supply and install (1) Cisco 12x PrecisionHD camera and wall-mount bracket underneath display.
- ✓ Supply, install and configure (1) Cisco C40 VTC codec in A/V rack.
- ✓ Supply and install (3pr.) JBL Control 26CT ceiling speakers and configure with Crestron DMPS-300-C

User Control and Operation

- ✓ Program and configure the Crestron system and touchpanel to accommodate all sources and user commands. Sources include Cisco C40 codec.
- ✓ Program and configure the control system to wake the C40 codec and power on the display upon PC connection at table and/ or activity on Crestron touchpanel.
- ✓ Program and configure the control system to power off the display when codec enters sleep mode.
- ✓ Program and configure the control system to power system on if incoming call is detected. Feature to be enable or disabled by codec's auto-answer setting.
- ✓ Program and configure the control system for remote administration monitoring, alerting and control.
- ✓ Crestron control will reside on DHF LAN.
- ✓ LAN/ data connections will be the responsibility of others.