

| Information Management Service Standard Operating Procedure (SOP) | | | | |
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| SUBJECT: | | Cable Installation Labeling and Testing | | IMS-SOP # 07-013 |
| New | | Revision Supersedes: | IT SOP # | |
| Prepared by | | | | Date |
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Cable Installation, Labeling and Testing

1. **Purpose:** To define policy and procedures for the labeling and identification of station drops as it applies to the cabling, face plates and patch panels in the IDFs.
2. **Policy:** The intent of this SOP is to provide documentation of the overall system including access and control.
3. **Responsibility:** Primary responsibility for the system belongs to the Telecom Group, Office of Information and Technology, (OI&T) who reports to the Facility CIO. Cabling contractors employed to provide new voice and data drops must adhere to this document and will label and indentify each station drop accordingly.
4. **Procedures:**

a. System Overview

All phone and data cabling shall be installed by the contractor and shall be accordance with EIA/TIA 568B, 569 and EIA/TIA 606 Communication System specifications, and Building Industry Consulting Service International (BICSI) Standards design manuals. The complete cable distribution system shall be labeled in accordance with the latest edition/revision level of ANSI/TIA/EIA 606, Administration Standard for the Telecommunications Infrastructure of Commercial Buildings.

The cable interconnecting a network outlet to patch panel shall be one continuous length with not intermediate joins, splices or taps. No more than 24 cables shall be tied in a bunch. Un-terminated “future capacity” cables are not permitted. All installed cables shall be terminated at each end with documentation, labeling and test results provided electronically.

All outside cable shall be shielded, 24 AWG solid conductors, solid PIC insulation, and filled core (flexgel) (waterproof) REA LISTED PE 39 or PE 89 CODE. All voice and data telecommunications outlets (TO) shall be a

minimum Category 6-compliant eight position RJ-45 non-keyed (EIA/TIA 568B) for voice and Category 6 compliant eight position RJ-45 non-keyed (EIA/TIA 568B.2-1) for data. Cable installed (outside plant, inside riser, and station cabling) shall adhere to the requirements of ICEA Publications S-80-576-1988 (Ref. B1.6) as to size, color code, and insulation. Backbone cables shall be marked at each endpoint and at all intermediate pull/access points or junction boxes. Label shall indicate origination and destination, TR ID, sheath ID and strand or pair range. Horizontal cables shall be marked at each end, on the sheath indicating the TR, patch panel and panel port to which the cable is wired.

b. Access Control

The Telephone Switch Room/Main Distribution Frame (MDF), the computer room and all Voice and Data Closets (IDFs) are considered major arteries in the Medical Center's network/communication system and therefore access to this system should be treated as such. Access to these areas is controlled and all requests for access must be coordinated with IMS.

Contractors preparing to do work and the VA Long Beach Healthcare System must first complete all the necessary background security requirements as outlined in VA Directive 6500 and the Veterans Affairs Acquisition Regulation (VAAR) Clause 852.273-75-*Security Requirements for Unclassified Information Technology Resources* (Interim October 2008), and all contractors must first complete the Contractors Risk Level Designation Form, VA Form 2280A.

To ensure that appropriate security controls are in place, contractors must follow the procedures set forth in the "VA Information and Information System Security/Privacy Requirements for IT Contracts" located at http://www.iprm.oit.va.gov/Security_and_Privacy_Requirements_for_Contractors.asp.

c. Labeling

Labels shall meet the legibility, defacement, exposure and adhesion requirements of UL 969 and shall be preprinted or laser printed type.

Where used for cable marking, provide vinyl substrate with a white printing area and a clear "tail" that self laminates the printed area when wrapped around the cable. If cable jacket is white, provide cable label with printing area that is any other color than white, so that labels are easily distinguishable.

Where insert type labels are used, a clear, plastic cover label shall be provided.

- i. Faceplates:** All phone and data cables shall be installed color coded; gray, blue, white and yellow, except for wall phones which is addressed separately below. The faceplates and the ports on the patch panels shall be of the same corresponding color: gray-gray, blue-blue, white-white and yellow-yellow. Phone cables shall be gray to match the corresponding port on the faceplates. The gray

jack will be on the top-left hand corner of the faceplate, followed by yellow at the top, right-hand corner, blue at the bottom left-hand corner, below the gray and white to be at the bottom, right-hand corner, beneath the yellow blue jack. Each faceplate shall incorporate modular, universal RJ45 jack sockets meeting or exceeding the Category 6 specification.

The label on the faceplate shall be readily visible on the top of the faceplate and must contain the building number, the floor, TC for Telecom Closet, (the building floor and TC designates the IDF of origin), the faceplate number be it A, B, C, D with the patch panel id CA, CB and the port number on the patch panel 01, 02, 03 etc.

The first position is the building number, the second position is the floor, the third position is TC for Telecom Closet (if more than one closets are on a floor then the closets must be labeled as TN for North closet, TS for South closet, TE for East closet and TW for West closet). The fourth position is the panel number (CA, CB, CC...) and the fifth and sixth positions are the jack numbers (01 thru 48).

Example: 162-01-TC-CB-34

162 = building number

-01 = floor

-TC = Telecom Closet (in this case only one this floor)

-CB = Patch Panel ID

-34 = Port on the patch panel



Figure 1: Faceplate showing labeling scheme.

- ii. **Faceplates wall phones:** The wall phones faceplates will consist of a single Category 6 drop, color coded green with the corresponding green RJ45 jack socket.



Figure 2: Faceplate wall phone

- iii. **IDF Patch Panel:** The patch panels in the IDFs shall be marked using adhesive labeling indicating the range of lines installed to it. Each port shall be labeled with the origination and destination with the original strand ID. The patch panels should be labeled as follows:
- The first patch panel in the first rack will always start with **CA**; C being used simply to designate Copper and the **A** being the first panel on the first rack. The panels will then be alphabetized accordingly; CA, CB, CC, etc with the CB panel immediately below the CA panel. The first port will be gray, and labeled as 01 followed by blue, white and yellow. Yellow in this case is not shown in figure 3, but all subsequent drops in the medical center will be quad and will include yellow.



Figure 3: Patch Panel Example

- iv. **Wall phones patch panel:** Cabling for wall phones will be terminated in a dedicated 48-port patch panel. Patch panel location to be determined with design of the IDF closet. The corresponding ports shall be green.



Figure 4: Wall Phone patch panel

5. Testing

- a. **Cable performance:** Cable performance must meet the minimum acceptable values as indicated in TIA/EIA 568B.2-1 Category 6 requirements.
- b. **Horizontal Copper Cabling:** The contractor shall test all cables and submit all horizontal cable test results data in an electronic format, with the resulting file formatted with one test result per 8.5" x 11" page. Minimal acceptable electronic formats include Microsoft Excel spreadsheet or Microsoft Word document.
- c. **High pair copper cables:** The contractor shall test all high count copper cables and submit test result information in an electronic format. Minimal acceptable electronic formats include Microsoft Excel spreadsheet or Microsoft Word document.
- d. **Cut sheet:** The contractor shall provide a cut sheet to include all drops terminated in each IDF to include the cable ID as outlined above, IDF of origin, room of origin, faceplate #, patch panel id and date installed. This cut sheet shall remain in each IDF on 8.5" x 11" page(s) and shall be provided electronically.
- e. **Quality Assurance:** All testing procedures shall comply with the applicable requirements of:
- ANSI/TIA/EIA 568-B.1 Commercial Building Telecommunications Cabling Standard, Part 1: General Requirements
 - ANSI/TIA/EIA 606-A administration Standards
 - ANSI/TIA/EIA 569-A Pathway and Spaces
 - ANSI/TIA/EIA 568-B Telecommunications Cabling Standard

- ANSI/TIA/EIA 758-A Customer Owned Outside Plant Telecommunications Cabling Standard
- BICSI Telecommunications Cabling Instruction Manual
- BICSI Telecommunications Distribution Methods Manual

6. References:

- ANSI/TIA/EIA 568-B.1 Commercial Building Telecommunications Cabling Standard, Part 1: General Requirements
- ANSI/TIA/EIA 606-A administration Standards
- ANSI/TIA/EIA 569-A Pathway and Spaces
- ANSI/TIA/EIA 568-B Telecommunications Cabling Standard
- ANSI/TIA/EIA 758-A Customer Owned Outside Plant Telecommunications Cabling Standard
- BICSI Telecommunications Cabling Instruction Manual
- BICSI Telecommunications Distribution Methods Manual

6. Review:

This document is scheduled for review annually when there is a change.
Notify IT Policy/Planner and IT Project Manager for reissue.

VA Long Beach OIT Policy Review

| Reviewer Comments | Signature | Date |
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