

SECTION 270553 — IDENTIFICATION FOR COMMUNICATIONS SYSTEMS

All Labelling

Text shall be printed in bold black over white type in a sans-serif font (Arial, Helvetica, or similar). Size of the text shall be such that the labelling is readable without additional magnification. Blurry or smudged text shall be rejected, and a new label shall be printed.

Label material and ink shall be water, ultraviolet, and chemical resistant with the intent of being clearly legible and identifiable after many years of service. In no case is pencil, ball-point pen, or normal Sharpie marker acceptable. If a label must be hand written (as a last resort) Sharpie Industrial (for indoor dry locations) or Sharpie Extreme (for damp or wet locations) markers must be used. Handwriting must be in capital print letters, not script and not lowercase, and must be clearly legible.

In no case shall the letters I, O, Q, S, or Z be used in any designation.

For designations including numbers 0-9, always prefix the number with a “0” zero.

Example:

A Jack ID shall be identified as XAA01, not XAA1.

“Jack ID” Labelling and Faceplates

Our labelling standard is a modification of TIA-606-A.

All faceplates shall be identified with labels in the following format and indicating the following information:

FSA N

F – Floor Designator (1 character) of the TR serving the jack

S – Space Designator (1 character) of the TR on the floor

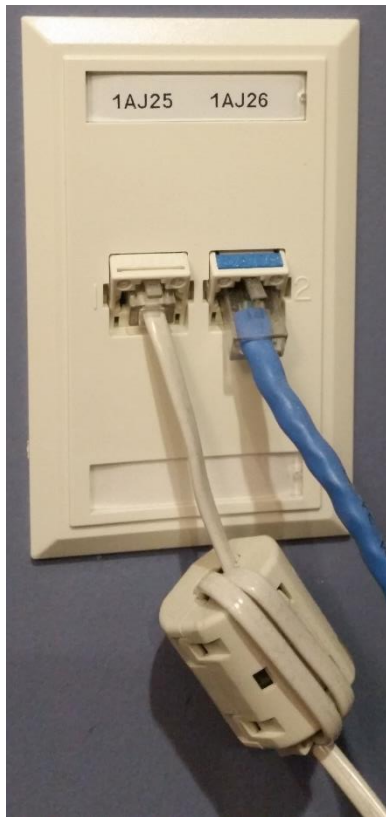
A – Patch Panel Designator (1 character) of the panel in the TR

N – Port on Patch Panel (2 digits)

Network Services will assign the designators to be used prior to the start of any work.

Example:

1AJ 25 1AJ 26



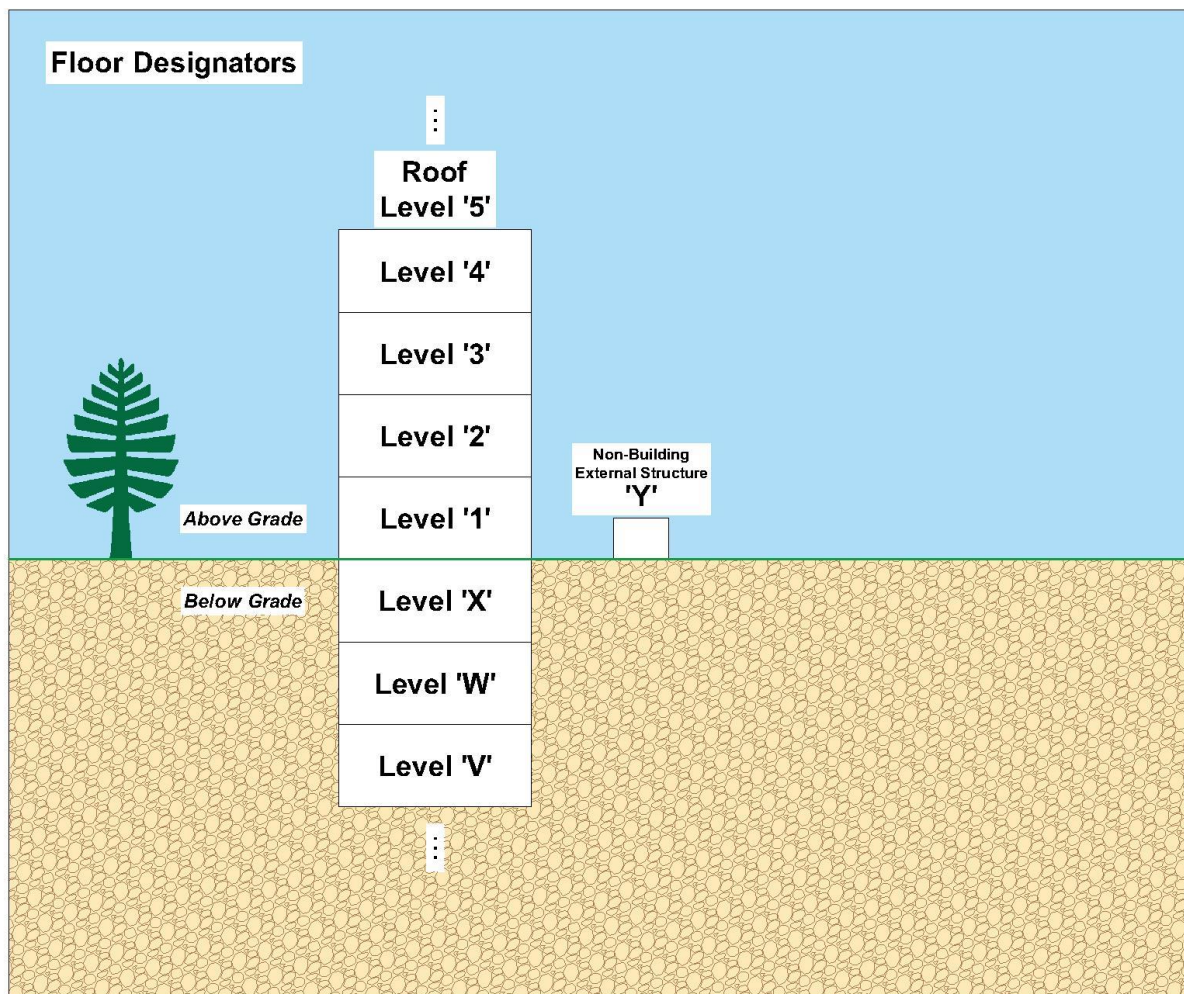
Indicates the serving TR is on the 1st floor (“1”), is the first (or only) TR on that floor (“A”), is the 9th patch panel in that TR (“J”), and is jacks 25 and 26 on that patch panel.

Jacks that are permanently served via a “pass-thru” port from a WiFi AP, VoIP phone, or similar device shall have a postfix of “A” following the Jack ID. Example: 1AJ25A indicates that this jack is permanently fed via the first pass-thru port of a device connected to jack 1AJ25.



Floor Designators

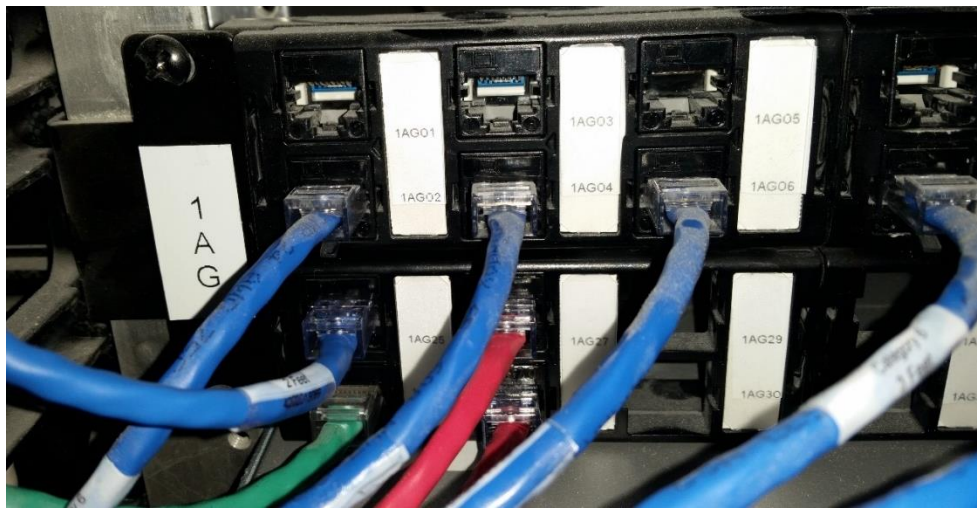
Floors or levels in a building shall be designated by a single alphanumeric character. The designator '1' represents the first or ground floor in a building. Numbers increase following floor location above ground. The designator 'X' represents the first level below grade (basement). Letters decrease following floor location below ground. The designator 'Y' represents an exterior above ground location that itself does not have its own building code (such as a generator outbuilding, parking garage gate or kiosk, or similar). This designator will only be used if the location contains a serving patch panel and/or network device. (For example, parking garage kiosks with jacks served by a closet somewhere else in the building shall be identified by that closet's floor and closet designator as a typical jack.)



Both ends of every station cable shall be labeled with the “Jack ID” information as described above within 4 to 6 inches of the termination of the cable.



Every Patch Panel shall be labeled with the “FSA” designators on the left-hand side of the panel and the N designator above or next to each port on each patch panel.



For Cat6A installations using the Commscope M2000 modular patch panel (pictured above), jacks shall be identified in the following order:

01	03	05	07	09	11	13	15	17	19	21	23
02	04	06	08	10	12	14	16	18	20	22	24
25	27	29	31	33	35	37	39	41	43	45	48
26	28	30	32	34	36	38	40	42	44	46	48

It is permissible to identify each jack on the patch panel with the N designator, or jack number, only. Combined with the FSA designator marked on the left-hand side of the patch panel, this provides sufficient information to properly identify each individual jack.

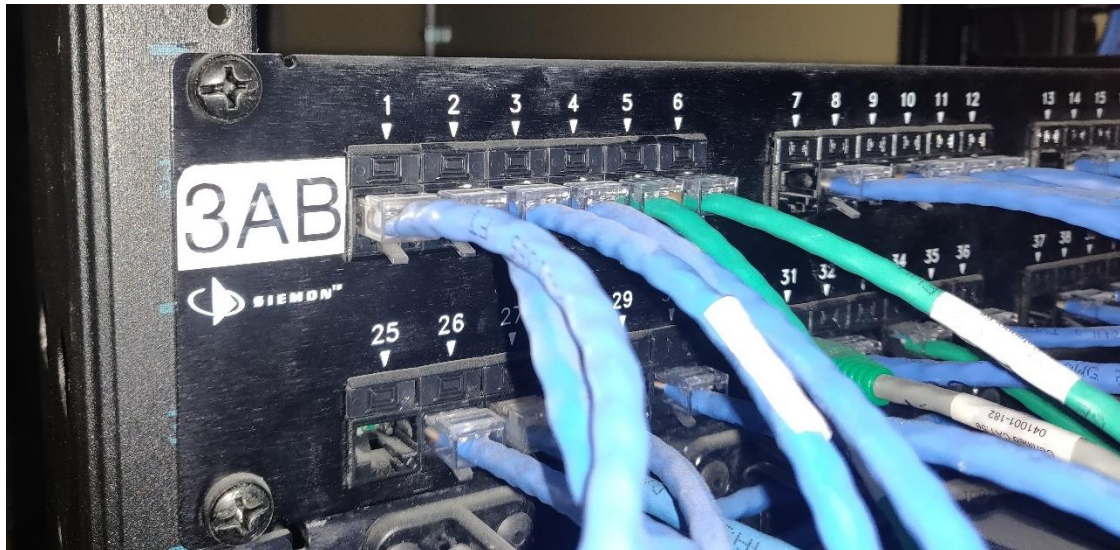
Example:

1AG	01	03	05	07	09	11	13	15	17	19	21	23
	02	04	06	08	10	12	14	16	18	20	22	24
	25	27	29	31	33	35	37	39	41	43	45	48
	26	28	30	32	34	36	38	40	42	44	46	48

1AG	1AG01	1AG03	1AG05	1AG07	1AG09	1AG11	1AG13	...
	1AG02	1AG04	1AG06	1AG08	1AG10	1AG12	1AG14	...
	1AG25	1AG27	1AG29	1AG31	1AG33	1AG35	1AG37	...
	1AG26	1AG28	1AG30	1AG32	1AG34	1AG36	1AG38	...

Both are acceptable. The first example allows the installer to more easily batch print a set of generic labels for all patch panels being installed.

Cat6 installations using the Siemon MX-PNL-48 2U patch panel are pre-identified in 2 rows of 24 jacks each: 1-24 and 25-48. These do not need to be relabeled, aside from the FSA identifier on the left-hand side of the patch panel.



Jack Colored Icons/Chicklets and Patch Cords

Jacks on a patch panel shall be identified using a colored icon or “chicklet” to indicate the intended service type of the jack. That color code is as follows:

Color	Service
Black	Default or User Data/VoIP Jack
Red	Fire Alarm, Elevator, Area of Refuge, or Code Blue Phone
Green	WiFi AP
Yellow	PoE Lighting Device
Orange	Building Management, Energy Management
Purple	Security Camera, Card Access
Blue	Active Workstation Jack (Do Not Use At Patch Panel)
White	Analog Voice/Fax
Gray	Outdoor Data Jack, Connected to Ground/Lighting Protector
Beige	(Reserved)
Brown	(Reserved)

Use the icon or chicklet that says the word DATA. Do not use the icons that have a graphic of a phone unless the jack is providing analog phone service (Elevator, AoR, Code Blue, Analog Phone/Fax).

Unless otherwise specified, at the workstation faceplate, the left-hand jack shall be installed with an icon that matches the color of the faceplate (ivory, gray, white, etc.) and the right-hand jack shall be installed with a Blue icon. Both icons shall have the word DATA unless the jack is providing analog phone service (Elevator, AoR, Code Blue, Analog Phone/Fax), then an icon with a phone graphic shall be used. The right-hand jack (even numbered) shall be “activated” on a network switch by default by Network Services. Jacks providing other services (WiFi, PoE Lighting, Building Management, Security, etc.) may be installed with icons matching the color code described above.

Previously, Dartmouth College Network Services had used a color scheme involving colored patch cords to identify the type of service being provided at a jack. For all new installations, all patch cords within a telecom data closet shall be colored Blue. The only exception is that patch cords providing service to the Fire Alarm or other life-safety systems shall be colored Red. The Red color shall not be used for any other non-life-safety cabling.

For historical reference, that color code is provided here:

Blue	Data
White	VoIP Phone

Green	WiFi AP
Gray	Building Management
Red	Fire Alarm

Conduit and Innerduct

Every Conduit and Innerduct shall be labelled with “FROM” and “TO” information for the conduit/innerduct at every point where it ends or passes through a space or manhole. In the case of innerduct or cable running in a cable tray or otherwise supported (J-Hooks), the same labelling shall be applied every 100 feet or wherever makes logical sense (example: at point where tray passes through a wall).

The “FROM” and “TO” designators shall indicate where the conduit/innerduct ends, regardless of the destination of any cables that may be installed in the conduit/innerduct. In the case where a pull-box is installed mid-span in a run of conduit, the pull-box location should also be noted on the tag. (Think of yourself 10 years from now, you’d want to know where that pull-box is...)



Conduit ends shall be identified with a rigid plastic tag attached to the conduit with a zip tie. A suitable printed label shall be securely adhered to the tag or shall be filled out by hand using Sharpie Industrial or Extreme markers. Brady 101997 tags are pictured. Similar rigid plastic tags are acceptable.



Innerduct, Smurf Tube, and/or cable jackets shall be identified with a green Dartmouth Network Services wrap around marker. These markers shall be filled out by hand using Sharpie Extreme markers indicating the building and room number that the duct or cable begins and ends in. There are 2 locations on each marker to fill out this information – both shall be filled out with the same information.

“FROM” and “TO” should be in the format of one of the following:

BuildingCode-RoomNumber
ManholeID-Side
HandholeID-Side

Example 1:

CURRIER-M002
CURRIER-M101

Indicates that the conduit labeled has ends in Currier room M002 and Currier room M101 and does not stop at any point in between.



Example 2:

KEMENY-014
TMH503-S

Indicates that the conduit labeled has ends in Kemeny room 014 and the southern wall of Telecom Manhole #503.

[Picture of Conduit Label]

Building Codes, Room Numbers, and Manhole IDs to be provided/confirmed by Network Services. Codes, Numbers, or other Identifiers shall not be created or improvised by the contractor.

Pathway IDs shall be prefixed with one of the following designators:

TMH – Telecom Manhole
THH – Telecom Handhole

Fiber Optic Housings

Fiber Optic Termination Enclosures shall be labeled as follows:

BuildingCode-RoomNumber-HousingNumber

Example:

NPARK10-003-1

Indicates the first fiber housing in room 003 of 10 North Park Street.

Building Codes, Room Numbers, and Fiber Housing Numbers to be provided/confirmed by Network Services.

Cassette slots shall be identified with a single letter, beginning with the letter 'A' at the top-left most cassette when viewed facing the front of the cassette.

For Corning CCH-01U Housings:

A	B
---	---

For Corning CCH-02U Housings:

A	B
C	D

For Corning CCH-03U Housings:

A	B
C	D
E	F

For Corning CCH-04U Housings:

A	B	C	D	E	F	G	H	J	K	L	M
---	---	---	---	---	---	---	---	---	---	---	---

For Corning WCH-02P Housings:

	A	B
--	---	---

For Corning WCH-04P Housings:

	A	B
	C	D

For Corning WCH-06P Housings:

	A	B	C
	D	E	F

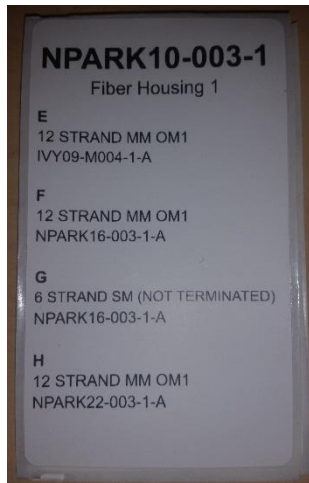
For Corning WCH-12P Housings:

A	B	C		G	H	J
D	E	F		K	L	M

The exterior front panel of each enclosure shall also identify the cassettes or adaptor panels in the enclosure as follows:

Cassette Slot
strand Type Grade
Destination of Cable

Example:



E
12 STRAND MM OM1
IVY09-M004-1-A

F
12 STRAND MM OM1
NPARK16-003-1-A

Indicates that the connectors on Cassette E of this housing terminate 12 strands of OM1 multimode fiber from Cassette A of housing 1 in room M004 of 9 Ivy Lane, and the connectors on Cassette F of this housing terminate 12 strands of OM1 multimode fiber from Cassette A of housing 1 in room 003 of 16 North Park

Street.

A cassette with the proper number of connectors for the cable being terminated shall be used. (Example: do not use a 12 connector cassette when terminating a 6-strand cable.) Do not terminate multiple cables on the same cassette, even if the cables have the same destination. (Example: do not terminate 2x 6-strand cables on a single 12 connector cassette).

Fiber Optic Cables

Installed fiber optic cables shall be identified using the information from the terminating enclosure on both ends at every point where it ends or passes through a space.

Example:

MACLEAN-M202-1-A
MURDOUGH-A15-5-A

Indicates that this cable terminates at the referenced locations.



Cables shall also be tagged with a green “Dartmouth Network Services” wrap around marker. These markers shall be filled out by hand using Sharpie Extreme markers indicating the building and room number that the duct or cable begins and ends in. Indicate the Fiber Housing and Cassette(s) only if known at the time of install. Also, the Month and Year of installation shall be indicated on the marker. There are 2 locations on each marker to fill out this information – both shall be filled out with the same information.

At the point where a cable enters a fiber housing, a self-laminating wrap-around label may be used instead of an additional green Dartmouth Network Services wrap around marker, provided that there is at least one green Dartmouth Network Services wrap around marker on the cable inside the telecom room.

[Picture of Laminating Wrap Around Cable Label]

In the case of cables running in a cable tray or otherwise supported (J-Hooks), a green Dartmouth Network Services wrap around marker shall be applied every 500 feet or wherever makes logical sense (at point where cable enters or exits a conduit/innerduct, at a point where a cable tray forks into multiple directions, etc.).

Cables shall never be fusion spliced mid-span as part of new installation. If a cable is damaged during installation, or is not long enough to reach from A to Z, a new cable must be installed.

Fiber Optic Jacks (FttX)

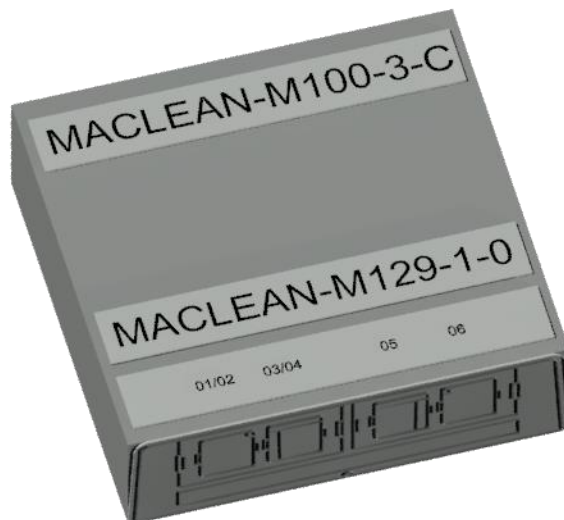
Fiber Optic Jacks (providing service to end-users or devices in a room that is not a TR or mechanical space) shall also follow the labelling convention of Fiber Optic Enclosures and Cassettes. They shall also label the destination of the strand.

BuildingCode-RoomNumber-FaceplateNumber-0-Strand

Example:

MACLEAN-M129-1-0-01/02

Indicates fiber optic strands 1 and 2 in the first fiber optic faceplate ('1') in room M129 of MacLean. The '0' in the "Cassette" designator is an easy reference to identify this as an FttX end-user jack.



Patch Cords

Fiber and Copper Patch Cords shall be labelled in one of two configurations:

ABZ / ZYA

3-Line Label for identifying patch cords that connect to a device (switch, router, etc.)

START DEVICE*

PATCH POINT*

END DEVICE

Example:

[Picture]

WEST-CAMPUS-CRT e7/12

MACLEAN-M202-1-E-1,2

MURDOUGH-1-DSW Te1/1

ACDZ / AEFZ / ...

4-Line Label for identifying patch cords connecting between 2 patch panels

START DEVICE

PATCH POINT*

PATCH POINT*

END DEVICE

Example:

[Picture]

WEST-CAMPUS-CRT e6/8

MURDOUGH-A15-5-A-3,4

MURDOUGH-A15-2-C-5,6

BYRNE-B12-2-A-5,6

For either configuration, the identifier following a device name shall be the port as it is referred to as physically labeled on the device (in the case where the identification of the port is different in software).

The identifier(s) following a fiber cable ID shall be the strand number of the cable or connector number of the cassette. Do not refer to a duplex pair of cables as a single identifier.

Copper Ethernet Patch Cords shall follow the same specification as Fiber Optic patch cords, substituting Jack IDs for Cassette IDs.

Example:

[Picture]

CISCO-5508-SWI-2-WSW e1
SWITCHROOM1-CRT e10/3

Identifies the copper patch cord connecting Port e1 of the CISCO-5508-SWI-2-WSW wireless controller to port e10/3 of the Switchroom core router.

Example:

[Picture]

DEWEY-200-1-SW Gi0/10
DEWEY 1AY-17
BILLINGSLEE-1-VSW Gi0/20

Identifies the connection between port Gi0/10 on Dewey-200-1-sw (an 8 port switch in Dewey room 200) to BillingsLee-1-vsw port Gi0/20 via Jack 1AY 17 in Dewey.

Core and Distribution Codes

Data Centers and Core Router Locations may be referred to by the following codes instead of the building ID and room number:

Core Router Locations (3-Character Codes)

Name	Code
Berry	BMR
Etna	EDC
MacLean	WES
Remsen/Vail	REM
Ropeferry	ROP
Switchroom	SWI

Distribution Switch/Router Locations shall be referred to by the full building code.

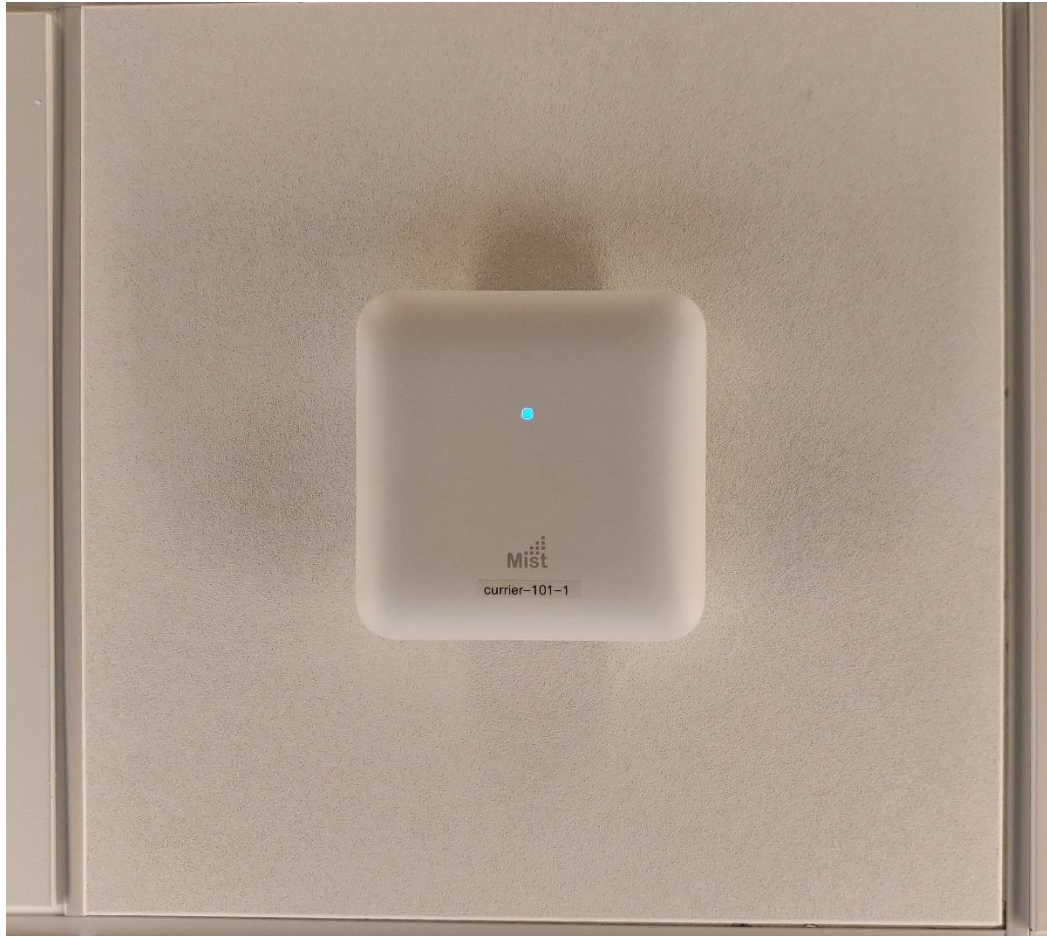
ALLEN
BERRY
BROWN
CENTERRA
COLLIS
CURRIER
DARTROW
ETNA
EWHEELLOCK
FAIRCHILD
FAYERWEATHERS
GYM
HOPKINS
IRVING
LSC
MASSROW
MOORE
NPARK
REMSEN
RIVERCLUSTER
RUSSELLSAGE
SILSBY
SKIWAY
SMAIN53
SUDIKOFF
SWITCHROOM
THAYERSCHOOL
THOMPSON
TUCKSCHOOL

(Note, remote locations served by a Meraki VPN Appliance are not included in this list.)

WiFi AP Naming Convention

Wireless Access Points shall be named as follows:

BUILDING-ROOM-#



Example:

CURRIER-101-1

Signifies the first AP in room 101 of Currier.

WiFi AP names are no longer to contain the “-AP” suffix, and in-room APs must always have the “-#” suffix, even if there is only one AP in the room.

Labels are not required for Mist brand APs as these devices can communicate their name to a mobile installer/support app. Cisco brand APs should still be labeled with the device name.

When provisioning Mist brand APs, the technician must, using the mobile installer app, name the AP, position the AP on the floorplan in the app, and orient the direction the AP is facing. APs that are not mounted in the horizontal plane (not ceiling mount or on an L-Bracket) must be communicated to network engineering so that the location services of the AP can be disabled. Location services do not work properly if a Mist AP is mounted in the vertical plane. Names in software should be all lowercase.

Switch Naming and Labelling

Switches shall be named as follows:

BUILDING-ROOM-#-TYPE

Where type is one of the following:

ASW	Aggregation Switch
ATA	Analog Telephone Adaptor
DRT	Distribution Router
DSW	Distribution Switch
FW	Firewall
MC	Media Converter, managed
MX	Meraki MX Security Appliance
OOB	Out-of-Band Management Appliance
PWR	Power Distribution Unit
RT	Router
SW	Switch
UPS	Uninterruptible Power Supply
VG	Voice Gateway

Fire Alarm Switches shall be named:

BUILDING-FA-SW

As it is understood that the FA Switch is always located in the service entrance telecom room. The SMNP Location shall contain the room number in which the switch is installed.

Labels shall contain the switch name and in-band management IP Address. Labels shall be adhered to the switch in 3 locations: the top of the switch near the front right corner, and on each side near the rear.

[Pictures]

Stacked switches, or switches in a Virtual Chassis, shall also be labeled to indicate their “position” in the stack. Switch 0, the Active Master or Route Engine (RE), is positioned at the top of the stack. Switch 1, the Standby Master or Route Engine (RE), is positioned directly below, leaving no blank rack space between. Switches 2, 3, 4, etc. are positioned below sequentially, again leaving no blank rack space between. These labels shall be adhered to the switch on both sides near the rear.

[Pictures]

END OF SECTION