The ANSI/TIA/EIA-606-A Addendum 1

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TIA/EIA-606-A Addendum 1

•606-A (Administration) was reaffirmed in June 2007

•Extends it for up to five years, as is.

•New Addendum 1 on Administration for Equipment Rooms, Computer Rooms and Data Centers approved in October 2008.

-Opening 606-A document for review in anticipation of beginning a revision project that will ultimately produce TIA/EIA-606-B

-*While 606-A was reaffirmed, The addendum is meant to reconcile 606-A with the TIA's 942 data center standard; 606-A did not really consider data centers and 942 did not consider administration. The two concepts come together in Addendum 1 to 606-A (Eventually will become 606-B)



CHANGES FROM LAST REVISION

Adopts identification scheme specified in TIA-606-A Addendum 1

•Creates new identification format for horizontal links, backbone cables and campus backbone cables as well as telecommunications outlets, equipment outlets, splices, consolidation points, and outdoor telecommunications spaces.

•Administers backbone cables by pair groups or corresponding to ports.

•Administration of grounding and bonding systems.

•Allows existing TIA-606-A identifier formats to continue to be used where they are already in use.



IDENTIFIERS

•Cable Identifiers

•Space Identifiers

•Termination Hardware Identifiers

•Pathway Identifiers

•Grounding

•Marking the TS-Room

Rack labeling

•110 Block Labels

•Backbone Cables

Identifiers are simply labels with printed information. All of the hardware listed to the left requires labeling



LABELING 5.1.2

•"Text on labels should be a font without serifs, upper case, and large enough to be easily read while standing near the cabinet or rack. Text on labels shall be machine printed, and the label color shall contrast with the surface upon which they are affixed (e.g., white on a dark surface, black on a white surface)."



10.2 MECHANICAL GENERATION

•"All labels shall be printed or generated by a mechanical device."



10.1 VISIBILITY AND DURABILITY

• "The size, color, and contrast of all labels should be selected to ensure that the identifiers are easily read. Labels should be visible during the installation of and normal maintenance of the infrastructure. Labels should be resistant to the environmental conditions at the point of installation (such as moisture, heat or ultraviolet light), and should have a design life equal to or greater than that of the labeled component."



CABLE LABELS 5.1.5

•"Each end to be labeled within 300mm (12in) of the end of the cable jacket. This shall include each cable in the TS, at the work area and at a CP if present. "

•Labels shall be durably affixed to both ends of each cable conspicuously displayed just prior to each cable being routed into the termination device. Label colors shall reflect cable route diversity where ever applicable."







WORK AREA LABELS 5.1.11

•"Each individual telecommunications outlet or equipment outlet shall be labeled with the horizontal link identifier. Labeling to appear on the faceplate, connector, or MUTOA, in a way that clearly identifies the individual connector associated with the particular identifier."



SELECT YOUR CLASS

- •Class 1 FEWER THAN 100 users, *single TS*
- •Class 2 HUNDREDS OF USERS multiple TS'S in a single building
- •Class 3 1000+ USERS
- •Class 4 1000's AND MULTIPLE LOCATIONS



4 CLASSES OF COMPLEXITY

•CLASS 1

 "An organization whose needs are served by a single Equipment Room. The ER is the only space TS administered. There are no TR's and no backbone cable labeling or outside plant cabling systems to administer.



CLASS 1: Simple

Simple: Single space, usually one floor, it may include collapsed backbone

The ER is the only TS administered.









Telecommunications Space Example: Class 1



REQUIRED IDENTIFIERS

•TS Identifier

- •Cabinet, rack, enclosure, wall segment identifier
- •Patch panel or block identifier
- •Identifiers for cables between cabinets, racks, enclosures or walls in the same space.
- •Horizontal Link Identifier
- •TGB Identifier
- •Telecommunications Main Grounding BUSBAR-TMGB



TS IDENTIFIER

Image: Second second

•S = Alpha character(s) uniquely identifying the TS or computer room on floor f.





SAMPLE CABINET IDENTIFIER









RACK, CABINET, FRAME & WALL SEGMENTS

Add identifiers for racks and cabinets that can be applied to any space.
 [[[c-]b-](f)s.]XY

XY may use:

Grid Coordinates
Row/Rack in large spaces
Rack # for small spaces
Simple Rack # (Non-Grid)

(e.g. AG54) or
(e.g. R2R05) or
(e.g. R4 for Rack 4)
(e.g. 2C.1, 2C.2 rack 1 and 2 in space 2C)



CABINET & RACK LABELING





PATCH PANEL IDENTIFIER (*Previous ANSI/TIA-606-A standard*)

•TS/horizontal link identifier *fs-a* or

1C-A

•S = A single alphabetic character that would identify up to 26 Telecommunication Spaces (TS) f = the floor number.



eg., 1C-A would be panel A, in space C on floor 1



OPTIONAL (BUILDING ROOM OR RACK IDENTIFIER FOR 606-A)





PATCH PANEL IDENTIFIERS – Addendum 1

• x1y1-a1 or

AD02-B







PATCH PANEL IDENTIFIER



PATCH PANEL IDENTIFIER - Addendum 1 (OPTION #1)

•[[[c-]b-](f)s.][x]y-r or

AD02-40

Horizontal cable managers are not included when sequencing patch panels.



AD02-40 would be the topmost patch panel in rack units from the bottom at location AD02. r = Two numerical digits for rack units.



PATCH PANEL IDENTIFIER





PATCH PANEL IDENTIFIER – Addendum 1 (Option #2)

•[[[c-]b-](f)s.][x]y-r =

or

AD02-F27

•**r** = ann - One or two characters designating the patch panel location, within cabinet/rack fs.x1y1, beginning at the bottom of the cabinet or rack. One letter indicating the side may be A, B, C, D or N, S, E, W, or F and R for the front and rear.

•Horizontal cable managers are not included when sequencing patch panels.

AD 02 - F27 AD 02 - F27 "X" coordinate "Y" coordinate "Y" coordinate





PATCH PANEL IDENTIFIER

•Where cables are diversely routed between patch panels, label colors SHOULD be different to reflect cable route diversity.

•Colors may be used to indicate different applications, modular jacks, twisted pair patch cables, (e.g. production, test, development, Internet)

•For fiber patch panels, use manufacturer provided labels and mounting surfaces wherever possible.



PATCH PANEL PORT IDENTIFIER (Current ANSI/TIA-606-A standard)

or

•TS/horizontal link identifier fs-an

1A-C001

•S = A single alphabetic character that would identify up to 26 Telecommunication Spaces (TS) f = the floor number.







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OPTIONAL (BUILDING ROOM OR RACK IDENTIFIER FOR 606-A)



1C-A001RACK1









or

• [[[c-]b-](f)s.][x]y-r1[r2]:P





AJ05-35:01

PATCH PANEL IDENTIFIER – Addendum 1 (Without Sub panels)

Near end patch panel location and panel identifier to be followed (where space permits) by the far end panel location and panel identifier
+ port numbers

AJ05-35:01-06 / AGO3-35:01-06

(rack units)

or

AJ05-A:01-06 / AG03-A:01-06

(alpha)



TWISTED PAIR PATCH PANEL IDENTIFIER – Addendum 1 (Without Subpanels)




TWISTED PAIR PATCH PANEL IDENTIFIER – Addendum 1 (Without Subpanels) Section 9

AD02-35 P 01-24 to AG03-35 P 01-24







PANEL FZ54-45

PORTS 01-24 to HDA01 AJ17-45 Ports 01-24

The Far end telecommunication space name MDA (Main Distribution Area) or HDA (Horizontal Distribution Area) can be added for additional information.



PRE-TERMINATED CABLE LABELING





MULTI FIBER TRUNK WITH MPO & LC CONNECTORS





PRE-TERMINATED CABLE LABELING P1n/P2n

•A 12-strand multi-fiber trunk cable equipped with MPO (multi fiber) connectors on one end and LC connectors on the other end.



PRE-TERMINATED CABLE LABELING





Duplex connectors







HORIZONTAL LINKS





HORIZONTAL LINK (Current ANSI/TIA-606-A)





CLASS 1 SYSTEMS

•<u>fs</u> portion of the identifier may be omitted from the labels. Full number is recommended.

 The port numbers marked on a patch panel by it's manufacturer may be used as the "<u>n</u>" portion.

•Must mark connector, faceplate or MUTOA.

•Mark hybrid cables with multiple four-pair sub units with the lowest alpha-numeric link identifier of the four pair sub-units or pairs of optical fiber in the cable. (if 1A-B19, 1A-B20 thru 1A-B24, mark as 1A-B19)



HORIZONTAL LINKS (ANSI/TIA-606-B)





HORIZONTAL LINK



Class 1

AJ05-35:01.CBL

CBL Recommended for links not terminated on patch panels in the same space.



HORIZONTAL LINK (additional information)



CBL Recommended for links not terminated on patch panels in the same space.

HORIZONTAL LINK IDENTIFIER 5.1.11

•All elements of a horizontal link shall be labeled at the time they are installed with the horizontal link identifiers (the .CBL portion of the horizontal link identifier may be omitted)



WALL OUTLET/HORIZONTAL LINK



Example: Showing simple floor 1, Space A, Rack .1 with panel 35 Rack units from bottom, port 08, 09, etc.



HORIZONTAL LINK (Proposed ANSI/TIA-606-B)



AG09-35:01 / AJ06-35:01

P1 format recommended for links that terminate at both ends on panels in the same space.



CABLE LABELING 606-B

P1N / P2N

NEAR END = AD02-35:01 / AG03-35:01

FAR END =

AG03-35:01 / AD02-35:01



EQUIPMENT ROOM OUTLET AND TELECOMMUNICATIONS OUTLET IDENTIFIERS (Horizontal Link Suffix)

Fs-an.EO (from 606-A)
Fs1.x1y1-r1:p1.EO
Fs-X1Y1-r1:p1/x2y2-r2:p2.EO

or TO or CP or SPz or TO or CP or SPz or TO or CP or SPz

- **EO** = Equipment Room Outlet
- **TO** = Telecommunications Outlet
- **CP** = Consolidation Point
- **SPz** = Splice where "z" is the appropriate distance along the cable of the splice from the patch panel in **fs** in meters.

To be used if EO or TO or CP is administered as a separate entity from the horizontal link



TMGB IDENTIFIER



1A-TMGB







IDENTIFIER FOR BONDING CONDUCTOR ATTACHED TO TMGB



1TER-TMGB=ACpanel1



MULTIPLE ELEMENT BONDING & GROUNDING IDENTIFIER





OTHER BONDING EXAMPLES

Common Bonding Networks
Bonding conductor for Telecommunications
Grounding Equalizer
Grounding Backbone
Rack grounding busbar



GROUNDING EQUALIZER





REQUIRED RECORDS – CLASS 1

Horizontal link records
Can be done with a paper based system or nonproprietary software.



4.1 GENERAL SPREADSHEETS

Each identifier and records makes up a row.
Each column contains a particular item of information for the record.



Horizonta I Link Identifier	Cable type	Building Location of Outlet	Outlet Connector Type	Color Code of Outlet Connector	Other Outlet Connectors at this Location	Wiring Scheme	Horiz. Cable Length	Cross Conn. Hdwr. Type	Service Record	Μυτοα	CP	Trans. Point
1A-W01	Cat 5e plenum	R 111	8 pos mod	beige	1A-A01 1A-B01	568A	129ft	block	tested 4/22/01	no	no	no
1A-A01	Cat 5e plenum	R 111	8 pos mod	orange	1A-W01 1A-B01	568A	127ft	patch panel	tested 4/22/01	no	no	no
1A-B01	62.5/125, two strand, plenum	R 111	SC duplex	blue	1A-W01 1A-A01	na	128ft	SC duplex	tested 5/23/01	no	no	no
1A-W02	Cat 5e plenum	R 112	8 pos mod	beige	1A-A02 1A-B02	568A	112ft	block	tested 4/22/01	no	no	no
1A-A02	Cat 5e plenum	R 112	8 pos mod	orange	1A-W02 1A-B02	568A	112ft	patch panel	tested 4/22/01	no	no	no
1A-B02	62.5/125, two strand, plenum	R 112	SC duplex	blue	1A-W02 1A-A02	na	113ft	SC duplex	tested 5/23/01	no	no	no

Figure 10: Example of spread-sheet implementation of class 1 administration system: horizontal link records sorted by building room number



SCOPE OF ANSI-EIA-TIA-606



TR HORIZONTAL LINK RECORDS REQUIRED FOR THE NEEDS OF A CLASS 1 SYSTEM

- •Horizontal Link Records shall contain the following information.
- Location of work area outlet connector (room, office, or grid local)
- Horizontal Link Identifier (primary indexing identifier, e.g., 1A-A47.)
- Outlet connector type (8 position, T568B cat 5e, 110) or (SC duplex)
- Cross connect hardware (patch panel, T568B Cat 5e, 110 or 66 block)
- Cable type (4 pr, UPT, Cat 5e, plenum, or 2 strand 62.5/125 multimode, FDDI grade, riser)
- Cable Length (e.g.: 51m/154ft.)
- Service Record of length (e.g. passed category 5e at install 1/12/01.





CLASS 2

• "An organization with one or more Telecommunication spaces, but in a single building."

• An ER with one or more TS's.



CLASS 2: Moderate

Moderate Single building, multiple room, usually multiple floors

TS	WA
TS	WA







REQUIRED IDENTIFIERS

•Space Identifier	fs
•TS/Horizontal link identifier	an
•Tele-main ground busbar	. fs-TMGB
•Tele-ground busbar	fsTGB
•Fire-stopping location	f-FSLn(h)
•Building backbone cable identifier	. fs1/fs2-n
•Building backbone pair or optical fiber iden	tifier fs1/fs2-r



.d

"MAY" also include....

Horizontal or intrabuilding backbone pathway elements.
Horizontal or intrabuilding backbone pathway between two TSs or areas.


BUILDING BACKBONE CABLE IDENTIFIER fs1/fs2-n

(Current ANSI/TIA-606-A)

• 1A/2B-01

"n" is the 2 or 4 digit number to identify a single cable.
(Only allowed in existing building where this format has already been used and established)









STRAND IDENTIFIER

The *fs1/fs2-n* portion of the identifier is marked on each patch panel, IDC termination block, or group of blocks, and the *d* portion of the identifier by each port or section of an IDC terminating the pair or optical fiber.
IDC = Insulation Displacement Contact











BACKBONE CABLE IDENTIFIER Proposed ANSI/TIA606-B

•In the new standard, it is treated almost the same as a standard horizontal link identifier as described in a Class 1 installation.

 Administration of backbone cables is by pair groups (corresponding to ports) or can be copper pairs or single fibers



BACKBONE CABLE IDENTIFIER

fs1.x1y1-a1:PN1 / fs2.x2y2-a2:PN2

1A-AJ06-45:01 / 2A.1-45:01

1A-AJ06-45:01-24 / 2A.1-45:01-24

Can be a single port or range of ports 6.1.3



BACKBONE CABLE SPLICE IDENTIFIER (optional)

fs1.x1y1-r1:p1 / fs2.x2y2-r2:p2.SPz

1A-AJ06-35:01 / 2A-AG09-35:01.SP5

•SP = Letter "SP" to signify a splice

•Z = Distance along cable of the spice (in meters) from the patch panel.



IDENTIFIERS FOR GROUNDING/BONDING/FSL LOCATIONS

- f-FSLn(h) = f is floor, FSL (fire stop location),
- n = numeric code for one location, h = hour rating

Each fire stopping location shall be labeled at each location where fire stopping is installed, on each side of the penetration fire barrier, within 12 in of the fire stopping material.



FIRE-STOPPING IDENTIFIER



2-FSL01(6)

Bicsi

FIRESTOPS





REQUIRED RECORDS CLASS 2

- •One TS record for each TS
- •Horizontal link records as specified class I
- •One Backbone cable record for each backbone cable
- •One TMGB record for each TMGB
- •One TGB record for each TGB
- •One Fire-stopping record for each location

Photo document installation? Document number of cables in the firestop? Can this be made optional or be mandatory?



TS RECORDS REQUIRED FOR A CLASS 2 SYSTEM

TS Identifier (primary indexing identifier, e.g. 2A

- Type of TS (e.g. TR, CTR, ER, CER, or EF)
- Building Room Number
- Key or Access Card Identification
- Contact Person
- Hours of Access



BACKBONE CABLE RECORDS REQUIRED FOR A CLASS 2 SYSTEM.

Backbone Cable Identifier (primary indexing identifier, e.g. 2A/3A-1

- Type of cable (e.g. 600 pair, 24 AWG shielded riser cable)
- Type of connecting hardware, first TS (e.g., 36 568 duplex adapter panel)
- Type of connecting hardware, second TS (e.g., 36 568SC duplex adapter panel)
- Cross connect table relating each backbone cable pair or strand to other backbone cable pairs or strands or to a Horizontal link.



TMGB RECORDS REQUIRED FOR A CLASS 2 SYSTEM

Telecommunications main grounding busbar identifier (primary indexing identifier, e.g. 1A-TMGB)
Location of the TMGB (building room number)
Location of test results for any tests performed on the TMGB, such as resistance to ground.



TGB RECORDS REQUIRED FOR A CLASS 2 SYSTEM

Telecommunications main grounding busbar identifier (primary indexing identifier, e.g. 3A-TGB)
Location of the TGB (building room number)
Location of test results for any tests performed on the TMGB, such as resistance to ground.



FIRESTOPPING RECORDS REQUIRED FOR A CLASS 2 SYSTEM

Fire stopping location identifier (primary indexing identifier, e.g. 3-FSL02(3)
Location of fire stopping installation (e.g.:room number and location within a room.
Type and manufacturer of fire stopping installed.
Date of fire stopping installation.
Name of installer of fire stopping material.
Service record of fire stopping location (e.g. 4/22/99 fire stopping removed and replaced with same type ABC cabling to add cabling runs.







CLASS 3

•"A Telecommunications infrastructure serving an organization or enterprise in a campus environment. This could encompass several hundred to several thousand users. There are multiple buildings and outside plant cabling systems to identify."



CLASS 3 & 4: Complex

Complex

Campus of multiple buildings, often multiple rooms and multiple floors in each building

TS	WA	TS	WA	TS	WA
TS	WA	TS	WA	TS	WA
TS	WA	TS	WA	TS	WA
TS	WA	TS	WA	TS	WA
TS	WA	TS	WA	TS	WA
TS	WA	TS	WA	TS	WA



CLASS 3 EXAMPLE





CLASS 3 REQUIRED IDENTIFIERS

(those of Class 1 and 2 plus..)

•Infrastructure Identifiers

•Building Identifier

•Campus Backbone Cable Identifier.

•Campus Backbone Pair or optical fiber identifier.



INFRASTRUCTURE IDENTIFIERS

•c = One or more alphanumeric characters identifying a campus or site.

•Not required if building is not on a campus or if the building identifier alone is adequate to uniquely identify the building.



BUILDING ELEMENTS [[c]-b-](f)s

•**c-b** = One or more alphanumeric characters identifying a single building.

•There are no labeling requirements for the campus or building identifiers



INTER-BUILDING BACKBONE CABLE

c1-b1-fs1.x1y1-r1:P1 / c2-b2-fs2.x2y2-r2:P2

A 24 pair (48 fiber strand) terminating at rack unit 41 in rack 4 of floor 1, space A of engineering building.





INTER-BUILDING BACKBONE CABLE PAIR GROUP IDENTIFIERS

c1-b1-fs1.x1y1-r1:P1 / c2-b2-fs2.x2y2-r2:P2

•New format based on pair groups corresponding to ports (rather than individual fibers or pairs)

A-ENG-1A.4-35:01 / B-ADM-1A.5-35:01



INTER-BUILDING BACKBONE CABLE PAIR GROUP SPLICE IDENTIFIERS (optional)

c1-b1-fs1.x1y1-r1:P1 / c2-b2-fs2.x2y2-r2:P2.**SPz[(g)]**

•New format based on pair groups corresponding to ports (rather than individual fibers or pairs)

A-ENG-1A.4-35:01 / B-ADM-1A.5-35:01.SPZ5

(g) Optional GPS coordinates of outdoor telecommunications space



REQUIRED RECORDS

All records from a Class 2 System
One Building Record for each building
One campus backbone record for each campus backbone cable.



BUILDING RECORDS

•Building name

•Building Location (e.g. Street Address)

•A list of all TSs.

Contact information for access

•Access hours.



CAMPUS BACKBONE CABLE RECORDS FOR CLASS 3 SYSTEM

- Campus backbone cable identifier (the primary indexing identifier, e.g.: ENG2A/ADM3A4)
- Type of connecting hardware first and second TS (patch panel, T568B Cat 5e, 110 or 66 block)
- Cable type (4 pr, UPT, Cat 5e, plenum, or 2 strand 62.5/125 multimode, FDDI grade, riser)
- Table relating backbone terminations to other backbone terminations or horizontal links, to which they are cross connected.







CLASS 4

•"A Telecommunications infrastructure that extends across multiple geographic locations. Class 4 specifies multiple campus telecommunications infrastructure."



REQUIRED IDENTIFIERS

 All identifiers from a Class 3 system including: Site or Campus Identifier



SITE OR CAMPUS IDENTIFIER

C = One or more alphanumeric characters identifying a site or campus. Additional identifiers may be added if desired in parentheses after the end of the required format.



SITE OR CAMPUS RECORD

- •Site or campus name
- •Site or campus location
- •Contact information for local administrator of
- infrastructure
- •List of all buildings at the site or campus
- •Location of main cross connect, if applicable
- •Access hours, if applicable



OPTIONAL IDENTIFIERS OUTSIDE SPACE

[c-]U-[(g)]

SFO-MH(37.797413 - 122.414925)

Maintenance hole at GPS Coordinates 37.797413, - 122.414925 in San Francisco.

•UUU = user defined identifier
•N= sequence ID one or two characters
•(g) = optional field for GPS coordinates


INTER-CAMPUS OR INTER-SITE PATHWAY SYSTEM

 $c_1-b_1[[-f]s_1] / c_2-b_2[[-f_2]s_2]-UUU-n[.d]$

A-ENG/A-ADM-CN-3.2

•The second interduct in the third conduit between Engineering Bld. in Campus A and Administration Bld. in campus A.

Cn = Conduit, PN = Penetration, SL = Sleeve, TN = Tunnel, TY = Sleeve



CAMPUS OR BUILDING ENTRANCE PATHWAYS AND IDENTIFIERS

EN/c-b-fs-UUU-n[.d]

EN/1CR-TY.02

•Cable Tray TY.02 in computer room 1CR



PATCH CORDS (OPTIONAL)

•OPTIONAL patch cord, equipment cord similar to horizontal link, but the near end and far end are separated by a backslash '\' instead of a forward slash.

•Patch Cords: **1A-AJ05-A:1 \ AG06-A:1**

•Equipment Cords: **1A-AJ05-A:1 \ AG06-MDM-1:1** (MDM = Modem, Slot 1, port 1 as example)



COLORS ("should" <u>if</u> color coding is used)

- Demarcation point
- Network connection
- Common equipment
- Key system
- First level backbone

Pantone 150C Orange Pantone 353C Green Pantone 264C Purple Pantone 184C Red Pantone White

• (MC-IC or IC-HC)Intra-building backbone

Pantone 422C Gray

(IC-HC) Inter-building backbone

Horizontal

Other

Pantone 465C Brown Pantone 291C Blue Pantone 101C Yellow

Bicsi



