

ANSI/TIA/EIA 606A

ADMINISTRATION
STANDARD FOR
TELECOMMUNICATIONS
INFRASTRUCTURE

QUICK REFERENCE GUIDE

This guide is intended to be used as a reference to the application of the ANSI/TIA/EIA 606-A standard. It in no way reflects all the necessary information contained within the ANSI/TIA/EIA 606-A published documents.

Tempo assumes no liability for the trueness and/or correctness of the information contained within this document should any claims arise out of the use of this reference material.

Table of Contents

Overview	4
Classes of Administration	5
Identifiers	6
Required Identifiers & Records	7
Spatial Information	
Telecommunications Space (TS)	8
Building	9
Campus	10
Cabling Information	
Horizontal Link	11
Intrabuilding Backbone Cable	13
Intrabuilding Backbone Pair or Optical Fiber	14
Interbuilding Backbone Cable	15
Interbuilding Backbone Pair or Optical Fiber	16
Grounding & Firestopping Information	
Telecommunications Main Grounding Busbar (TGMB)	17
Telecommunications Grounding Busbar (TGB)	17
Firestopping	19
Pathway Information (optional)	
Intrabuilding Pathway Element	20
Interbuilding Pathway Element	22
Color Coding	23
Labeling	23
Linkages & Reports	24
Optional Descriptors	25



For more information, please go to www.imap.textron.com

Overview

The ANSI/TIA/EIA 606-A Standard specifies administration for a generic telecommunications cabling system that will support a multi-product, multi-vendor environment. It provides a uniform administration approach that is independent of applications, which may change several times throughout the life of the telecommunications infrastructure. It establishes guidelines for owners, end users, manufacturers, consultants, contractors, designers, installers, and facilities administrators involved in the administration of the telecommunications infrastructure.

Use of this Standard is intended to increase the value of the system owner's investment in the infrastructure by reducing the labor expense of maintaining the system, extending the useful economic life of the system, and providing effective service to users.

Classes of Administration

There are four classes of administration that all cabling systems fall within.

Class 1 is for systems within a single building having only one Telecommunications Room (TR) that all workstation cabling runs to. The TR, Horizontal Links (HL's) and Telecommunications Main Grounding Busbar (TMGB) are required to be labeled and administered. If the system owner wishes to document pathways or firestopping locations, Class 2 administration should be used.

Class 2 is for systems within a single building that are served by multiple TR's. Class 2 includes administration for backbone cabling, multi-element grounding & bonding, firestopping as well as all the items within Class 1.

Class 3 is for systems spanning multiple buildings, known as a campus environment. Class 3 includes administration for buildings and inter-building cabling as well as all elements of Class 2. Administration of Pathways, Spaces and Outside Plant elements is recommended.

Class 4 is for systems spanning multiple campuses, known as a multi-site system. Class 4 included administration for each site as well as all elements of Class 3. Administration of Pathways, Spaces and Wide area network connections is recommended.

Identifiers

A unique identifier is associated with each element of the infrastructure to be identified and serves as the key to finding the recorded information within the administration system selected.

IDENTIFIER	DESCRIPTION OF IDENTIFIER	CLASS OF ADMINISTRATION			
		1	2	3	4
<i>fs</i>	telecommunications space (TS)	R	R	R	R
<i>fs-an</i>	horizontal link	R	R	R	R
<i>fs-TMGB</i>	telecommunications main grounding busbar	R ¹	R ¹	R ¹	R ¹
<i>fs-TGB</i>	telecommunications grounding busbar	R ¹	R ¹	R ¹	R ¹
<i>fs1/fs2-n</i>	intrabuilding backbone cable		R	R	R
<i>fs1/fs2-n.d</i>	intrabuilding backbone pair or optical fiber		R	R	R
<i>f-FSLn(h)</i>	firestop location		R	R	R
<i>[b1-fs1]/[b2-fs2]-n</i>	interbuilding backbone cable			R	R
<i>[b1-fs1]/[b2-fs2]-n.d</i>	interbuilding backbone pair or optical fiber			R	R
<i>b</i>	building			R	R
<i>c</i>	campus or site				R
<i>fs-UUU.n.d(q)</i>	intrabuilding backbone pathway element		0	0	0
<i>fs1/fs2-UUU.n.d(q)</i>	intrabuilding backbone pathway between two TSs or areas		0	0	0
<i>[b1-fs1]/[b2-fs2]-UUU.n.d(q)</i>	interbuilding pathway or element			0	0

R = Required 0 = Optional

Required Identifiers & Records

The following is a list of the required records for each of the four classes of administration. An administration system shall provide a method to find the record associated with any specific identifier. The administration system may be managed using a paper-based system, general-purpose spreadsheet software, or special-purpose cable management software.

Class 1 systems require the identifiers and records for the following:

- TS identifier
- Horizontal Links
- Telecommunications Main Grounding Busbar (TMGB)
- Telecommunications Grounding Busbar (TGB)

Class 2 systems require the identifiers and records for the following:

- All class 1 elements
- Intra-building Backbone Cable
- Intra-building Backbone pair or strand
- Firestopping

Class 3 systems require the identifiers and records for the following:

- All class 2 elements
- Inter-building Backbone Cable
- Inter-building Backbone pair or strand
- Building

Class 4 systems require the identifiers and records for the following:

- All class 3 elements
- Site or Campus

Spatial Information

Telecommunications Space

A telecommunications space is an area used for housing the installation and termination of telecommunications equipment and cable, e.g., common equipment rooms, equipment rooms, common telecommunications rooms, telecommunications rooms, work areas, and maintenance holes/handholes.

The TS identifier, unique within the building, shall be assigned to the Telecommunications Space, and it shall have the format f_s , where:

f = numeric character(s) identifying the floor of the building

occupied by the TS

s = alpha character(s) uniquely identifying the TS on floor f , or the building area in which the space is located

The TS records shall contain the following information:

- 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

Building

A building is an entity that can house both Telecommunications space (s) and work areas. A unique building identifier shall be assigned to each building, and it shall have the format b , where:

b = one or more alpha-numeric characters identifying a single building

There are no labeling requirements for the building identifier.

The building records shall contain the following information:

- building name (the primary indexing identifier, e.g., ADM or ADM1)
- building location (e.g., street address)
- a list of all TS's and their locations in the building, within the infrastructure limits of the tenant
- contact information for access
- access hours

Spatial Information

Campus

A campus is a collection of buildings and grounds having legal contiguous interconnection. A unique campus or site identifier shall be assigned to each campus or site, and it shall have the format *c*, where:

c = one or more alpha-numeric characters identifying a campus or site

There are no labeling requirements for the campus or site identifier.

The campus or site records shall contain the following information:

- campus or site name
- campus or site location (e.g., street address)
- 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

Cabling Information

Horizontal Link

A horizontal link is defined as the cabling between and including the telecommunications outlet/connector and the horizontal cross-connect termination hardware. It was often referred to as the workstation cabling, horizontal cabling or user drop.

The Horizontal Link Identifier shall be formatted as *fs-an*, where:

fs = TS Identifier

a = one or two alpha characters uniquely identifying a single patch panel, a group of patch panels with sequentially numbered ports, an IDC termination block, or a group of IDC termination blocks, serving as part of the horizontal cross-connect

n = two to four numeric characters designating the port on a patch panel, or the section of an IDC termination block on which a four-pair horizontal cable is terminated in the TS

Identifiers shall be placed in the TR, on the patch panel or wiring block. Each end of the cable shall be labeled within 12 inches from the ends, and in the work area each individual connector shall be labeled as well.

The Horizontal Link (HL) record shall contain the following information:

- horizontal link identifier (primary indexing identifier, e.g.: A47)
- cable type (e.g.: 4 pr, UTP, category 5e, plenum)
- location of telecommunications outlet/connector (room, office, or grid location)
- outlet connector type (e.g.: 8 position modular, T568A, category 5e)
- cable length (e.g.: 51m/154ft)
- location of TS and or CP (if class 2 through class 4)
- cross-connect hardware type (e.g.: 48 port modular patch panel, T568A, category 5e)
- service record of link (e.g.: passed category 5e at installation 1/12/99, re-terminated and re-tested at cross-connect 4/22/99 due to broken wire)

Cabling Information

Horizontal Link (continued)

CMS must be able to document multiple media and mixed media horizontal cabling. This includes copper, fiber optic and coaxial cables. Additional items of information desired by the system owner or operator may be added at the end of the HL record, such as:

- location of test results
- location of outlet within room or office
- color of the connector or icon on the connector (e.g.: orange icon; or blue jack)
- other telecommunications outlet/connectors at same location (generally, the other outlet connectors in the same faceplate, e.g.: A02, A03, A04; or B01, C01, D01)
- faceplate configuration (e.g.: single gang, four port, telco ivory)
- position of outlet connector on faceplate or MUTOA (eg.: top left)
- pathway to outlet (e.g.: fishable wall or surface raceway)
- presence or absence of MUTOA (is there a MUTOA in this link, yes or no)
- length of work area cord if MUTOA is present
- presence of absence of CP (is there a CP in this link, yes or no)
- equipment circuit currently using link (e.g.: 100BaseT switch port #16)
- current user name (e.g.: Bill Smith)

Intrabuilding Backbone Cable

Cables that run within one TS or extend between two or more TS's within a building are called intrabuilding backbone cables.

A unique backbone cable identifier shall be assigned to each backbone cable between two TS's in one building and it shall have a format of $fs1/fs2-n$, where:

$fs1$ = TS identifier for the space containing the termination of one end of the backbone cable

$fs2$ = TS identifier for the space containing the termination of the other end of the backbone cable

n = one or two alpha-numeric characters identifying a single cable with one end terminated in the TS designated $fs1$ and the other end terminated in the TS designated $fs2$

In this format, the TS with the lesser alpha-numeric identifier shall be listed first. All intrabuilding backbone cable identifiers in a single infrastructure should have the same format where possible. The backbone cable identifier shall be marked on each end of the backbone cable within 300 mm (12 in) of the end of the cable jacket.

The backbone cable records shall contain the following information:

- 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 568SC 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 optical fiber to other backbone cable pairs or optical fibers or to a horizontal link.

Cabling Information

Intrabuilding Backbone Cable (continued)

Additional items of information desired by the system owner or operator may be added to each record, such as:

- cable length
- un-terminated pairs or optical fiber strands
- available pairs or optical fiber strands
- damaged pairs or optical fiber strands
- pathway record
- splice record
- grounding record

Intrabuilding Backbone Pair or Optical Fiber

A unique intrabuilding backbone pair or optical fiber identifier shall be used to identify each single copper pair or each single optical fiber in a backbone cable between two TS's in one building, and shall have a format $fs1/fs2-n.d$, where:

$fs1/fs2-n$ = an intrabuilding backbone cable identifier

d = two to four numeric characters identifying a single copper pair or a single optical fiber

All backbone pair or optical fiber identifiers in a single infrastructure should have the same format where possible. The backbone pair or optical fiber shall be maintained through the Intrabuilding Backbone Cable record.

Interbuilding Backbone Cable

Cables that run from a TS in one building and extend to two or more TS's in another building are called interbuilding backbone cables.

A unique interbuilding backbone cable identifier shall be assigned to each backbone cable connecting TS's in different buildings, and it shall have the format $[b1-fs1]/[b2-fs2]-n$, where:

$b1-fs1$ = building identifier and TS identifier for the TS in which one end of the backbone cable is terminated

$b2-fs2$ = building identifier and TS identifier for the TS in which the other end of the backbone cable is terminated

n = one or two alpha-numeric characters identifying a single cable with one end terminated in the TS designated $b1fs1$ and the other end terminated in the TS designated $b2fs2$

In this format, the building with the lesser alpha-numeric identifier shall be listed first. All interbuilding backbone cable identifiers in a single infrastructure should have the same format where possible.

The interbuilding backbone cable identifier shall be marked on each end of the backbone cable within 300 mm (12 in) of the end of the cable jacket.

The interbuilding backbone cable records shall contain the following information:

- interbuilding backbone cable identifier (the primary indexing identifier, e.g., [ADM-3A]/[ENG-2A]-4)
- type of cable (e.g., 36 optical fiber, 50/125mm, gel filled, copper armor)
- type of connecting hardware, first TS (e.g., 36 568SC duplex adapter panel)
- type of connecting hardware, second TS (e.g., 36 568SC duplex adapter panel)
- table relating backbone terminations to other backbone terminations or horizontal links, to which they are cross-connected.

Cabling Information

Interbuilding Backbone Cable (continued)

Additional items of information desired by the system owner or operator may be added to each record, such as:

- cable length
- un-terminated pairs or optical fiber strands
- available pairs or optical fiber strands
- damaged pairs or optical fiber strands
- pathway record
- splice record
- grounding record

Interbuilding Backbone Pair or Optical Fiber

A unique interbuilding backbone pair or optical fiber identifier shall be assigned to each pair or optical fiber in a backbone cable connecting TS's in different buildings, and it shall have the format $[b1-fs1]/[b2-fs2]-n.d$, where:

$[b1-fs1]/[b2-fs2]-n$ = interbuilding backbone cable identifier
 d = two to four numeric characters identifying a single copper pair or a single optical fiber

All interbuilding backbone pair or optical fiber identifiers in a single infrastructure should have the same format where possible. The backbone pair or optical fiber shall be maintained through the Interbuilding Backbone Cable record.

Grounding & Firestopping

Telecommunications Main Grounding Busbar

A Telecommunications main grounding busbar is the busbar that is tied directly to the grounding source and is used to ground all telecommunications equipment and cabling that require a grounding connection. The Telecommunications main grounding busbar in the TS shall be labeled TMGB.

The TMGB record shall contain the following information:

- telecommunications main grounding busbar identifier (primary indexing identifier, e.g.: TMGB)
- location of the TMGB (TS identifier)
- size of the TMGB
- location of attachment of TMGB to electrical system ground or building structural steel
- location of test results for any tests performed on the TGB, such as resistance to ground

Additional items of information desired by the system owner or operator may be added to each record, such as:

- conductor ID (connected bonding conductor)
- conductor Type (gauge, solid/stranded, insulated/bare)
- conductor Destination (space, device type and ID)

Grounding & Firestopping

Telecommunications Grounding Busbar

A Telecommunications busbar is a busbar that typically resides in a TS that does not have a grounding source and is connected to the TMGB by a grounding conductor. It is also used to ground all telecommunications equipment and cabling that requires a grounding connection.

The Telecommunications grounding busbar (TGB) identifier is used to identify TGB's in the grounding and bonding system and shall be formatted as *fs-TGB*, where:

fs = TS identifier for the space containing the TGB.
TGB = an identifier referring to a telecommunications grounding busbar.

The TGB record shall contain the following information:

- telecommunications grounding busbar identifier (primary indexing identifier, e.g.: 3A-TGB)
- location of the TGB (TS identifier)
- size of the TGB
- location of test results for any tests performed on the TGB, such as resistance to ground

Additional items of information desired by the system owner or operator may be added to each record, such as:

- conductor ID (connected bonding conductor)
- conductor Type (gauge, solid/stranded, insulated/bare)
- conductor Destination (space, device type and ID)

Firestopping

A firestopping location identifier shall identify each installation of firestopping material. The format for the firestopping location identifier shall be *f-FSLn(h)*, where:

f = numeric character(s) identifying the floor of the building occupied by the TS
FSL = an identifier referring to a firestopping location
n = two to four numeric characters identifying one firestopping location
h = one numeric character specifying the hour rating of the firestopping system

All firestopping location identifiers in a single infrastructure should have the same format where possible.

Each firestopping location shall be labeled at each location where firestopping is installed, on each side of the penetrated fire barrier, within 300 mm (12 in) of the firestopping material.

The firestopping records shall contain the following information:

- firestopping location identifier (primary indexing identifier, e.g., 3-FSL02(3))
- location of the firestopping installation (e.g.: room number and location within room)
- type and manufacturer of firestopping installed
- date of firestopping installation
- name of installer of firestopping material
- service record of firestopping location (e.g., 4/22/99 firestopping removed and replaced with same type by ABC Cabling to add cabling runs)

Pathway Information (optional)

Intrabuilding Pathway Element

An intrabuilding pathway element is a cabling support vessel that typically connects one space to another or runs the span of a common routing cable route, but resides in one space. The format for the intrabuilding pathway element shall be *fs-UUU.n.d(q)* or *fs1/fs2-UUU.n.d(q)*, where:

fs = Identifier for a space which is derived by combining the level and the building area in which the space is located. The space can be represented by the space ID (if present) or a user defined identifier (descriptor).

fs1 = Identifier for the space containing the termination of one end of the horizontal pathway, typically the most central or lowest alpha-numeric identifier

fs2 = Identifier for the space containing the termination of the other end of the horizontal pathway, typically the least central or highest alpha-numeric identifier

UUU = a user defined identifier referring to the type of element (descriptor)

n = two to four numeric characters identifying the pathway element (major ID)

d = detail information such as port, sub-duct, optical fiber and pair (minor ID)

q = qualifying information

The pathway records shall contain the following information:

- intrabuilding pathway identifier (primary indexing identifier, e.g., 3A/3B-CT01)
- pathway type (e.g.: Cable Tray)
- pathway fill (e.g.: 20%)
- pathway loading
- cable records
- space record1 (e.g.: 3A)
- space record2 (e.g.: 3B)
- grounding record

Additional items of information desired by the system owner or operator may be added to each record, such as:

- pathway length (e.g.: 40m (132ft))
- pathway max fill (e.g.: 40%)
- pathway max load
- pathway condition
- number of bends
- firestopping records

Pathway Information (optional)

Interbuilding Pathway Element

An interbuilding pathway element is a cabling support vessel that typically connects one buildings space to another buildings space. The format for the interbuilding pathway element shall be $[b1-fs1]/[b2-fs2]-UUU.n.d(q)$, where:

$b1fs1$ = building identifier and TS identifier for the TS in which one end of the backbone cable is terminated

$b2fs2$ = building identifier and TS identifier for the TS in which the other end of the backbone cable is terminated

UUU = a user defined identifier referring to the type of element (descriptor)

n = two to four numeric characters identifying the pathway element (major ID)

d = detail information such as port, sub-duct, optical fiber and pair (minor ID)

q = qualifying information

The pathway records shall contain the following information:

- interbuilding pathway identifier (primary indexing identifier, e.g., ADM-3A/ENG-3B-CT01)
- pathway type (e.g.: Cable Tray)
- pathway fill (e.g.: 20%)
- pathway loading
- cable records
- space record1 (e.g.: ADM-3A)
- space record2 (e.g.: ENG-3B)
- grounding record

Additional items of information desired by the system owner or operator may be added to each record, such as:

- pathway length (e.g.: 40m (132ft))
- pathway max fill (e.g.: 40%)
- pathway max load
- pathway condition
- number of bends
- firestopping records

Color Coding

Color-coding of termination fields can simplify infrastructure administration and maintenance by making the structure of the cabling more intuitive.

Cross-connections generally connect termination fields of different colors.

TERMINATION TYPE	COLOR	TYPICAL APPLICATION
Demarcation Point	orange	central office connection
Network Connection	green	user side of central office connection
Common Equipment	purple	connections to PBX, mainframe computer, LAN, multiplexer
Key System	red	connections to key telephone systems
First Level Backbone	white	terminations of intrabuilding backbone cable connecting MC to ICs
Second Level Backbone	gray	termination of intrabuilding backbone cable connecting ICs to HCs
Interbuilding Backbone	brown	termination of backbone cable between buildings
Horizontal	blue	terminations of horizontal cable in TSs
Other	yellow	alarms, security, or energy management

Labeling 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.

Mechanical generation

To maximize legibility, all labels shall be printed or generated by a mechanical device, and shall not be written by hand.

Linkages & Reports

Required Linkages

Linkages support the retrieval of information about the telecommunications infrastructure from administration records. Each required record type defines a primary indexing identifier to facilitate linkage between infrastructure identifiers and records. Optional or user-defined record types should also define a primary indexing identifier.

When administration is performed with special-purpose cable management software, linkages shall be provided between each appearance of an infrastructure identifier in a record and any record for which that identifier is the primary indexing identifier. Linkages to additional records in which the identifier appears are also desirable.

When administration is performed using spreadsheets or paper-based systems, records should be designed and organized to facilitate information retrieval based on primary indexing identifiers. This provides functionality similar to software linkages. Indexes relating record locations to primary identifiers may also prove beneficial.

Required Reports

Reports are the means by which information about a telecommunications infrastructure is communicated. A report may consist of an individual record, a group of records, or selected portions of one or more records.

Administration systems using special purpose cable management software shall make available to the telecommunications infrastructure operator reports listing all records containing a selected identifier and all information in those records, any desired subset of those records and the recorded information, or any desired union of such information. Paper-based or spreadsheet-based administration systems may require additional record-keeping beyond that described to provide adequate reporting capabilities. For example, a drawing or graphical representation of the infrastructure would allow the operator to easily locate all telecommunications outlets in a given work area, even if they are connected to links originating from multiple telecommunications spaces.

Optional Descriptors

In many cases a descriptor will need to be defined for an element of a pathway, a space or device. The following tables give examples of these descriptors that can be used in creating identifiers.

OUTDOOR SPACE	
MH	Maintenance Hole
HH	Handhole
BR	Bridge
TN	Tunnel
TP	Telephone Pole
DB	Direct Buried locale
SM	Submerged locale
EN	Entrance
VL	Vault
PE	Pedestal
RT	Roof Top

PATHWAY	
BR	Branch Splice
BS	Bridge Splice
CB	Cabinet
CN	Conduit
CT	Cable Tray
FR	Frame
GB	Ground Bar
NT	Node
PB	Pull Box
PN	Penetration
RR	Rack
RK	Ring Rung
SL	Sleeve
SS	Straight Splice
ST	Slot
TR	Tray

SPACE	
AP	Access Point
APS	Access Provider Space
CER	Common Equipment Room
CTR	Common Telecommunications Room
CO	Central Office
DM	Demarcation (NI)
ER	Equipment Room
NOC	Network Operations Center
RO	Repeater Office
SPS	Service Provider Space
SR	Switch Room
STAR	Logical Center of the data network
SZ	Serving Zone
TER	Telecommunications Entrance Room
TR	Telecommunications Room
TS	Tenant Space
WTRS	Wireless Transmission & Reception Space
WS	Workstation Location

DEVICE			
AMP	Amplifier	PAY	Payphone
ANL	Analog	PC1	PC
CMR	Camera	RDR	Reader
CS	Chassis	RS	Remote Shelf
CI	Carrier ID	SF	Shelf
DIG	Digital	SNS	Sensor
DLR	Dialer	SPK	Speaker
FAX	Fax	STK	Strike
GBR	Glass Break	STR	Strobe
HNS	Handset	TEL	Telephone
MDM	Modem	TTY	Tele Type
MIC	Microphone	TV1	Television
MNT	Monitor	WLP	Wall Phone