Structured Cabling Subsystems

White paper

Introduction

Point-to-point cabling has been used for over 25 years to connect proprietary control networks or interconnect devices. However, more and more applications are moving to higher density, higher speed and larger scale. These applications such as networks and data centers require expertise in structured cabling.

Structured cabling is a complete cabling and hardware system that provides a comprehensive telecommunication infrastructure to help an organisation run its networking tasks smoothly. In a more literal sense, it is the standardised equipment and architectural environment as presented by the TIA/EIA Commercial Building Telecommunications Cabling Standard. The standards are used as a guide by manufacturers to ensure interoperability. Structured cabling is used in a range of areas, including data centres, manufacturing facilities, offices, and others. The system serves a wide range of purposes, such as data transmission and telephone service.

A properly designed and well-maintain structured cabling infrastructure can provide the system predictable performance in addition to the flexibility to accommodate changes, provide redundancy, the capacity to maximise system availability, and the ability to improve the usability of the cabling system in the future.

This white paper introduces the basic knowledge of structured cabling and it's six subsystems.

Basics of Structured Cabling System

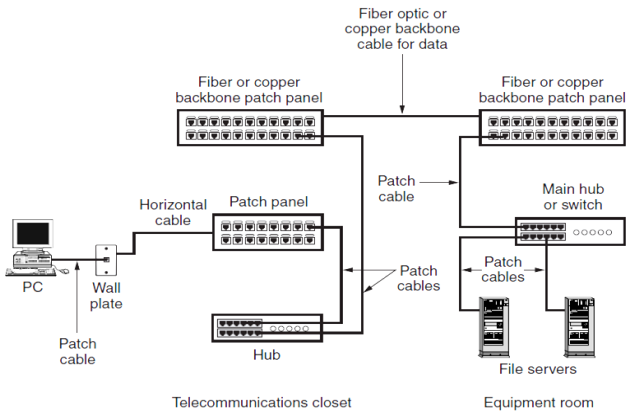
A Structured Cabling System is cabling and connectivity of products that integrates data, voice, video and various management system of a building. A kind of open network structure is considered as a structured cabling system. This particular type of structure can be used for a number of systems like access controlling, automation, telephony, and many others. Through this, people have so far attained a great flexibility in different economical operations. It is also called "Campus cabling infrastructure" because it consists of a number of some elements that are standardised. Having CCTV camera, structured cabling, audio visual, and biometric access control, a building can keep a safe and secure environment in it.

There are specialised sets of standards that are applied for the designing and installation of structured cabling. Through these standards, it becomes easy to specify wiring in different data centers, apartments, offices, and other buildings. These standards can also help you in getting yourself known that how to lay the cabling perfectly so that customer needs are met.

Structured cabling solution is a form of open community shape, which can be utilised by various systems such as facts, telephony, get entry to control, constructing automation and so forth. It provides outstanding flexibility and inexpensive operation.

Six Subsystems of Structured Cabling System

Structured network cabling is a building site or campus site telecommunications cabling infrastructure that consists of a number of standardised smaller elements (hence structured) called subsystems.



Structured Cabling that includes Data Backbone Cabling

Below are the six-subsytems of a structured cabling system:

1. Building Entrance

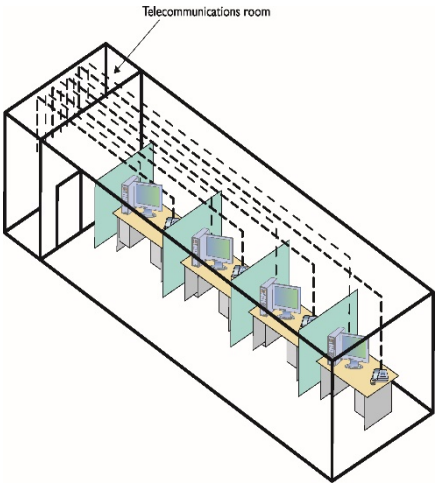
- As defined by the name, entrance facilities include the service entrance of telecommunications in the building
- It functions as the point where the telephone company network ends and connects with the on-premises wiring at the customer premises
- In this particular type, components like cables, connecting hardware, master clock, protection devices, and others are used. A time lapse camera is also installed in it

2. Equipment Room

- Equipment room contains all the equipment that are used in structured cabling system
- It usually encompasses the horizontal cross-connects, corr-connect, and intermediate cross-connects
- It functions as a place used to house equipment and wiring consolidation points, serving the users inside the building or campus

3. Telecommunication Room

- It is the heart of the basic star network and is an intermediate distribution frame (IDF)
- The central component is the equipment rack
- The backbone cables and the terminations of horizontal are housed by this telecommunication closet
- It consists of hub, patch panels, jacks and patch cables

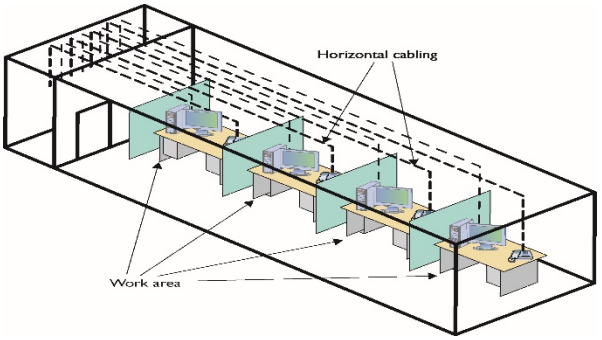


4. Backbone

- In this particular type of cabling, interconnection is made between equipment rooms and telecommunication closets that are typically on different floors
- The compositions included in this type of cabling include mechanical terminations, patch cables, interactive board, cross-connects, etc

5. Horizontal

- This part deals with the extension of the telecommunications closet from the work area telecommunication information
- In the horizontal cabling, the main components are cable terminations, cross-connections, telecommunication outlets, telecommunication rooms, and different others



6. Work Area

- The work area encompasses all components between the faceplate and Ethernet based device
- This includes the patch cable between the faceplate and Ethernet device.
- Each work area is served by a telecommunications closet or wiring closet on the same floor
- Work area refers to space where cable components are used between communication outlets and end-user telecommunications equipment
- Components that are generally used in this type include computer, telephones, modular cords, fibre patch cables, data terminals, and others

Conclusion

Structured cabling is a planned and complete cabling system which provides a comprehensive telecommunications infrastructure. This infrastructure serves a wide range of applications, including voice, data, video and control for today's and tomorrow's network designs.

Structured cabling is designed to handle a variety range of communication applications including telephone, video, high-speed data, etc. To build a high-performance and reliable structure cabling system, besides the knowledge, you may also require a reliable and cost-effective product solution which can help you save more cost and achieve high performance. Datatronix offers comprehensive products and solution of optical fibre and copper for structured cabling connectivity. Datatronix is widely recognised to be in the position of covering the complete fibre optic and copper deployment chain: manufacturing, products, certification, service, maintenance, training and project development and management.

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