OBJECTIVE OF ANSI/TIA/EIA/862
The standard specifies a generic cabling system for a building automation systems (BAS) used in commercial buildings. The purpose of this standard is to help in the planning and installation of a structured cabling system for BAS applications.

TELECOMMUNICATIONS CABLING SYSTEM
The basic elements of the BAS cabling system structure are:
- Horizontal cabling
- Backbone cabling
- Coverage area
- Telecommunications room (TR) or common telecommunications room (CTR)
- Equipment room (ER) or common equipment room (CER)
- Entrance facilities (EF)
- Administration

HORIZONTAL CABLING
The elements of the horizontal cabling are: Horizontal cross-connect (HC), horizontal cable, horizontal connection point (HCP) and an optional BAS outlet/connector.

The horizontal cabling topology shall be a star topology. The maximum horizontal distance for distributed BAS links shall be 90 m, independent of the media type. The BAS Channel length is application dependent. The horizontal cabling shall meet the performance requirements and the installation requirements of ANSI/TIA/EIA-568-B.1.

Horizontal Connection Point (HCP)
The HCP is a connection point that allows different configuration for the coverage area served. The HCP shall be located in a fully accessible, permanent location for ease of maintenance and reconfiguration. No more than one HCP is allowed in a single horizontal cabling link. Cables extending from the HCP are called coverage area cables and shall be terminated directly to a BAS device or to a BAS outlet/connector, as long as the maximum of four connections is respected.

The difference between an HCP in a BAS cabling system and a consolidation point (CP) found in a telecommunications cabling system is the possibility to have a cross-connect at the HCP.

BAS outlet/connector
The BAS outlet is optional. It is connected to the horizontal cable either directly or through an HCP. The BAS outlet shall comply with the horizontal cabling requirements specified in ANSI/TIA/EIA-568-B.1.

Example of BAS Horizontal Cabling in a Star Topology.

Recognized horizontal cabling components
Recognized media are:
- 100 Ω balanced twisted-pair cable, 22 or 24 AWG unshielded twisted-pair (UTP) cable is recommended (ANSI/TIA/EIA-568-B.2)
- Multimode optical fiber cable, either 62.5/125 or 50/125 μm (ANSI/TIA/EIA-568-B.3)
- Singlemode optical fiber cable (ANSI/TIA/EIA-568-B.3)

All associated connecting hardware shall comply with ANSI/TIA/EIA-568-B.2 or ANSI/TIA/EIA-568-B.3.

BACKBONE CABLING
The backbone cabling topology shall be a star topology. The Backbone cabling shall meet the performance requirements and the installation requirements of ANSI/TIA/EIA-568-B.1.

Recognized backbone cabling components
Recognized media are:
- 100 Ω balanced twisted-pair cable (ANSI/TIA/EIA-568-B.2)
- Multimode optical fiber cable, either 62.5/125 or 50/125 μm (ANSI/TIA/EIA-568-B.3)
- Singlemode optical fiber cable (ANSI/TIA/EIA-568-B.3)

All associated connecting hardware shall comply with ANSI/TIA/EIA-568-B.2 or ANSI/TIA/EIA-568-B.3.
COVERAGE AREA
The coverage area is the space served by one BAS device. The BAS device is connected to the HCP or to the BAS outlet/connector via a coverage area cable. The coverage area cable shall meet the same requirements as the horizontal cable to which it connects.

The standard allows different coverage area topologies to support specific BAS applications. These topologies are implemented either from the HCP or from the BAS outlet/connector and do not effect the horizontal structured cabling implementation. The coverage area topologies are:
- A star
- A bridge connection
- A chain connection
- Multipoint bus
- Multipoint ring/fault tolerant circuit.

TELECOMMUNICATIONS ROOM OR COMMON TELECOMMUNICATIONS ROOM
The TR or CTR should serve the coverage areas for the same floor in which the TR or CTR resides. It should house the BAS controller cabinets. The TR or CTR should be designed in accordance with ANSI/TIA/EIA-569-A. Additional pathways and spaces may be required.

EQUIPMENT ROOM (ER) OR COMMON EQUIPMENT ROOM (CER)
For BAS, these spaces are commonly known as mechanical rooms. The ER or CER is the recommended area for installing the main BAS controllers.

The ER or CER should be designed in accordance with ANSI/TIA/EIA-569-A. Additional pathways and spaces may be required.

ENTRANCE FACILITIES (EF)
The EF consists of the cables, connecting hardware, protection devices and other equipment needed to connect the outside plant facilities to the premises cabling.

The EF should be designed in accordance with ANSI/TIA/EIA-569-A. Additional pathways and spaces may be required.

ADMINISTRATION
The administration of the BAS cabling infrastructure shall comply with the specifications provided by ANSI/TIA/EIA-606-A.