

**Standards to which the IP network must be installed.**

The installation should be installed, tested and documented as per the following standards -

European Committee for Electrotechnical Standardisation (CENELEC)

- EN 50173 Information Technology - Generic Cabling Systems
- EN 50173-1:2011 General requirements
- EN 50173-2:2007 + A1:2010 Office Premises
- EN 50173-3:2007 + A1:2010 Industrial Premises
- EN 50173-4:2007 + A1:2010 Residential Premises
- EN 50173-5:2007 + A1:2010 Data Centers
- EN 50173-6: Distributed Building Services

British Standards Institute (BSI)  
BSI adopts all CENELEC standards and prefix them with their authority code, i.e. EN 50174-1:2009 + A2:2004 becomes BS EN 50174-1:2009 + A2:2004  
BSI also produces its own national standards -  
BS 6701:2010 Telecommunications equipment and telecommunications cabling. Specification for installation, operation and maintenance.  
BS 7671 Requirements for Electrical Installations. IET Wiring Regulations (18th Edition).

BS6701:2010 states: All telecommunications cabling and telecommunications equipment shall meet the requirements of the BS EN 50174 series of standards.  
This relates to both owners of premises (Clause 4) and installers of telecommunications cabling and telecommunications equipment (Clause 5).  
Note that the use of the word 'shall' is prescriptive and as such, a legal requirement.

CENELEC also produce the EN50174 series of standards that are concerned with the way in which cabling systems are designed and installed -

- EN 50174-1:2009 + A2:2004 Specification and Quality Assurance
- EN 50174-2:2009 + A2:2004 Installation planning & practices inside buildings
- EN 50174-3:2013 Installation planning & practices outside buildings

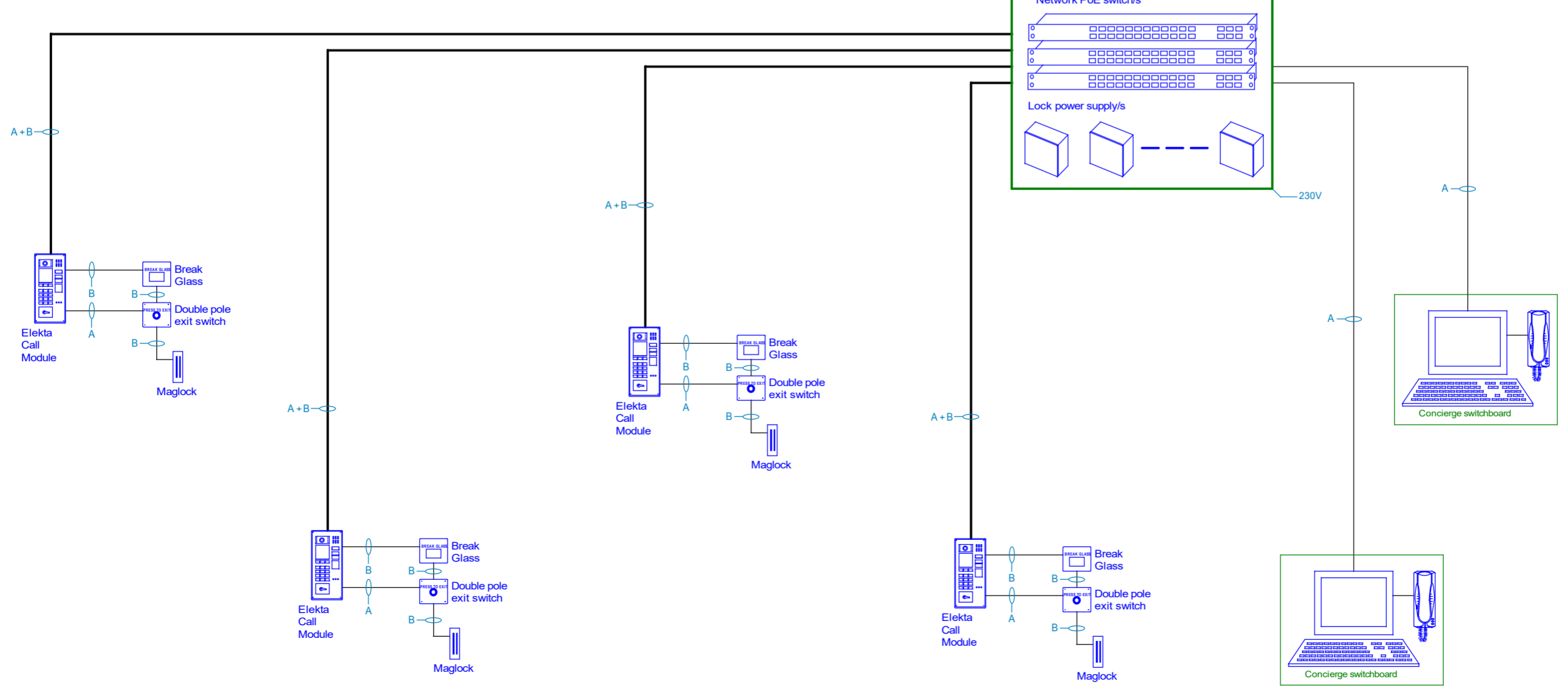
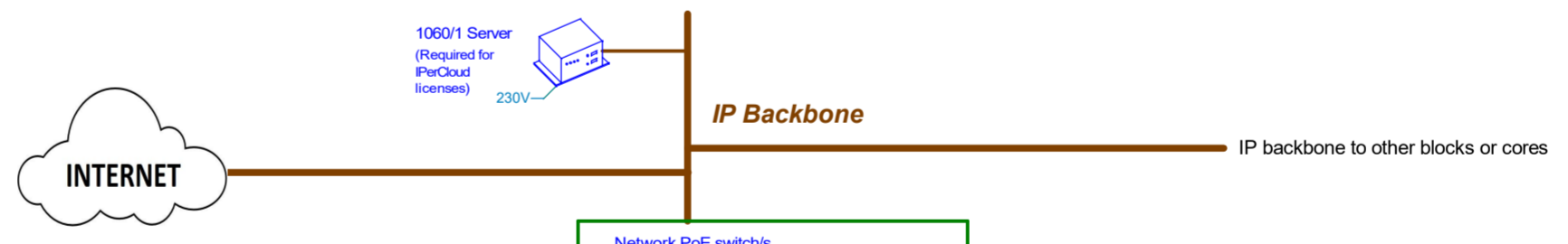
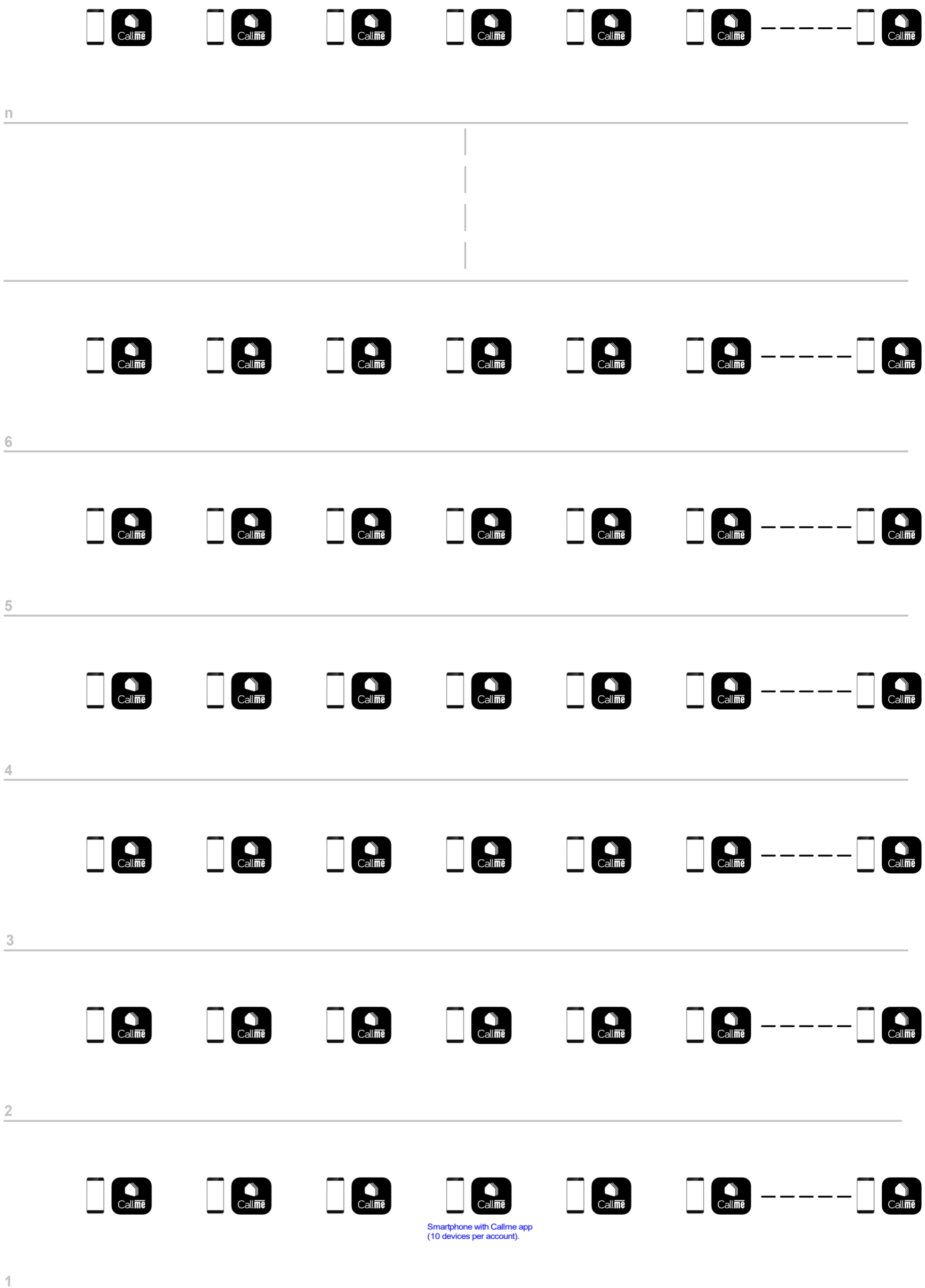
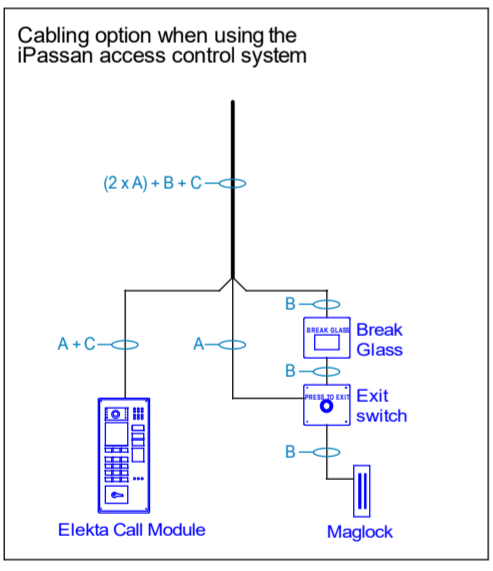
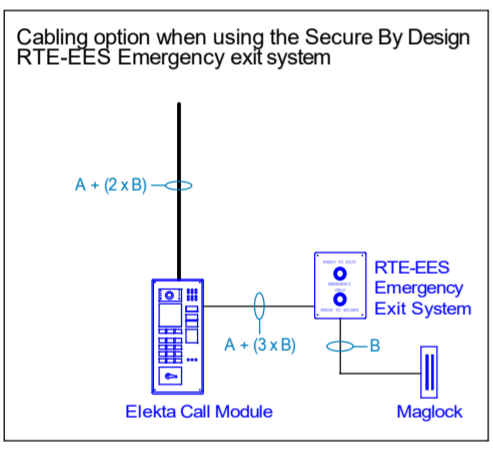
Another relevant CENELEC standard is -  
EN 50310:2010 Application of equipotential bonding and earthing in buildings with information technology equipment

If using 'Smart switches' the Spanning Tree Protocol must be disabled.

The following ports must be enabled -

- TCP/UDP ports used for server-client communication:  
tcp:2049,51234,5060,50118,3306,13451-13460,111,80,433,41365,22,918,40279  
udp:32768,2049,514,32771,34956,917,34839,67,5060,69,975,111,123,  
MULTICAST 238.0.0.200:55000 239.255.0.200 all ports
- TCP/UDP ports used for internet access (if any) tcp:5060,6060 udp:5060,6060
- Bandwidth per end point (kbps) 2500 for upload and 10000 in download

- A = Cat5e UTP
- B = 2 core lock cable e.g. 1mm twin flex
- C = Cat5e STP



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Title IPerComIPerCloud system schematic  
Drawing No. UD08676 PAGE1  
Date 8-10-2022  
Drawn TC Checked DB Revision 01