Feras Hani
Field Application Engineer – Middle East

What, Which, Why…..

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Trends

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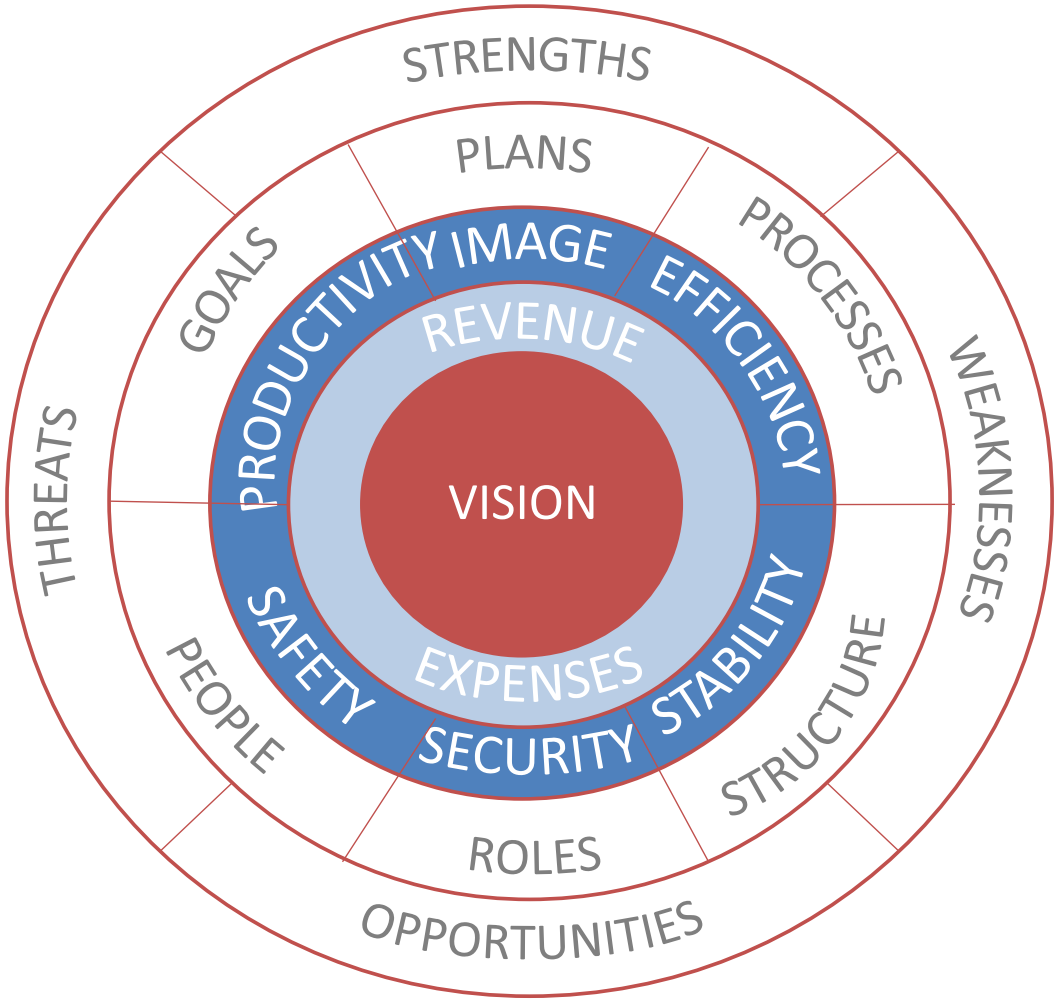
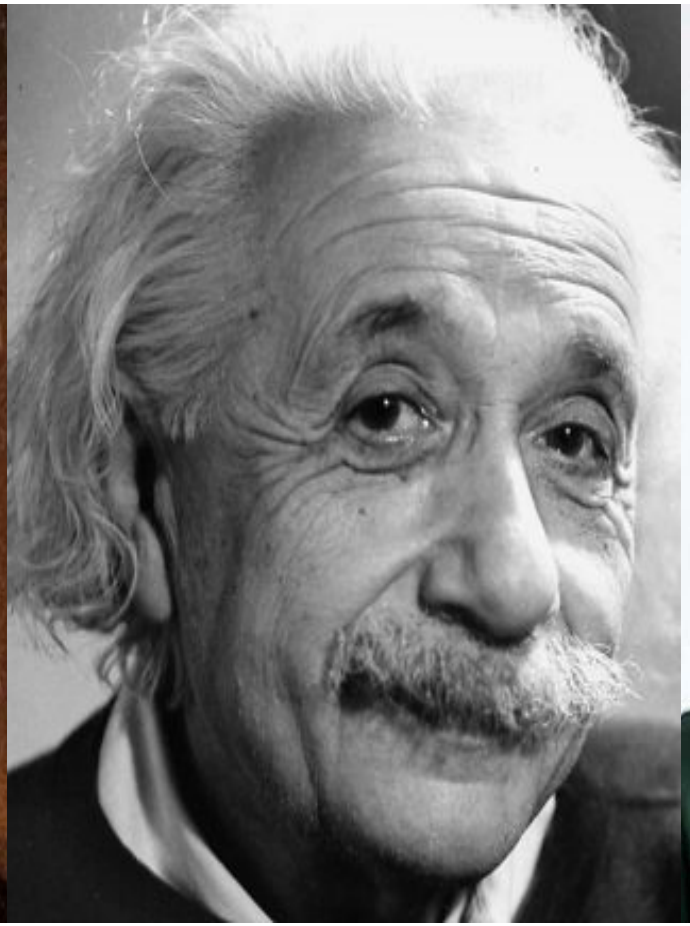
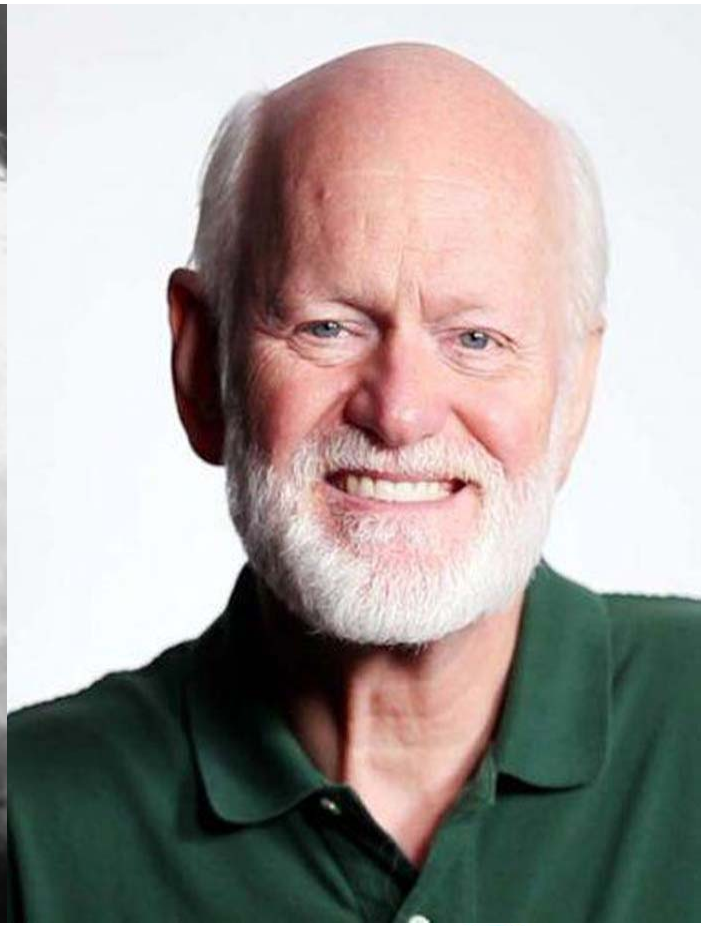
What Do Companies Buy?



LOOKING INTO THE PAST MAY NOT HELP YOU PREDICT THE FUTURE

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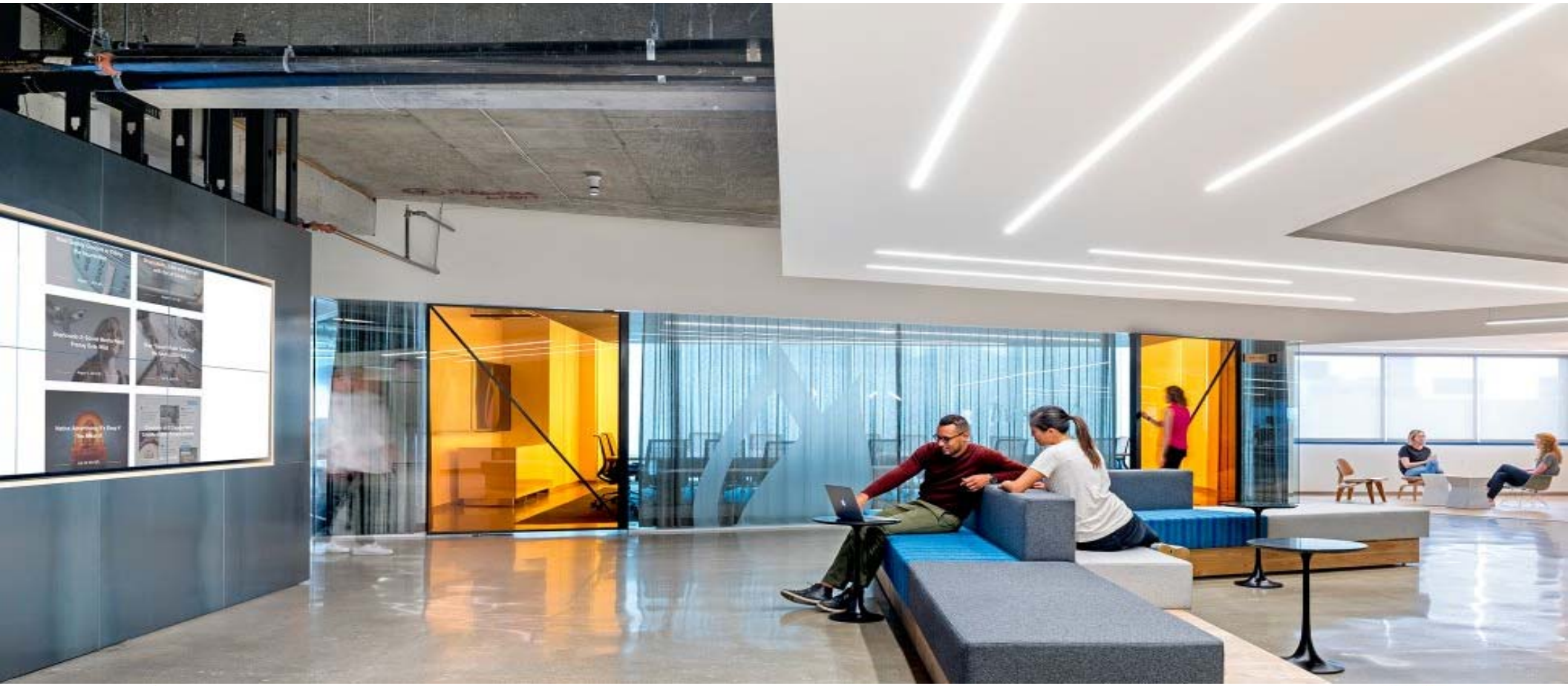

Workspaces

Focus On USER EXPERIENCE, TECHNOLOGY Enabled

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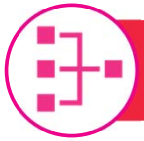
Trends In Commercial Buildings

5 Trends Driving Changes in the Building and Campus

Mobility

Bandwidth

Power



Network Convergence

Move To The Ceiling

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Mobility

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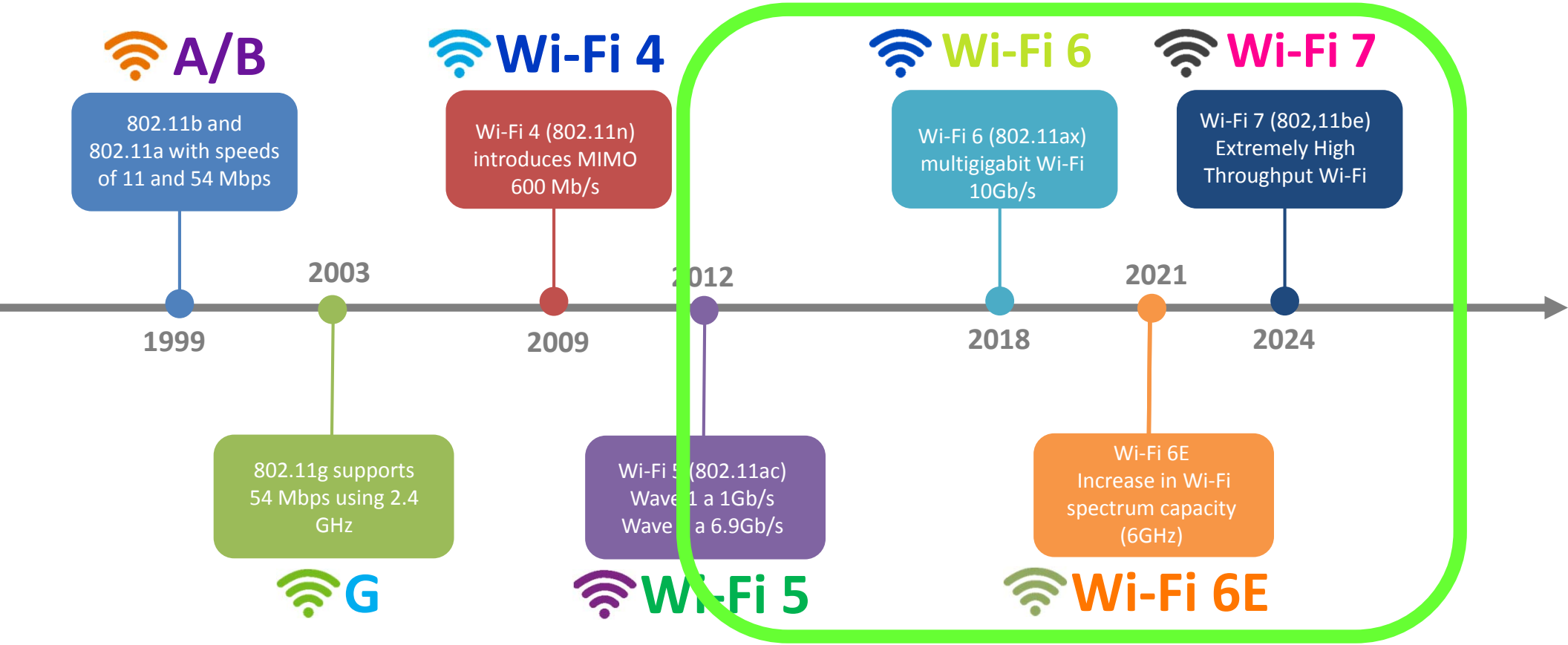

Wi-Fi Evolution

Category 6A

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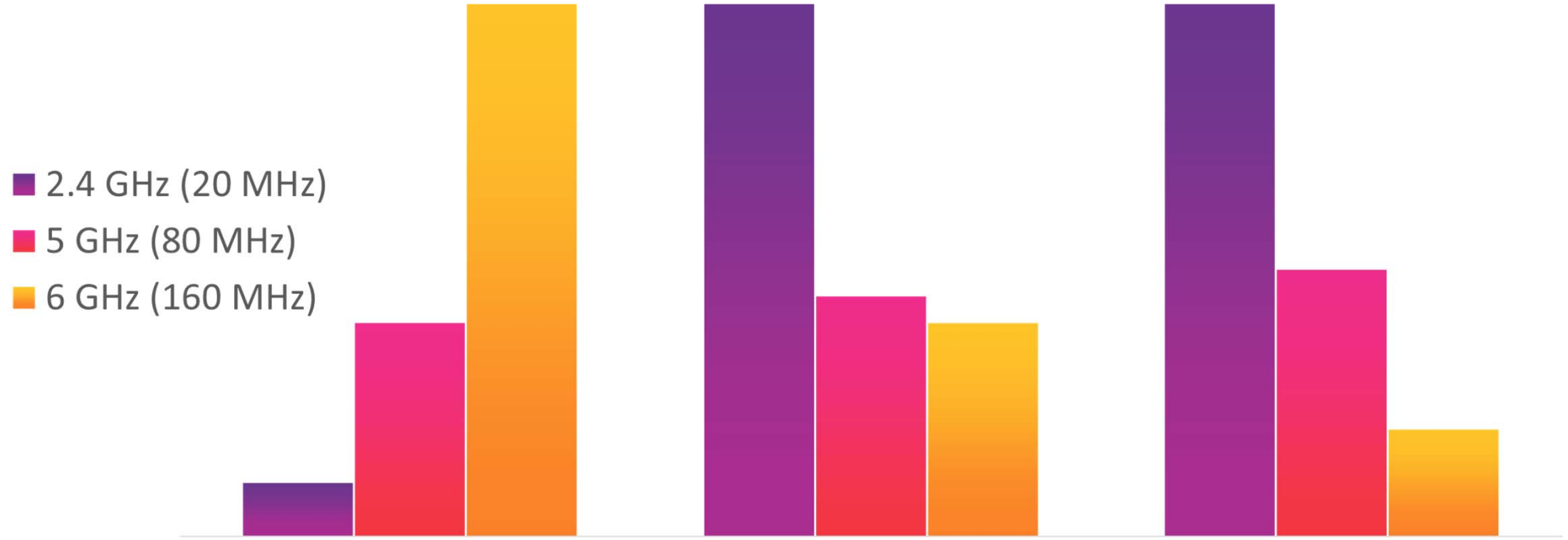
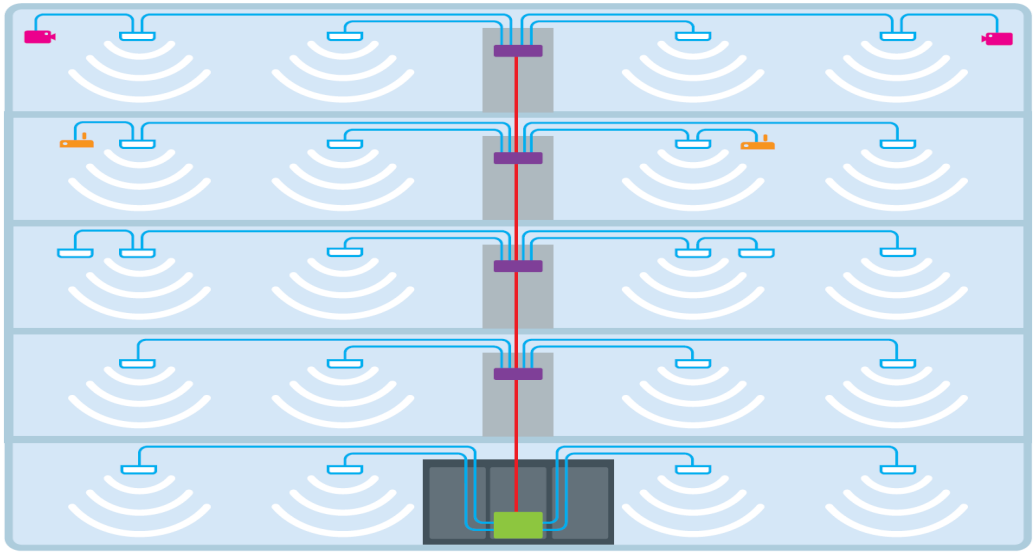
Wi-Fi 6E - Improved Wi-Fi Performance at 6 GHz



Category 6A

Wi-Fi 6 Needs a Total Renovation of Network Infrastructure



Multi-Frequency

Multi-Operator/
Multi-Technology

2 3 4 5
G G G G

Category 6A SCS

ION-E - Universal Wireless Infrastructure

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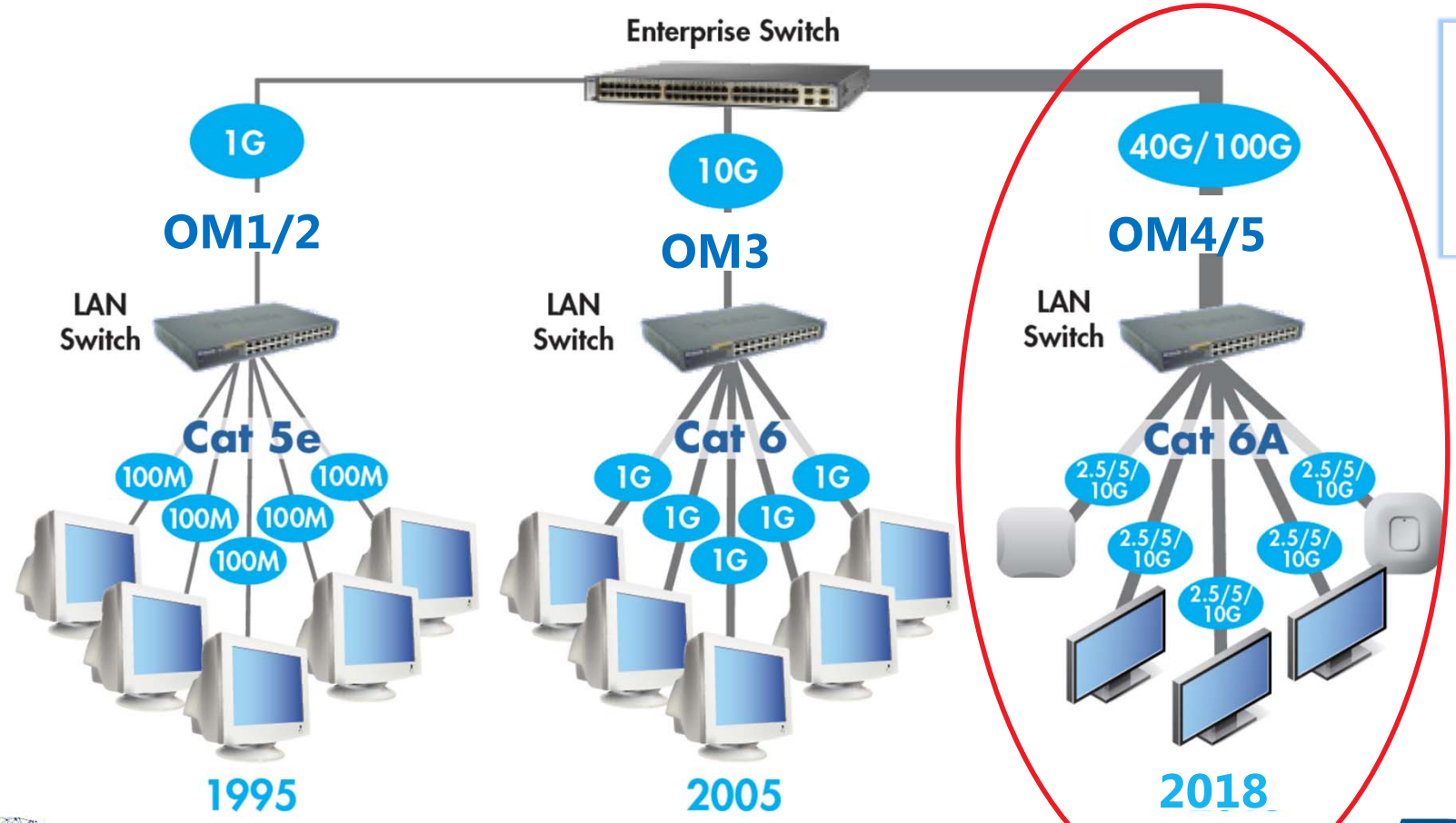
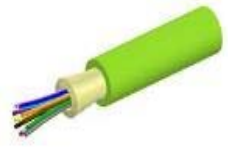
Bandwidth





Duplex OM5

Building Connectivity Evolution

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BANDWIDTH NEEDS INCREASING IN
BUILDIN
1G
2.5G
5G
10G

MultiGigabit & Category 6A

Ethernet switches

Wi-Fi Access Points

DAS/IBW

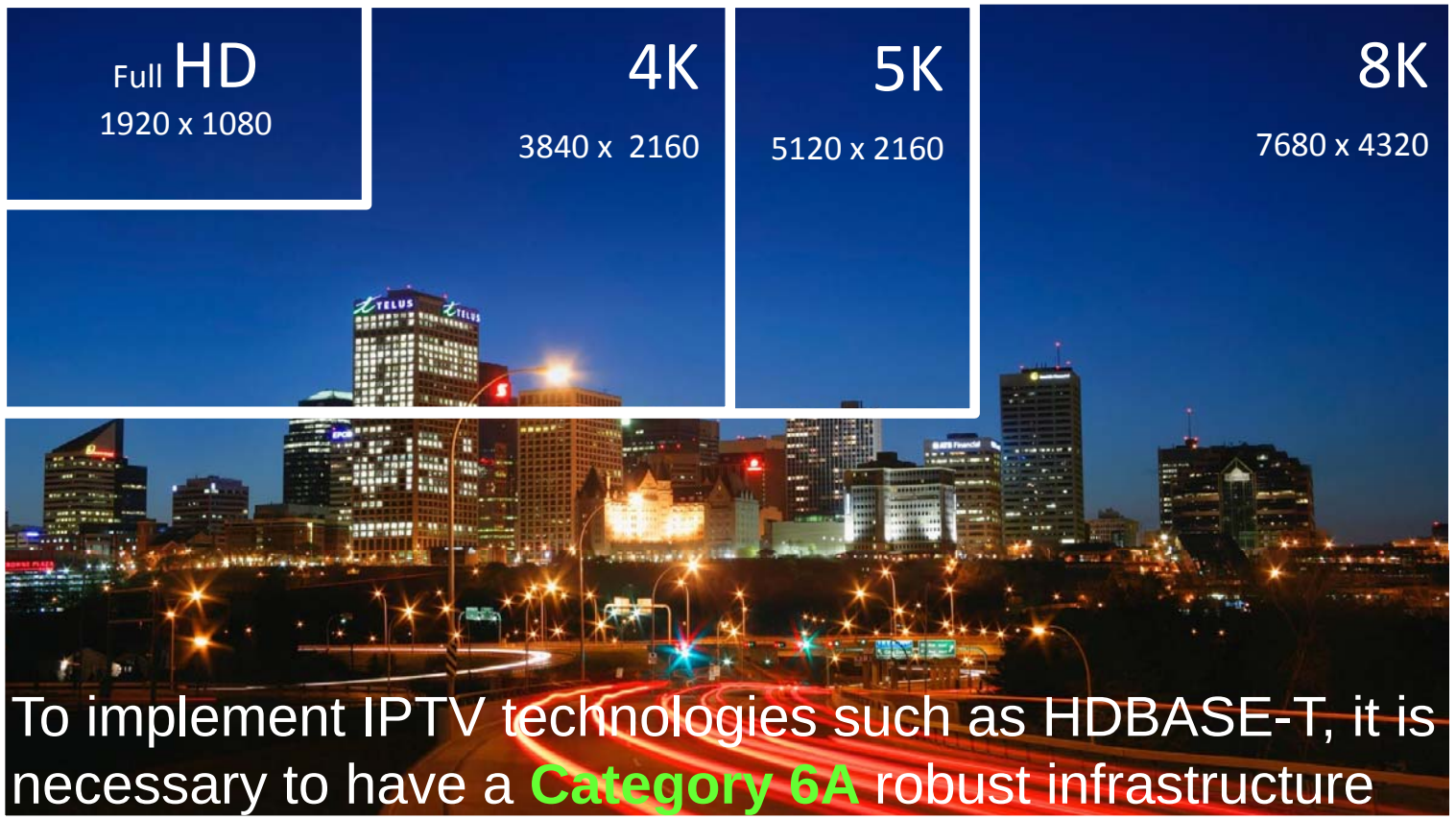
Small Cell

PCs Desktop

Bundle Length up to 50m	Category 5e	Category 6	Category 6A
2,5GBASE-T	*Low*	*Low*	*Assured*
5GBASE-T	*Low/Medium*	*Low*	*Assured*
Bundle Length up to 75m	Category 5e	Category 6	Category 6A
2,5GBASE-T	*Low/Medium*	*Low*	*Assured*
5GBASE-T	*Medium*	*Low/Medium*	*Assured*
Bundle Length from 75m to 100m	Category 5e	Category 6	Category 6A
2,5GBASE-T	*Medium*	*Low/Medium*	*Assured*
5GBASE-T	*High*	*Medium*	*Assured*
ALSNR Risk	*High*	*Medium*	*Low*

Source: ISO/IEC TR 11801-9904

I-Rapid growth of the multi-gigabit ecosystem IEEE 802.3bz, approved at September 2016 – 2,5/5GBASE-T
II-In 2019, approximately 4 million ports 2.5/5Gbps have been supplied - Dell'Oro Group



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Power

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Up to 15.4 W	Standard: IEEE 802.3af, Type 1, PoE (2003), PoE over 2 Pairs – 350mA	Thin Clients, Biometric Access Control, 802.11n Wireless
Up to 30 W	Standard: IEEE 802.3at Type 2, PoE+ (2009), PoE over 2 Pairs – 600mA	Card Readers, PTZ IP Cameras, Alarm Systems, VOIP Phones, Lighting
Up to 60 W	Standard: Cisco (2011), UPoE over 4 Pairs, IEEE 802.3bt Type 3, PoE++ or 4PPoE (2018), PoE over 4 Pairs – 1200mA	Access Controls, Laptops, POS Readers, PTZ IP Cameras, Nurse Call, 802.11ac Wireless, Kiosk Displays
Up to 90 W	Standard: Power Over HDBASE-T (2011), 4-Pair POH IEEE 802.3bt Type 4, PoE++ or 4PPoE (2018), PoE over 4 Pairs – 1920mA	Desktop Computers, Televisions, Video Conferencing, High Power Wireless

The Evolution of PoE Technology

117 Million ports in 2019 - Growth ~ 12.8% Annual over the next 5 years

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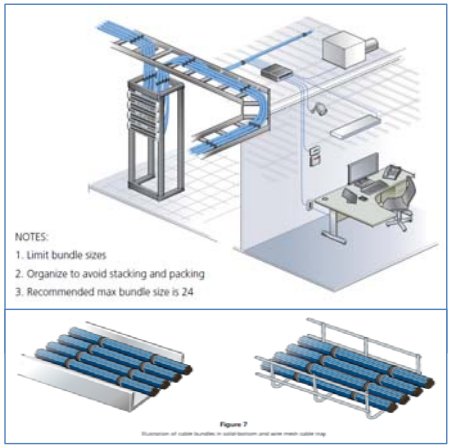
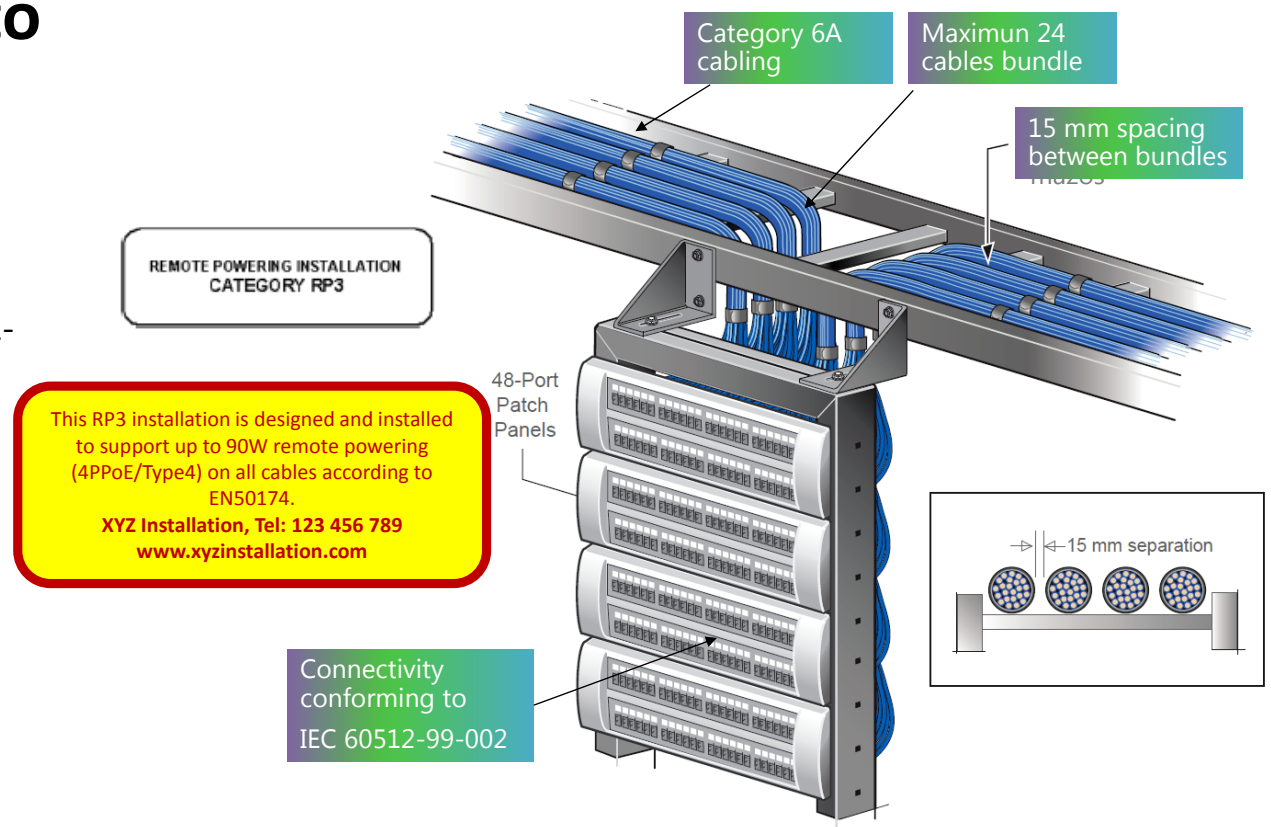
Installations Ready to Support PoE ++

- Category 6A
- Bundles up to 24 cables
- 15mm spacing between bundles
- Connectivity conforming to IEC 60512-99-002



RP3 Installation, according with EN 50174-2: 2018



The increased PoE power makes it necessary to take additional precautions in the cabling installation to avoid overheating.

Remote Powering Classes (RPx)

RP1 **PoE and PoE+**	• Average current for all conductors not greater than 212 mA • No planning and installation requirements • Documentation and administration during the lifetime of cabling
RP2	• Average current for all conductors between 212 mA and 500 mA • Require complex planning and installation practices • Documentation and administration during the lifetime of cabling
RP3 **PoE type4**	• Average current for all conductors not greater than 500 mA • Require planning and installation practices • No documentation and administration during th lifetime of cabling

Recommended

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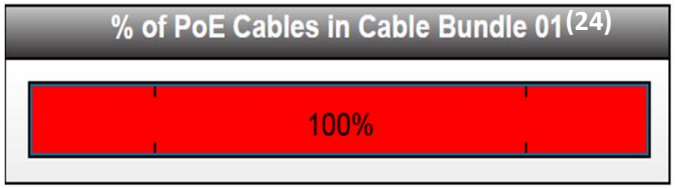
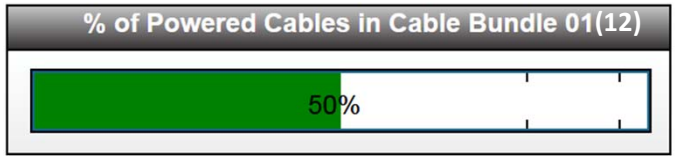
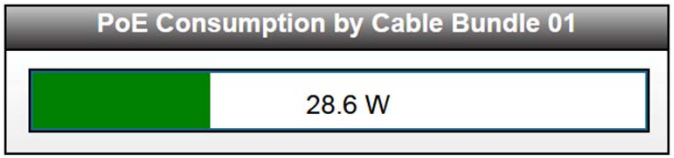
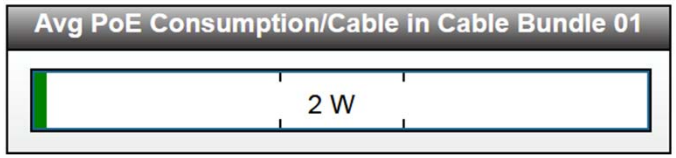
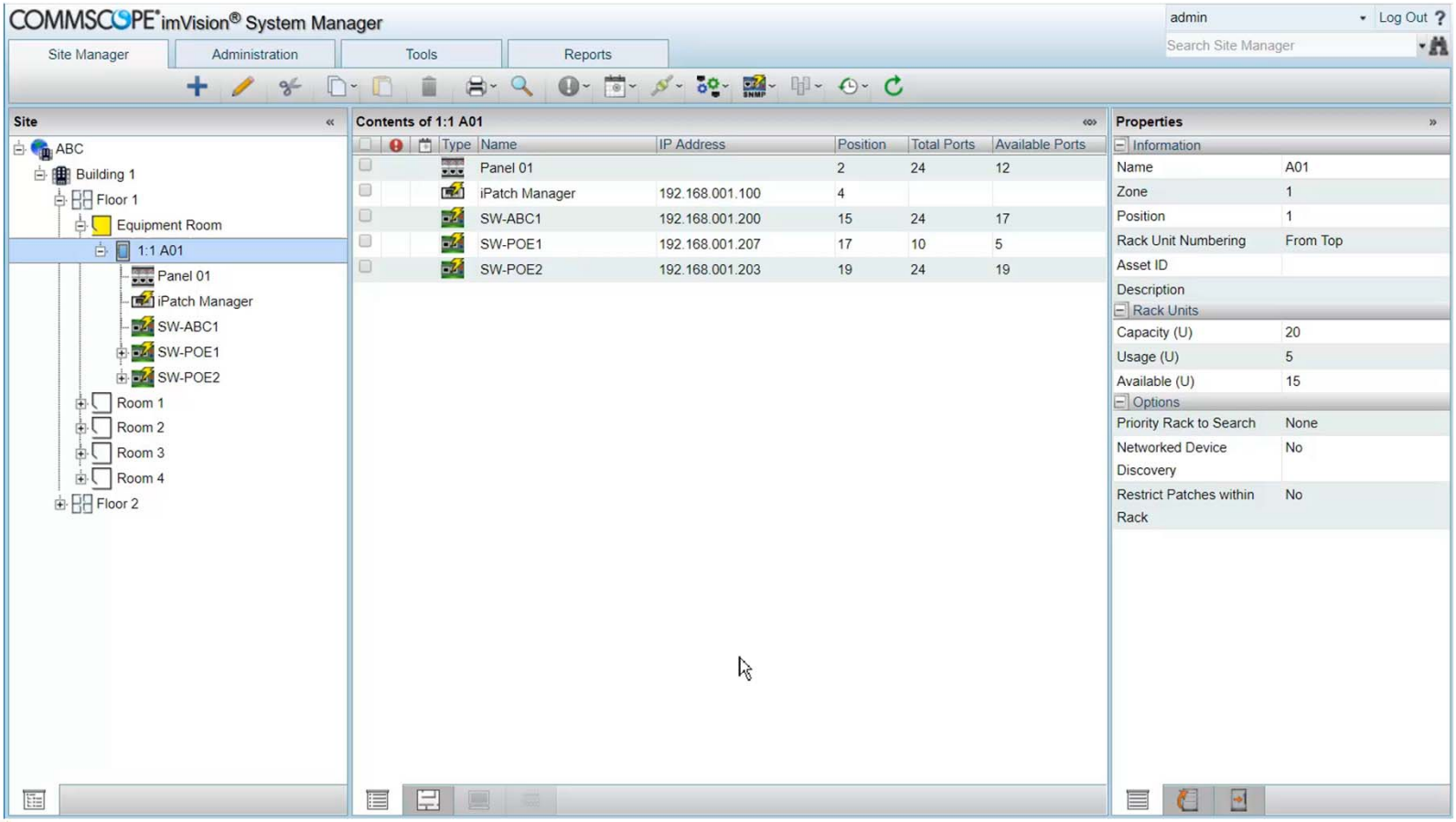
PoE Documentation





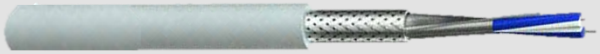
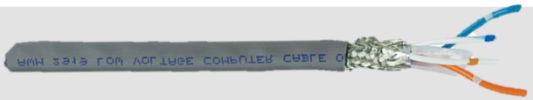





COMMSCOPE imVision® System Manager
admin
Log Out
Search Site Manager
Site Manager
Administration
Tools
Reports
Site
ABC
Building 1
Floor 1
Equipment Room
1:1 A01
Panel 01
iPatch Manager
SW-ABC1
SW-POE1
SW-POE2
Room 1
Room 2
Room 3
Room 4
Floor 2
Contents of 1:1 A01
Type
Name
IP Address
Position
Total Ports
Available Ports
Panel 01 2 24 12
iPatch Manager 192.168.001.100 4
SW-ABC1 192.168.001.200 15 24 17
SW-POE1 192.168.001.207 17 10 5
SW-POE2 192.168.001.203 19 24 19
Properties
Information
Name A01
Zone 1
Position 1
Rack Unit Numbering From Top
Asset ID
Description
Rack Units
Capacity (U) 20
Usage (U) 5
Available (U) 15
Options
Priority Rack to Search None
Networked Device Discovery No
Restrict Patches within Rack No

Bundle View

Network Convergence

Application	Cabling	Installation
Security		Seguridad
AV		AV
HVAC		HVAC
Lighting		Lighting
BMS		BMS
IBW		IBW
IT		IT

CABLING MODEL – PAST

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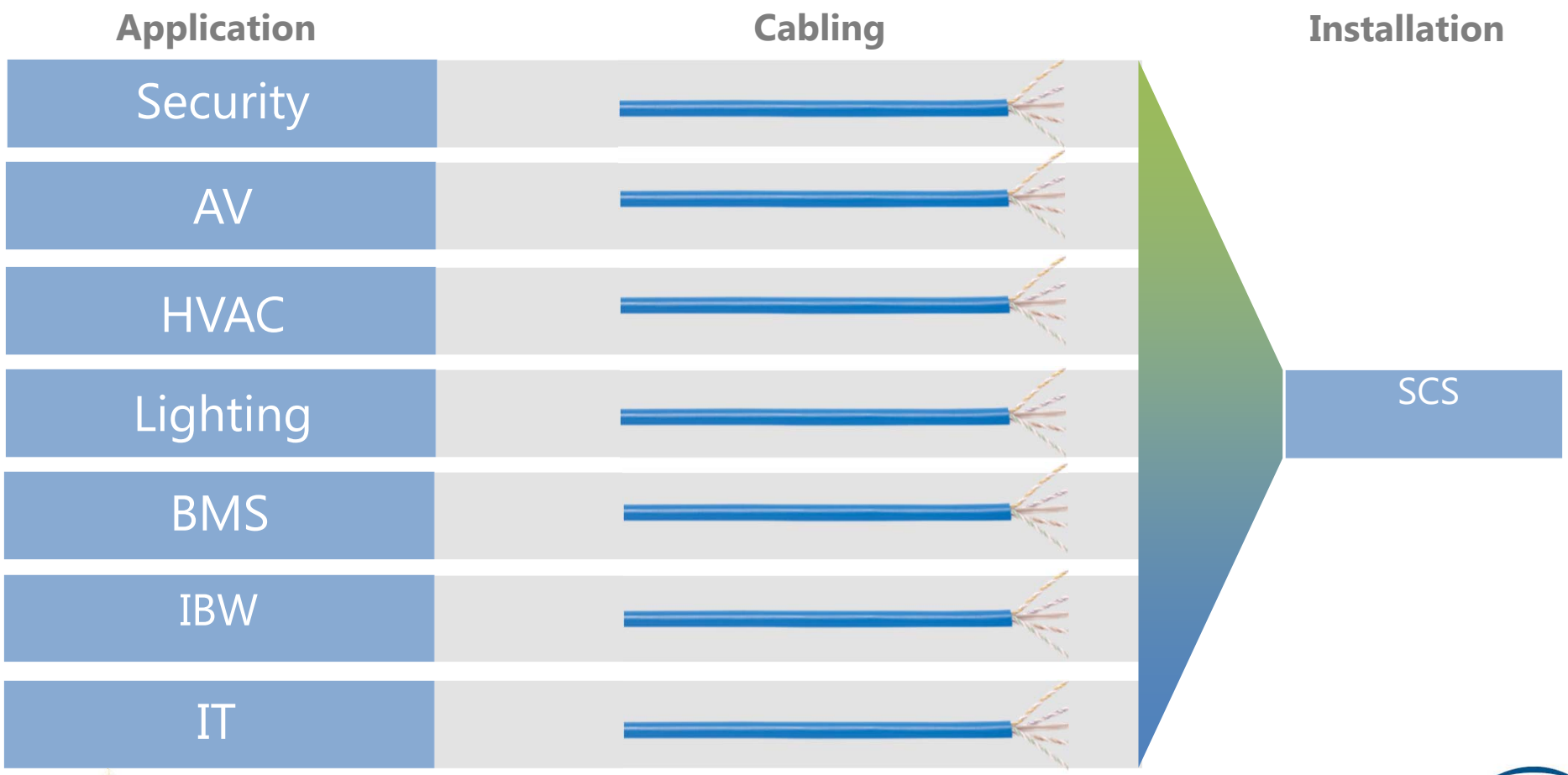

CABLING MODEL CURRENT & FUTURE

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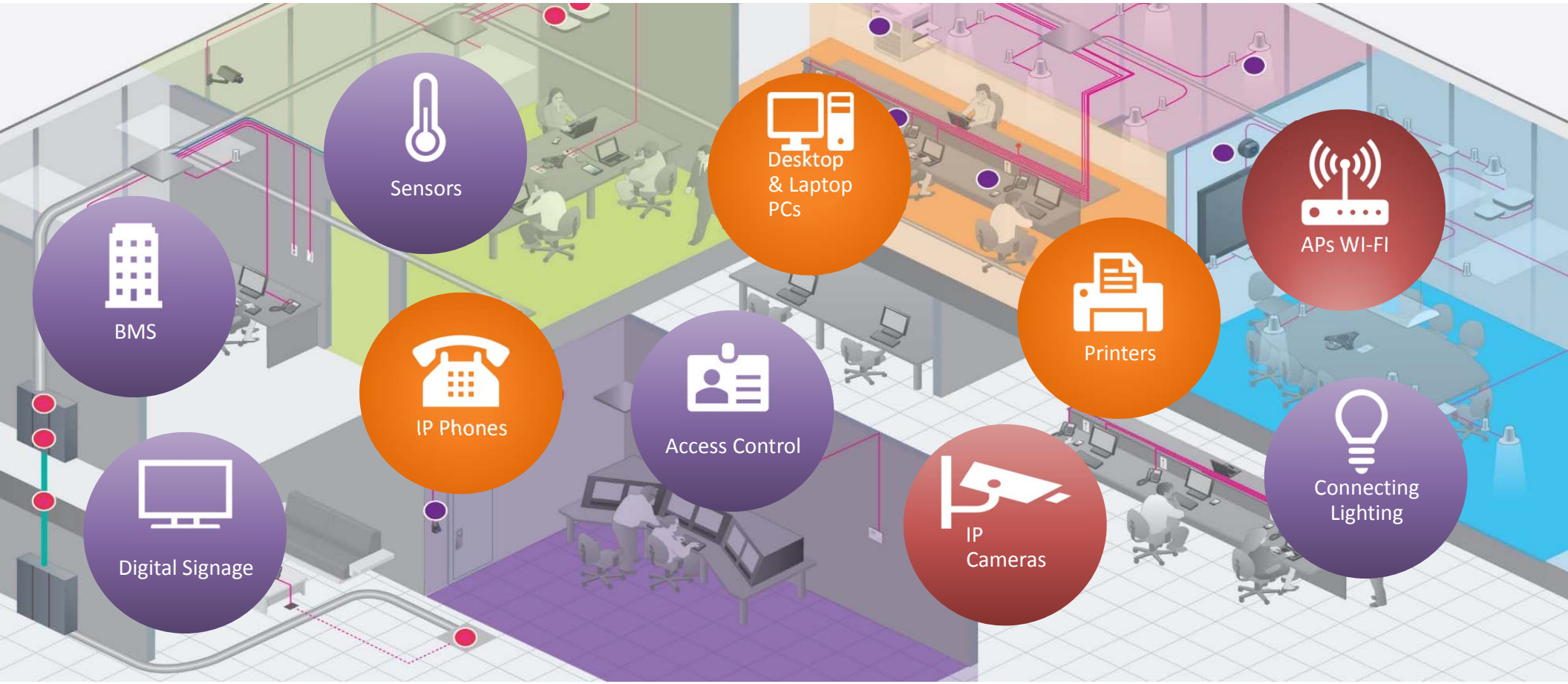
Move To The Ceiling



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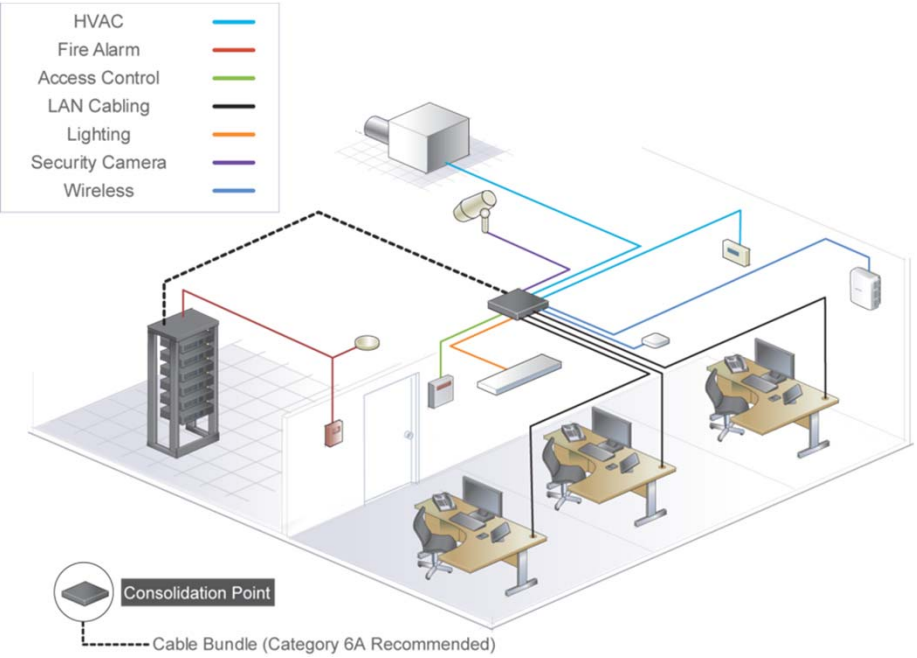
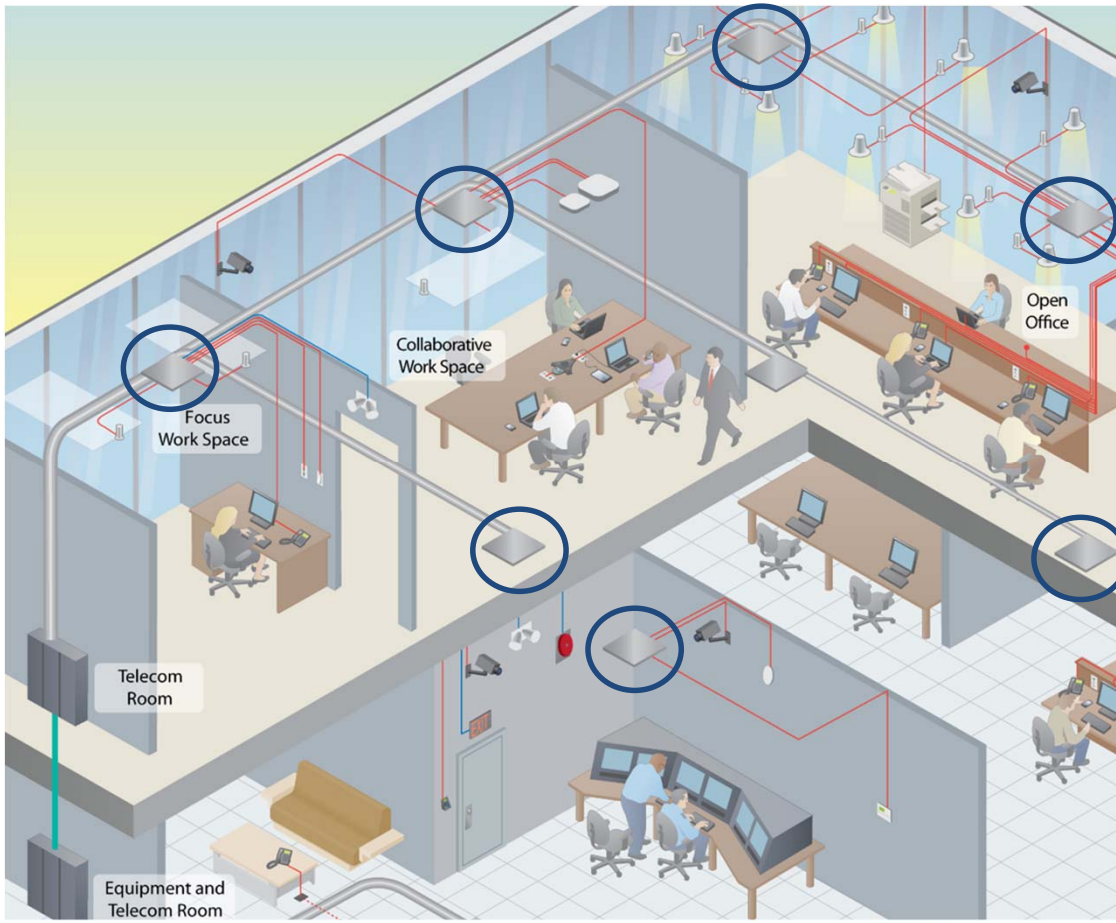
Design Recommendation: Universal Connectivity Grid





Design Recommendation

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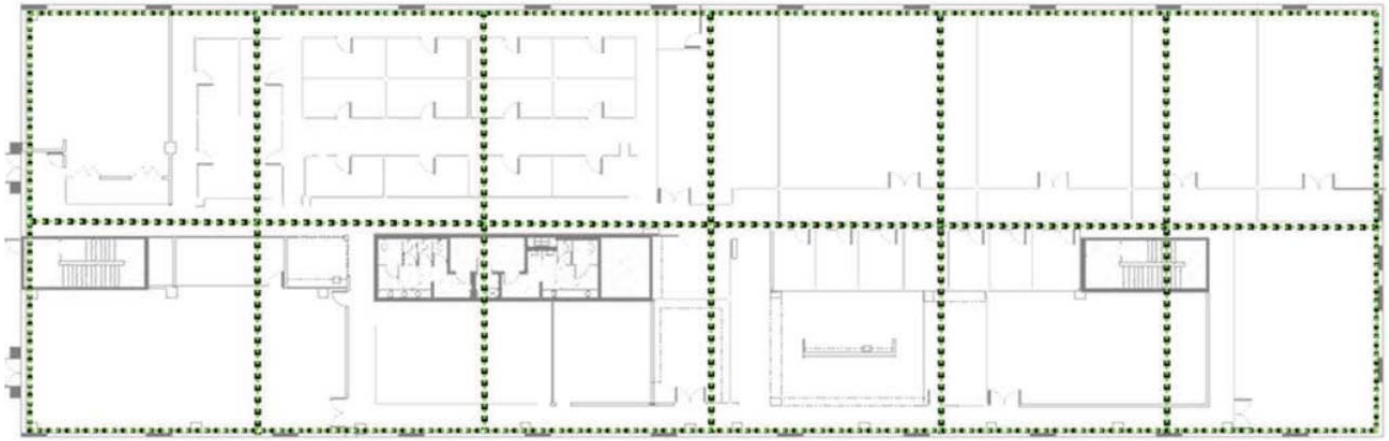
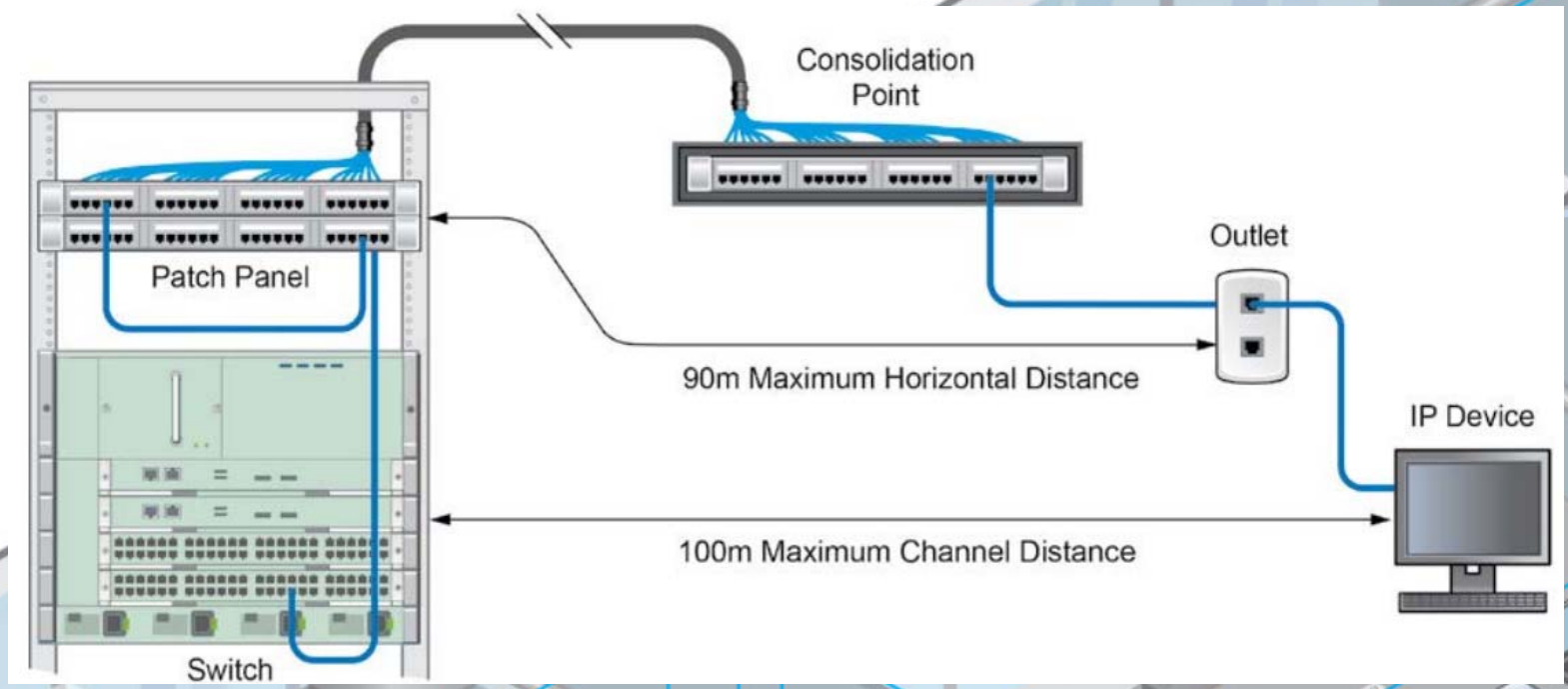
Universal Connectivity Grid

- Universal Connectivity Grid (UCG) evolves the concept of zone cabling
- Divides usable floor space into a grid of evenly sized service areas/cells
- A CP is located within each cell, providing maximum flexibility for connecting, adding and moving devices.

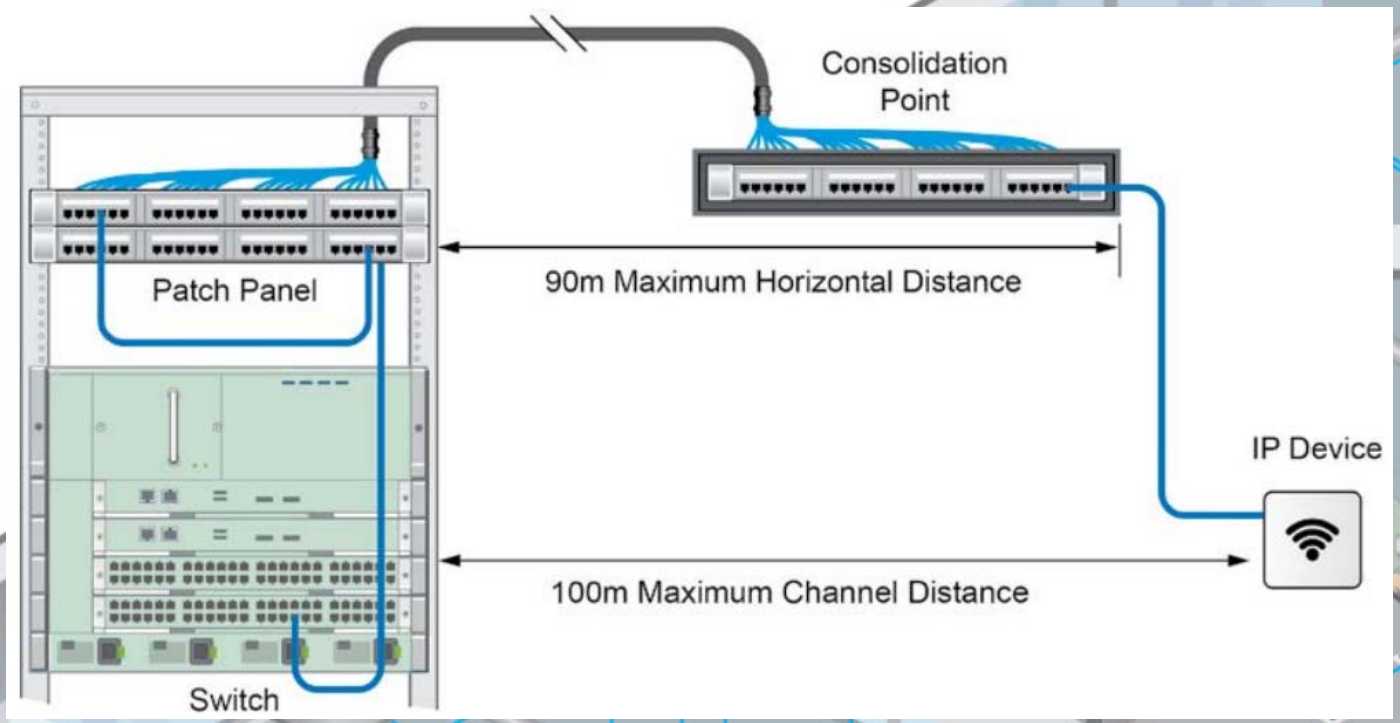


SCP in Horizontal Cabling



Common for workstations or connecting IP devices that require wall mounted outlets

SCP in Horizontal Cabling



Ceiling-mounted devices (occupancy sensors, WAPs, CCTV Cameras)

Higher Bandwidth and Power Driving Need for Category 6A Cabling

Intelligent Buildings
TIA 862-B draft
ISO 11801-6

WiFi
TIA TSB-162
ISO TR 24704

PoE
TIA TSB-184-A
ISO 14763-2

2.5G/5GBT
TIA TSB-5021
ISO 11801-9904

Healthcare
TIA 1179

Data Centers
TIA 942-A
ISO 11801-5

Education
TIA 4966

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How can we help you?

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Infrastructure System Engineer
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