Standards-based Labelling: The Key to Effective Network Cabling Plan

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DATA CENTRE LANDSCAPE

- Digital Economy
- Data-driven population
- Gov. support

- Measurement tools
- Infrastructure & standards
- Cabling

- Data centre design
- Software management
- Tracing and organising
AGENDA PANEL

- A Systematic Labelling Scheme
- Value of End-to-end Labelling
- ANSI / TIA-606 Standards
- Importance of Standards for cable installers
- Data Centre Labelling Plan and Identifier Roadmap
Today’s data centres house a large number of diverse bandwidth-related devices.

These devices are interconnected by networking equipment.

A systematic labelling scheme provides transmission pathways for mission-critical data to flow across the entire networked infrastructure.
RAPID GROWTH IN DEMAND FOR DATA CENTERS IN ASIA PACIFIC

Overtaking Europe by 2021

While Asia Pacific’s data centre services market is currently behind that of Europe and North America, it is forecasted to catch up with the European market by 2021, driven by a faster growth rate of 27% p.a. compared to Europe (13%) and North America (12%).

*Source: Markets and Markets 2016

*Sources: © 2017 PricewaterhouseCoopers Advisory Services Pte Ltd. All rights reserved.
Why you should apply the labeling standards consistently

• Clear, structured labeling is the mark of a professional …
• These can help reduce errors and save time and money …
• These can provide greater warranty assurance …
• More complex customer sites make labeling standards more critical …

And most of all:
Sooner or later, there will be moves/adds/changes to your work; applying the standard now provides a logical path to follow for troubleshooting and to make those go faster and easier
YOUR LABELS SAY A LOT ABOUT YOUR WORK

No labels at all –
  • Believe it or not, still happens

Homemade conventions –
  • You make stuff up as you go along

Labels that fall off or smear –
  • Fast and cheap is more important to you than good

And most of all: None of these is going to leave a professional impression with your clients
THE VALUE OF END-TO-END LABELLING

PROFESSIONAL
The purpose of using labels as part of a professional cable-management system can simplify troubleshooting activities.

ECONOMICAL
Lower total cost of ownership with a well-labelled cable installation – ease of update and accelerate cable tracing.

EFFECTIVE
Avoiding downtime is critical in any data centre operation throughout the entire project pipeline with accurate mapping of server installation.
SO WHAT IS ESSENTIAL TO A STRUCTURED CABLING SYSTEM

1. Standards-based Labelling
   • The essential key to an effective network identification plan

2. Following proven standards
   • A basic understanding of the ANSI/TIA-606-B Standard

3. Use the right labelling tool
   • Know the difference between commercial grade and consumer grade
WHAT IS ANSI/TIA-606-B?

• It extends the marking standards in ANSI/TIA-606-A
• TIA-606-B includes more identifiers than TIA-606-A
  • 606-A covered: TS, Horizontal link, TMGB and TGB
  • 606-B includes: cabinets, racks, enclosures and wall segments; patch panels or blocks; and cables (between cabinets, racks, enclosures and wall segments)
  • Allows existing 606-A formats to continue where already in use
• Not just for commercial data centers
  • 606-B covers commercial, residential, industrial and healthcare facilities
• It isn’t mandatory, but …
  • More and more building owners are requiring it and specifying it
  • Increasing numbers of contractors are adopting it as standard practice
WHY IS IT IMPORTANT FOR DATA CENTRE IDENTIFICATION?

• It sets a **predictable, logical system** of identifying key network assets and connections, where they are located, and how and to what each are connected.

• It **simplifies data center labelling scheme**, and also adjusting onsite when “as built” doesn’t equal “as planned”.

• Once an infrastructure is properly marked in accordance with the standard, it becomes **easier and more efficient to troubleshoot** any potential errors unknown during installation.
WHAT NEEDS TO BE LABELLED?

- Telecommunications spaces
  - Entrance (where telecom networks enter the building)
  - Telecommunications room
  - Equipment room with switches, servers and routers
- Pathways & Cabling
  - Horizontal pathways
  - Backbone pathways
  - Interbuilding pathways
- Fire Stopping Locations
- Bonding Locations
- Grounding Locations
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It is all about location – location – location.
NETWORK AND DATA CENTRE LABELLING

CABLE AND PANEL MARKING
NETWORK AND DATA CENTRE LABELLING

CABINET/RACK LABELS
Example of cabinet/rack label:

EU 09/3

This label defines that the cabinet/rack is located with its right front corner at the intersection of Row EU and Column 09.

PORT LABELS
The numbering sequence should proceed from left to right and top to bottom for all ports on a patch panel.

PATCH CORD LABELS
This label defines patch cord connection between Cabinet AD04 panel 30-port 04 going to Cabinet AE04 panel 23-port 04.
UPS-TO-PDU LABELS
Labels should be attached to each end of the cable specifying the equipment and their respective locations.

UPS EQUIPMENT LABELS

ELECTRICAL / ARC FLASH LABELS
SAFETY AND FACILITY SIGNAGE LABELLING

**ELECTRICAL PANEL LABELS**

Electrical Feeder From:

**PANEL 600-A1**
**CB#9 150-AMP 3P/3W**

**VOLTAGE MARKING LABELS**

220 VOLTS

**SAFETY INSTRUCTION LABELS**

IN THE EVENT OF A FIRE
ACTIVATE FIRE SUPPRESSION SYSTEM
SAFELY STOP MACHINE
APPLY PARK BRAKE
SHUT DOWN POWER
INITIATE EMERGENCY PROCEDURE

**WARNING AND HAZARD LABELS**

WARNING:
This Equipment is Designed and Tested to Performance Levels Which Exceed Underwriters Laboratories Standards. Use of Incompatible Circuit Breakers May Adversely Affect User Safety, Impair Reliability and Will Void the Warranty.
Cable installers should look for UL mark on the label tapes that have been tested and certified to become a UL recognized component under the UL-969 standard, Marking and Labelling Systems.

In simple terms, UL recognised labels define the performance properties of specific tapes by part number, and UL certifies these tapes meet these properties and the results are published on the UL Website.
THINGS TO REMEMBER…

• Clear, structured labeling is the mark of a pro

• ANSI/TIA-606-B extends the reach of ANSI/TIA-606-A
  • Covers more facility types
  • Adds more details to ID locations within locations
  • Identifiers follow a logical sequence

• Use professional-grade labels and labeling tools
  • Create and print the labels you need more efficiently
  • Label something once, with labels that last