

ODVA
2007

CIP Networks Conference
and 12th Annual Meeting

Industrial Field Bus Standards Update

Bob Lounsbury
Rockwell Automation
EtherNet/IP Physical Layer JSIG Chair

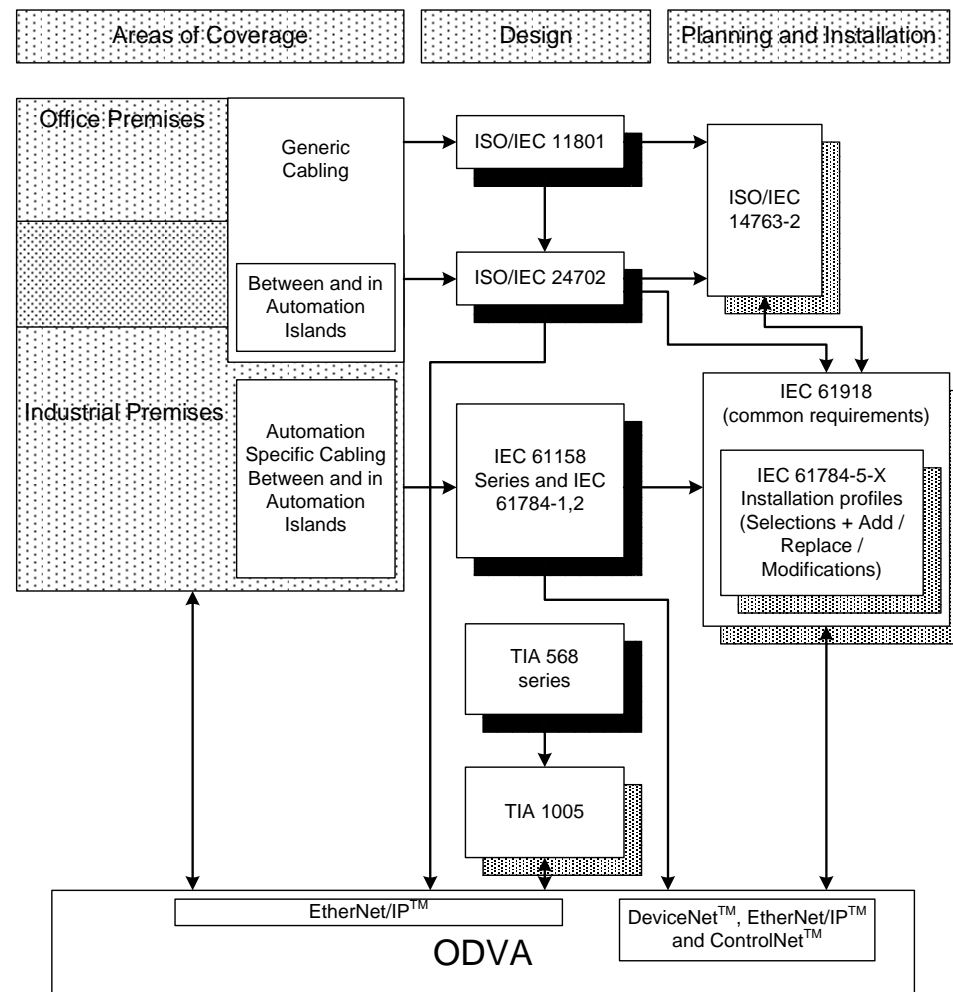
Technical Track

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Abstract

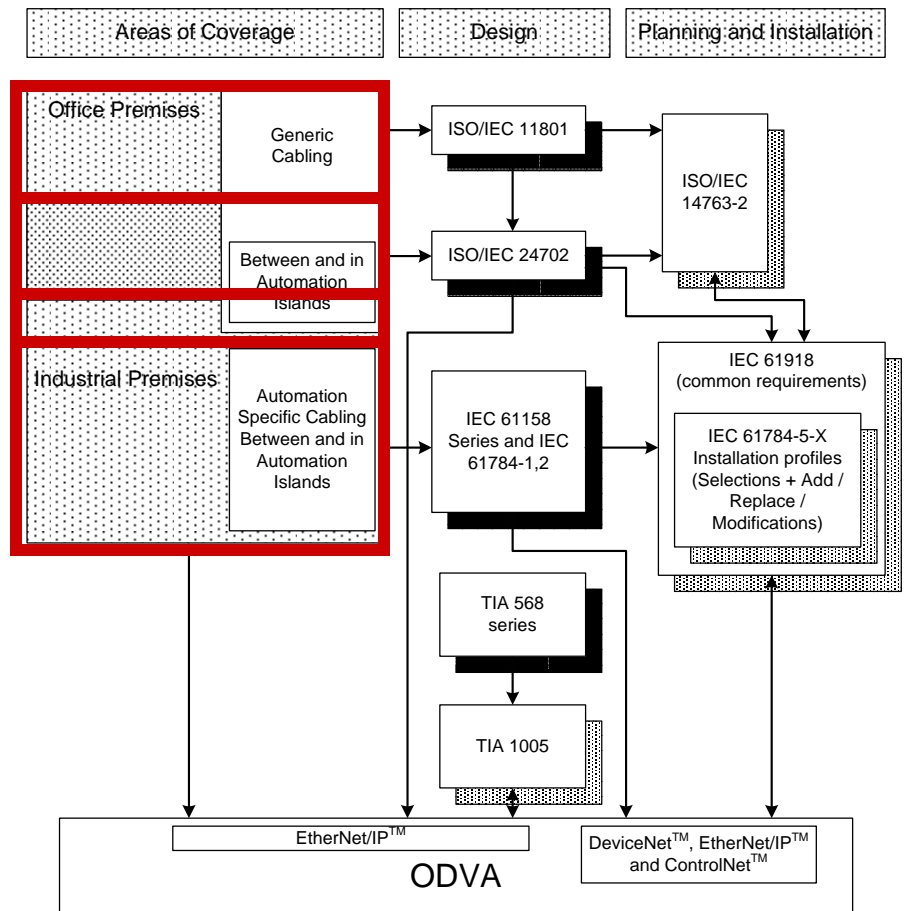
This paper will cover the current state of related standards that effect DeviceNet, EtherNet/IP and ControlNet. Last year ISO/IECSC25C published the first international standard supporting Industrial Ethernet networks titled, *"Information Technology- Generic cabling –Industrial Premises"*. This year it is projected that two more standards will publish, titled *"Digital data communications for measurement and control-Part 5: Installation for communications networks in industrial control systems"* and *"Telecommunications Infrastructure Standard for Industrial Premises"*. One of these standards provides installation guidance for DeviceNet, EtherNet/IP and ControlNet. All of these standards have a direct impact on EtherNet/IP networks. This paper will cover the highlights of each standard and release schedules.

FieldBus Standard Standards (Physical Layer)



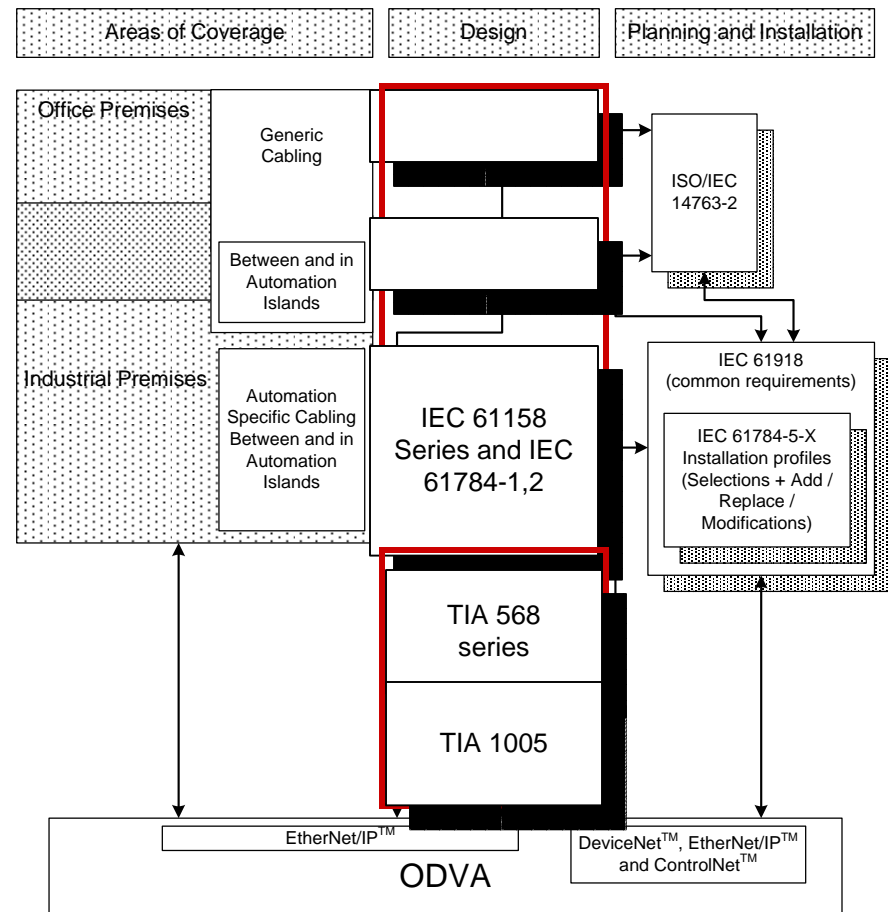
Standards Coverage Areas

- ▶ Two Coverage areas
 - Office (commercial) Premises
 - Generic cabling mainly covers office spaces and general floor areas
 - Industrial Premises
 - Industrial cabling mainly covers in and between automation islands
 - The two overlap in some areas



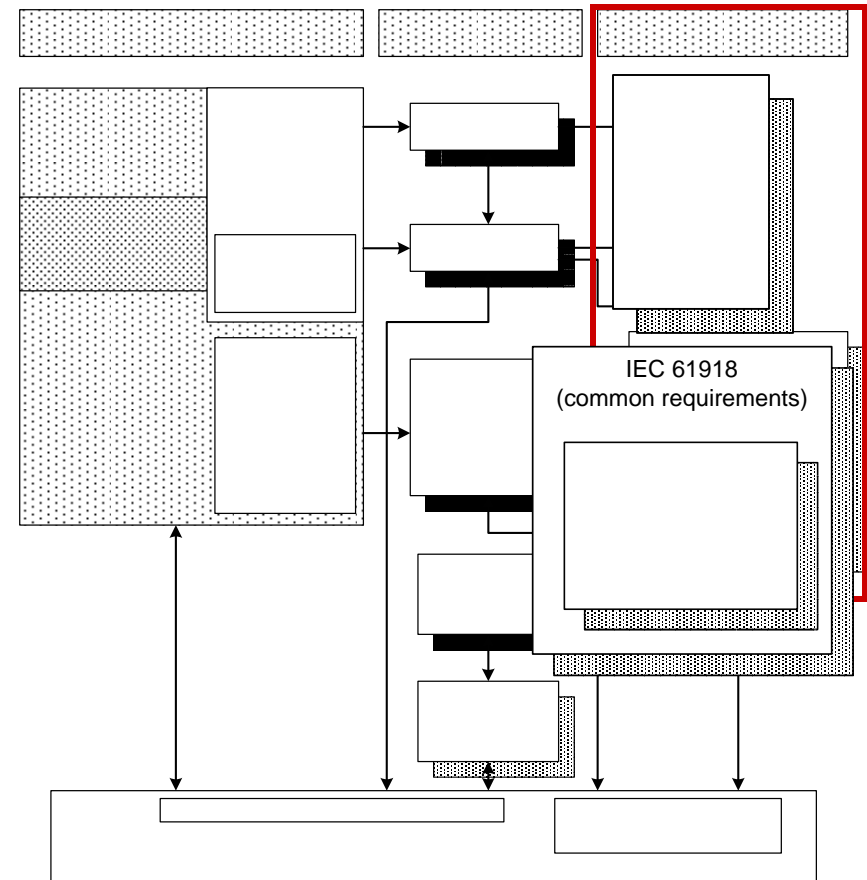
Cabling Specifications For Design

- ▶ Five Cabling standards cover requirements for components and cabling systems
 - International Standards
 - ISO 11801
 - ISO/IEC 24702
 - IEC 61158 and IEC 61784-1,2
 - Two National Standards
 - TIA 568 (includes restructure), TIA 569 & TIA 606, TIA 607a
 - TIA 1005



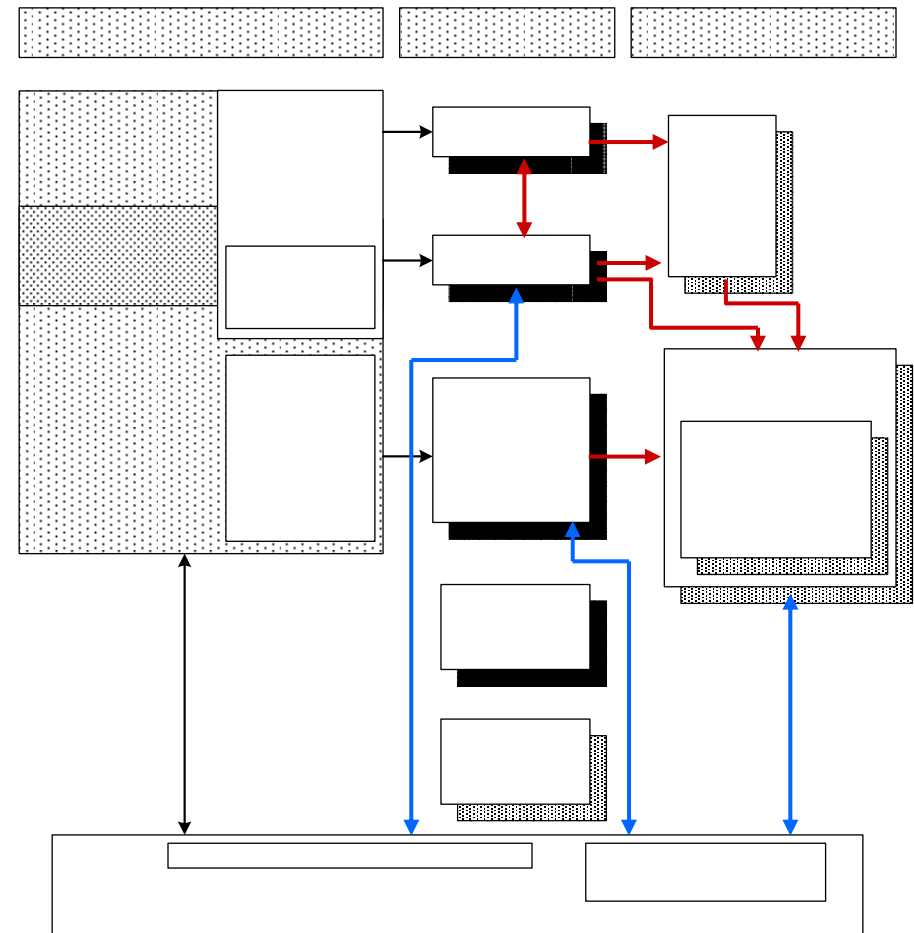
Cabling Installation

- ▶ Installation has been primarily subject for the International Standards
 - ISO/IEC 14673 series written under ISO/IEC JTC1/SC25/WG3/CITG
 - Covers
 - » Commercial
 - » Industrial
 - » Data centers
 - IEC 61918
 - IEC 61784-5-X written under IEC/SC65C/JWG10
 - Covers field bus and industrial Ethernet



Standards Working Relationships

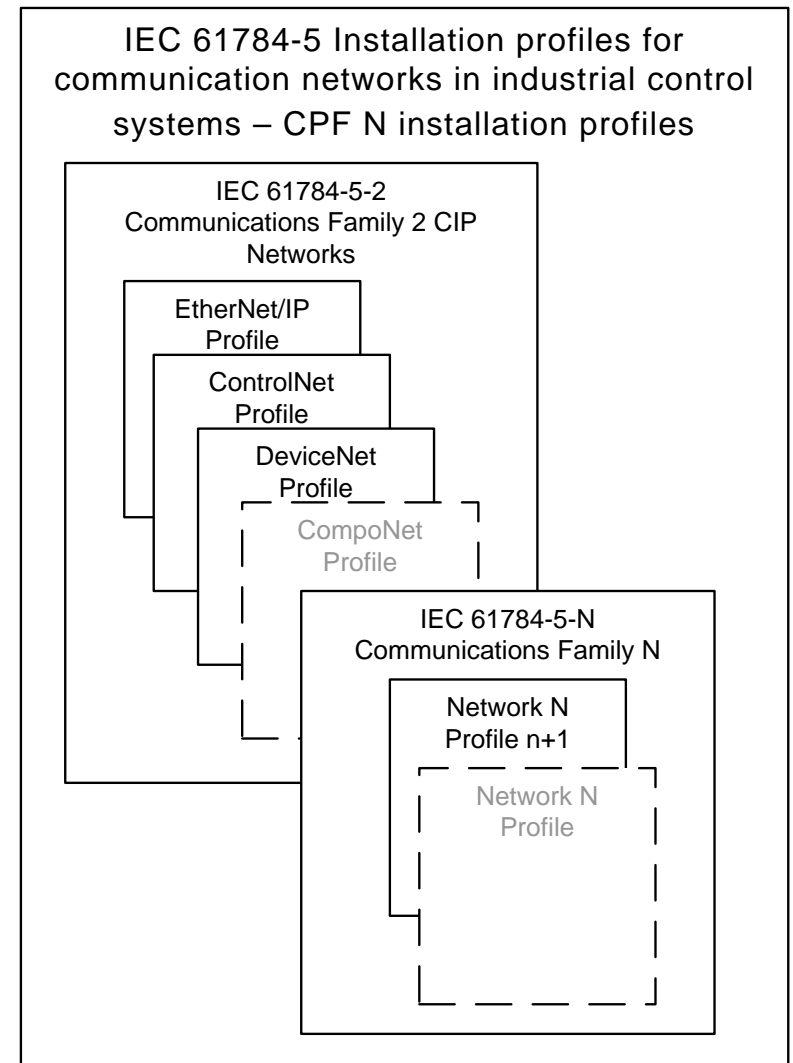
- ▶ National and international standards work together through the US-TAG
- ▶ Consortia work together through Liaisons and MOUs and cross licensing



Closer Look at IEC 61784-5-2

- ▶ Installation Profiles for;
 - EtherNet/IP
 - ControlNet
 - DeviceNet
 - Other Field Bus Networks

- ▶ Eligible to be added in Maintenance cycle
 - CompoNet
 - Other Field Bus Networks





Summary of Release/Maintenance Schedule

Standard	Release Date	Update
ISO/IEC 24702	October 2006	5 years POF addendum 2008
IEC 61784-5	December 2007	2 years
IEC 61918	December 2007	2 years
TIA 1005	December 2007	5 years
ODVA Chapter 8 Rev 2	November 2007	Continuous
STD-J 607 A	TBD	Currently under revision

ODVA Standards

▶ ODVA Enhancements

- DeviceNet Physical Layer
 - Test frequency for node capacitance
 - Release of B6 conformance test
 - Module Status LED
 - External power warnings for designers
 - Labeling requirements for switches and indicators
 - Connecting V- to ground warning
- EtherNet/IP Physical Layer
 - Complete replacement for Chapter 8, Volume 2 edition 1.3



CIP Common Chapter 8

- ▶ Proposed additions to CIP Common
 - Auxiliary Power Network
 - Grounding and Bonding
- ▶ MICE concept will be Proposed as a TSR

What is Common

- ▶ The following are in common with the industrial Standards
 - Support of the MICE concept
 - Balance requirements for cabling
 - ELTCTL
 - TCL
 - CA