ISO/IEC SC25/WG3 Meeting

Puerto Rico: 02-06 Mar 2015

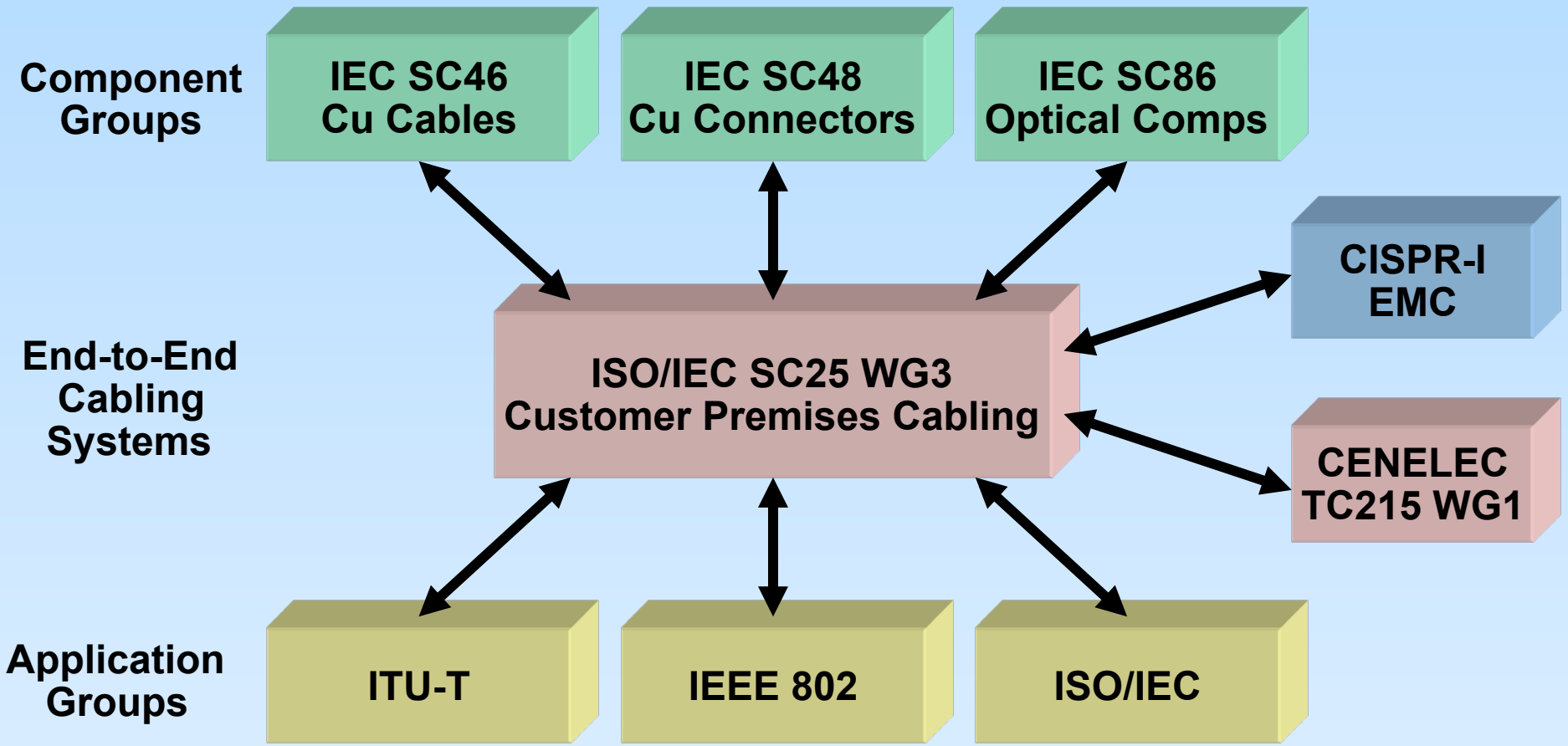
- Customer Premises Cabling -

42 Participants 15 Nations

Key Items:

1. ISO/IEC 11801 Ed.3 major revision - 2nd WD has had a thorough review and has been elevated to a CD
2. ISO/IEC 11801-9902 E2E Link Model 3rd WD issued
3. ISO/IEC 11801-9903 Matrix Model being published
4. ISO/IEC 11801-9904 NWIP out to support 802.3bz
5. ISO/IEC 30129 Bonding Networks being published
6. ISO/IEC 29125 2nd WD issued to support 802.3bt
7. liaisons sent to 802.3bp, 802.3bt, 802.3bv, 802.3bz

Process Model



Liaison with IEC Component Groups (*items of interest to 802.3*)

IEC SC46: Copper Cables

- **ad hoc formed to draft specification for a *single pair cable* to support IEEE 802.3bp Type B 40m link**
- **TR 61156-1-6 contains Cable DCR range by Category (of interest to PoE applications)**

IEC SC48B: Copper Connectors

- **IEC 60512-99-001 being extended to test connectors for mating and unmating with 1A per contact for 802.3bt**

ISO/IEC 11801 Edition 3: Generic Cabling

- existing design standards re-structured into single family:
  - ISO/IEC 11801-1 General Requirements (structure, dimensioning, channel)
  - ISO/IEC 11801-2 Commercial Office Environment (unique aspects)
  - ISO/IEC 11801-3 Industrial Environment (unique aspects)
  - ISO/IEC 11801-4 Residential Environment (unique aspects)
  - ISO/IEC 11801-5 Data Centre (unique aspects)
  - ISO/IEC 11801-6 Distributed Building Services (unique aspects)
- 440 comments received from 2nd 410-page WD review
  - 314 technical + 126 editorial
- all comments resolved at meeting and CD since issued
- CD2/DIS planned as output from next meeting in Sep 2015
- DIS planned as output from following meeting in Mar 2016

ISO/IEC 11801 Edition 3: Resolutions of Note

1. DCR/m requirement of 0.19Ω/m introduced for Cat 5e to Cat 7_A, and 0.12Ω/m for Cat 8.1 & Cat 8.2 cables.
2. Pair-to-pair channel DCRU requirement introduced of 7% or 100 mΩ, whichever is greater.
3. Minimum current capacity requirements introduced for Classes A - F_A, Class I, Class II. Each conductor within the channel shall have a minimum current carrying capacity under continuous operation of 0.75A.
4. Reference added to IEC 60512-99-001 + connector mating cycles for PoE support when unmating under load.

Power over Ethernet

- ISO/IEC TR 29125 being extended to support higher currents for IEEE 802.3bt 4-pair PoE:
  1. temp rises for Cat 5 to Cat 7_A solid conductor cables plus 0.4mm stranded cords
  2. bundle sizes up to 100 cables
  3. up to 600mA per conductor
  4. range of installation environments
- initial WD reviewed by national experts
- all comments were resolved at the meeting
- 2nd WD since issued, with CD from Sep mtg

Liaison to 802.3bp

- environmental performance requirements for cabling systems contained in ISO/IEC 11801
  - M = mechanical
  - I = Ingress (IP rating)
  - C = Climatic
  - E = Electromagnetic

  } 3 levels of severity specified
- 802.3bp Type B 40m link specifies E_1, E_2, E_3, E_4
- *MICE* regime was created by ISO/IEC SC25 WG3
- SC25 WG3 offers to extend number of levels and requests guidance on requirements

Liaison to 802.3bt

- survey of installed Class D-F_A cabling verifies pair-to-pair DCRU of 7% max for channel.
- impact to cable heating of 16% pair-to-pair DCRU in end-to-end link being studied but conductor currents of up to 750mA supportable.
- ISO/IEC 29125 models bundle size, cable types & installation conditions. Visual inspection will identify installation conditions, then model will determine max temps. Mitigation procedures are provided to reduce temps if required.
- ISO/IEC 29125 Ed.2 planned to be a technically complete CD Mar 2016 & approved Sep 2016.

Liaison to 802.3bv

- guidance provided on POF standardisation
  - OP1 (1.00mm step-index) specified in ISO/IEC 11801
  - OP2 (0.49mm step-index) specified in ISO/IEC 11801

Category	Maximum attenuation dB/km (see Note 1)			Minimum modal bandwidth MHz•km (see Note 2)		
	650 nm	850 nm	1 300 nm	650 nm	850 nm	1 300 nm
OP1 (See Note 3)	180	na	na	4	na	na
OP2	100	33	33	80	188	188

  - LC connector, max loss of 1.5 dB for a mated pair
  - little POF expertise exists in ISO/IEC and IEC
  - POF standards activity is also very low

Liaison to 802.3bz

- NWIP launched to qualify installed cabling to support 2.5GBASE-T and 5GBASE-T
- expected to be similar to ISO/IEC TR 24750
  - qualification of installed cabling for 10GBASE-T
  - extended frequencies plus alien crosstalk
- WD planned for Sep 2015, published Feb 2017
- request for input/requirements for 802.3bz

Future Meetings

ISO/IEC SC25 WG3	07-10 Sep 2015	Milan
ISO/IEC SC25	11 Sep 2015	Milan
ISO/IEC SC25 WG3	29 Feb-04 Mar 2016	Mexico
ISO/IEC SC25 WG3	10-13 Oct 2016	Frankfurt
ISO/IEC SC25	14 Oct 2016	Frankfurt