

ISO/IEC SC25/WG3 Meeting

Kista, Sweden: 30 Sep - 03 Oct 2013

- Customer Premises Cabling -

Key Items:

1. ISO/IEC 11801-99-1 40GBASE-T Cabling progresses
2. 40G Cable & Connector Standards evolving in IEC
3. ISO/IEC 14763-3 Optical Fibre Testing DIS approved
4. ISO/IEC 11801 Edition 3 NWIP is being launched
5. CENELEC assessment of cable heating reported
6. Liaison to IEEE 802.3 on 40GBASE-T Cabling
7. Liaison to IEEE 802.3 on PSM standardisation
8. Liaison to IEEE 802.3 on cable EM qualification

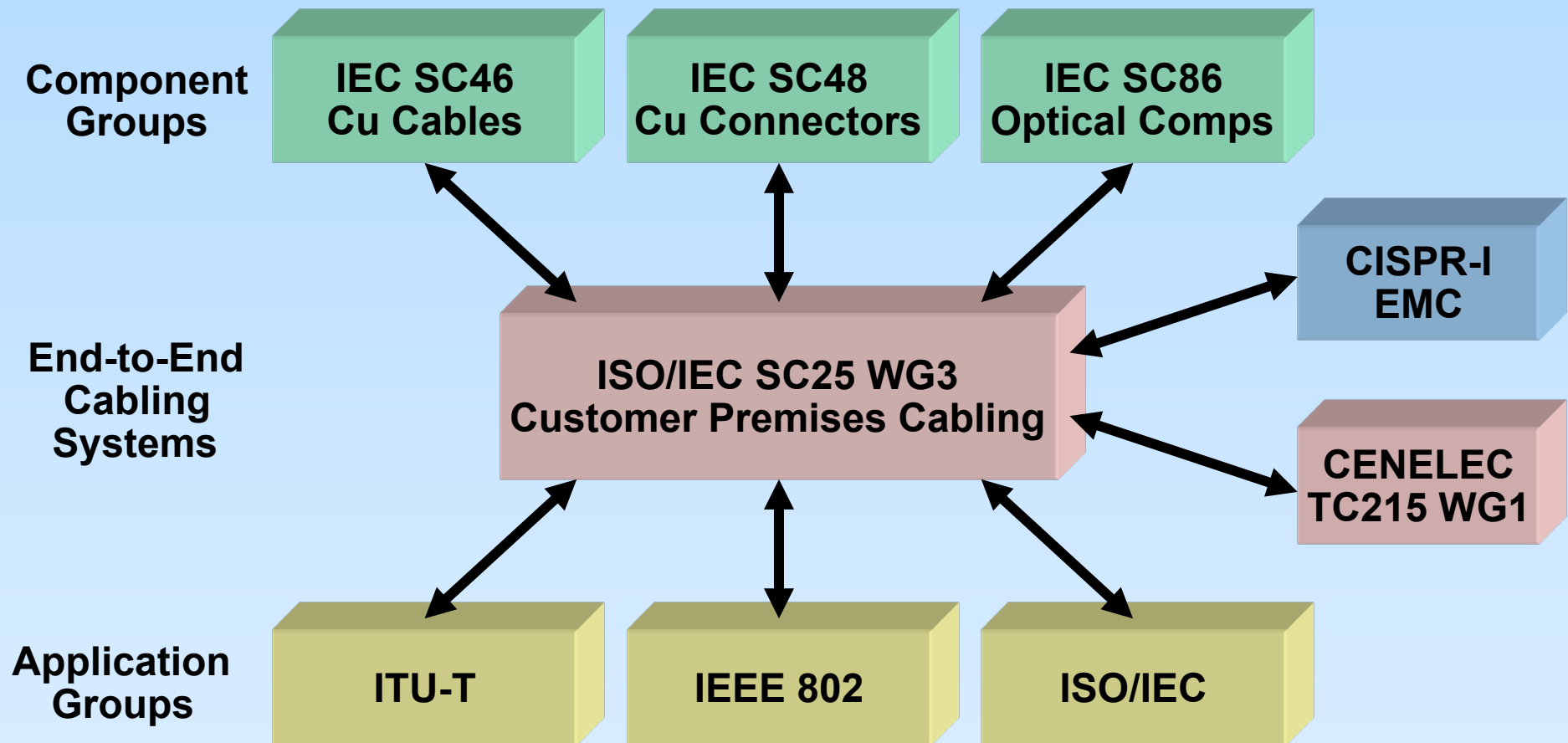


61 Participants 20 Nations

PSM = Parallel Single Mode

EM = Electro-magnetic

Process Model



ISO/IEC 11801-99-1 40GBASE-T Cabling Guidelines

- ISO/IEC TR 11801-99-1 2nd PDTR had a positive vote
- 350 national comments received, mostly technical
- all comments resolved, resolutions being implemented
- significant technical change, with *reduced differences* between Class I, Class II and TIA Cat 8 specifications
- SC25 WG3 sec. to judge whether to issue DTR by 15 Dec
- IEEE 802.3bq also invited to participate in next review
- response to be addressed at Feb 2014 SC25 WG3 meeting

ISO/IEC 11801-99-1 Deliverables

Performance Requirements
for 30m, 2-conductor Channel

Legacy Cat 6 _A Components to 500 MHz	Legacy Cat 7 _A Components to 1000 MHz
Legacy Cat 6 _A Components to 1,600 MHz*	Legacy Cat 7 _A Components to 1,600 MHz*
Enhanced Cat 6 _A Components to 1,600 MHz*	Enhanced Cat 7 _A Components to 1,600 MHz*
Tutorial on Channel Capacity, Assumptions, other PHY-related	

* Upper Frequency of 2 GHz For Further Study

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Performance Requirements
for 30m, 2-conductor Channel

Legacy Cat 6 _A Components to 500 MHz	Legacy Cat 7 _A Components to 1000 MHz
Legacy Cat 6 _A Components to 1,600 MHz*	Legacy Cat 7 _A Components to 1,600 MHz*
Category 8.1 Components to 1,600 MHz*	Category 8.2 Components to 1,600 MHz*
Tutorial on Channel Capacity, Assumptions, other PHY-related	

Next Generation
Cabling for 40G

* Upper Frequency of 2 GHz For Further Study

ISO/IEC 11801-99-1 Deliverables

Performance Requirements
for 30m, 2-conductor Channel

Legacy Cat 6 _A Components to 500 MHz	Legacy Cat 7 _A Components to 1000 MHz
Legacy Cat 6 _A Components to 1,600 MHz*	Legacy Cat 7 _A Components to 1,600 MHz*
Class I Channel to 1,600 MHz*	Class II Channel to 1,600 MHz*
Tutorial on Channel Capacity, Assumptions, other PHY-related	

Next Generation
Cabling for 40G

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Cable Standardisation in IEC SC46

- **NWIPs approved for cables for 40G Class I & II channels**
- **CDs for IEC 61156-9/10 for Cat 8.1/Cat 8.2 cables to 2GHz**
- **data being gathered to support field testing up to 2GHz :**
 1. **channel and PL configurations**
 2. **supported connector types**
 3. **pass/fail limits**
 4. **test accuracy requirements**
- **IEC stds to characterise electromagnetic performance of cable forwarded to IEEE 802.3bp RTPGE group**

Connector Standardisation in IEC SC48B

- **NWIP approved to define Cat 8.1 RJ45 connector with upper freq. of 2GHz (IEC 60607-3-81 CD circulated)**
- **NWIP circulated to define Cat 8.2 GG45 connector with upper freq. of 2GHz (to be IEC 60607-3-82)**
- **IEC 61076-3-104 Ed.3 (*Tera*) connector being revised with upper freq. increased to 2GHz**
- **NWIP being prepared to revise IEC 61076-3-110 (ARJ45) connector to increased upper freq. to *at least* 2GHz**
- **IEC 60512-28-100 Measurement & Test Procedures upper freq. being increased from 1GHz to 2GHz**

ISO/IEC 14763-3 Testing of Optical Fibre Cabling

- ISO/IEC 14763-2 2nd Edition DIS was approved
- 200 national comments received, mostly editorial
- comments resolved at meeting, resolutions to be implemented in new draft to be circulated as FDAM
- resolutions relating to *measurement uncertainty* to be implemented *ffs* due to lack of maturity
- ISO/IEC 14763-3 Am. planned once *measurement uncertainty* topic has been fully characterised

Standards Support for Parallel SMF

➤ **liaison forwarded to IEEE 802.3 re: existing/emerging stds:**

1. **ISO/IEC 24764 specifies MPO connector for >2 SMF/MMF fibres**
2. **ISO/IEC 14763-2 defines admin & polarity mgmt for PSM & PMM**
3. **IEC SC86B is developing product specs on behalf of SC25 WG3 to ensure intermateability of 12 fibre and 24 fibre MPO connectors**
4. **IEC SC86A has published recommendations for colour coding SMF and MMF optical fibre ribbon**

ISO/IEC TR 17979-1-1 Twinax Cable Assemblies

- **intended to support IEEE 802.3 “CR” twinax links**
- **IEC SC46 initiated NP to specify twinax cables**
- **IEC SC48B lack of interest to specify connectors**
- **this project is therefore at risk of cancellation**
- **relevant parties are being informed of situation**

ISO/IEC 11801 Edition 3

- **NWIP being circulated for ISO/IEC 11801 3rd Edition**
 - **ISO/IEC 11801-99-1 Class I & Class II channels in scope**

- **list of *proposed* changes being compiled for Ed.3:**
 - **withdraw generic OF classification scheme (OF-300, etc)**
 - **update POF fibre types (for ISO/IEC 15018)**
 - **introduce new cabling architectures for data centre**
 - **introduce matrix model to relate components, links, channels**
 - **introduce MICE requirements**
 - **introduce Healthcare cabling**

Incoming Report from CENELEC TC215

- **European cable heating study indicates higher increases than previously reported for same bundle size & current**
 - still within 10deg.C cable temp rise assumed by 802.11at
- **existing DC loop resistance and current carrying capacity specifications are *inadequate*:**
 - need to modify DC loop resistance requirements to address the cable conductors rather than the channel
 - need for *ohms/m* requirement for the cable
 - current carrying capacity requirements also need to take account of the installation environment

Future Meetings

ISO/IEC SC25 WG3	25 Feb - 01 Mar 2014	Kyoto, Japan
ISO/IEC SC25 WG3	15 - 18 Sep 2014	China
ISO/IEC SC25	19 Sep 2014	China
ISO/IEC SC25 WG3	02 - 06 Mar 2015	Belgium