

# **ISO/IEC SC25/WG3 Liaison Report**

## **- Customer Premises Cabling –**

**November 2022**

**James Withey – WG3 Liaison Officer**

**[James.withey@flukenetworks.com](mailto:James.withey@flukenetworks.com)**

# ISO/IEC SC25/WG3 Meeting

## Virtual: 26-29<sup>th</sup> September 2022

### - Customer Premises Cabling -

## Key Items:

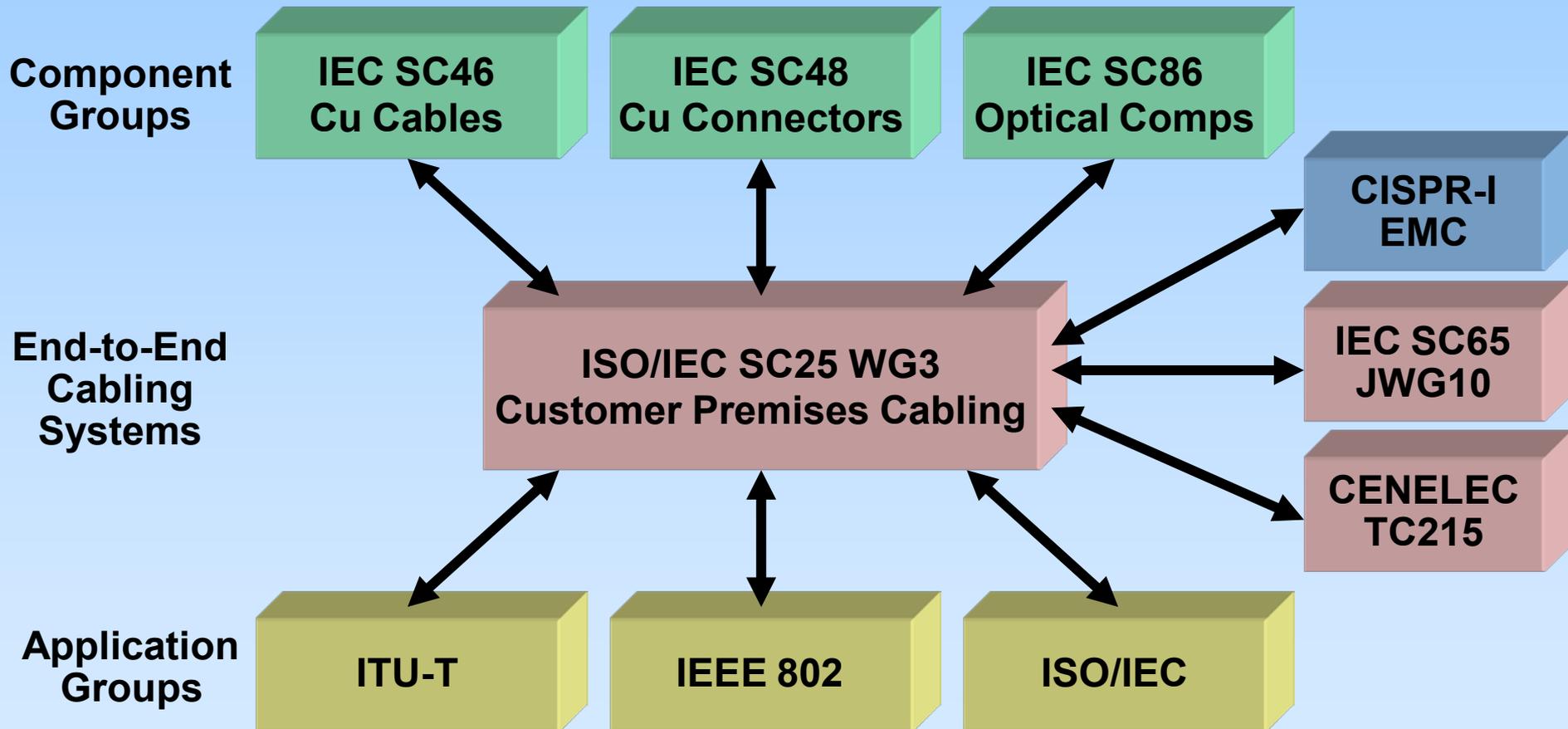
1. Generic single-pair cabling is being developed, with three new classes of cabling in amendments to the 11801-1 and 11801-6 standards. The -1 moves to a 7<sup>th</sup> CD and the -6 a 6<sup>th</sup> CD.
2. 0.75A cable sharing will be considered only as an engineered solution and not as generic cabling.
3. A Technical report is being prepared to provide guidance on 0.75A legacy classes cable sharing with single pair cabling.
4. A Multidrop TR is officially approved as a SC25WG3 project, but will not form part of the 11801-1 series.
5. The Physical Network Security 24383 draft gives requirements for multiple levels of security moves to a 7<sup>th</sup> CD
6. The Planning and installation standard 14762-2 and Remote powering technical specification 29125 will be updated to included considerations of single pair cabling and 2A remote powering, including cable heating considerations.
7. Cabling Sustainability 14763-5 will progress with to a 2<sup>nd</sup> CD before the next meeting.
8. The CDV of 14763-3 optical fiber testing document is being prepared
9. TR11801-9903 Models will be updated to include common and mixed mode parameters with another WD
10. A project to update the Grounding and bonding standard ISO 30129 moves to a 2<sup>nd</sup> WD.



73 Participants

17 Nations & IEEE 802.3 Delegation

# Process Model



# Meetings of SC25 WG3

- **September 26-29th 2022, Virtual**
  - **Welcomed a delegation from IEEE 802.3**
  - **Two liaison letters were sent to IEEE 802.3:-**
    - **3N 1329 Liaison from ISO/IEC JTC 1/SC 25/WG 3 on multi-drop cabling**
    - **3N 1330 Liaison from ISO/IEC JTC 1/SC 25/WG 3 on single pair cabling**

## Publications

**IEC has not published any SC25 WG3 documents since their last meeting.**

# Generic Cabling for Single-pair Applications

- **Amendments to generic cabling standards were reviewed:**
  - ISO/IEC 11801-1 General
  - ISO/IEC 11801-6 Distributed building services
- **3 classes of single-pair cabling are being developed.**
  - T1-A, 20 MHz, 1000m (Generic cabling including support of 802.3cg)
    - Split into 1000m, 400m, 250m & 100m Sub classes
  - T1-B 600MHz 100m (Generic cabling including support of other IEEE SPE)
  - T1-C Additionally 1250MHz, 100m to present additional generic opportunities
- **Consensus was reached on the topic of 0.75A cable sharing with Single pair channels.**
  - This will not be considered Generic Cabling, and will only be covered as an “engineered solution”.
    - Guidance regarding the engineered solution will be covered by a technical report (TR11801-9911)
  - Further guidance will be added regarding Heating effects at 2A.
- **A 6th CD of ISO/IEC 11801-6 Amd1 (Distributed Building Systems) will be distributed shortly.**
- **A 7th CD of ISO/IEC 11801-1 Amd1 (General) will be distributed shortly.**

# Liaison 3N 1330

- **A Liaison was drafted asking for more information about the expected use cases and configurations for SPE remote powering at 2A.**

*“In connection to our project to add single pair cabling requirements to the standard for Generic cabling for customer premises (ISO/IEC 11801-1 Amd 1), SC 25/WG 3 would like to ask IEEE 802.3 to provide guidance related to the potential use cases that are expected for remote power delivery.*

*In particular, SC 25/WG 3 requests information regarding:*

- predicted average lengths of installed cabling and length expectations for 1 pair remote powering*
- use cases for 1 pair remote powering, especially applications requiring 2 A*
- cabling structures, e.g., connected via plug or fixed cabling*

*SC 25/WG 3 would like to thank IEEE 802.3 for their assistance in providing further clarity to these topics.”*

# **Technical Report on Cable Sharing TR 11801-9911**

- **Following the consensus agreement to limit 0.75A cable sharing to engineered solutions only, SC25 WG3 accepted comments to this technical report to limit the scope to only the 0.75A cabling covered by the existing 4P classes covered by 11801-1:2017.**
- **It was also agreed that this document should cover guidance regarding prevention of interconnection of 2A and 0.75A systems (e.g. by keyed connectors, labeling or other methods)**
  - **Place holder text as added, to be developed in subsequent commenting cycles**
- **Not all the comments could be addressed due to lack of time, and interim teleconferences will held to develop the working draft.**
  - **Participation of the IEEE 802.3 delegation will be welcomed in these ad-hocs.**

# Multidrop Cabling

- **SC25WG3 is preparing a working draft for a technical report into the use of multidrop cabling.**
  - **Intended to cover 802.3cg and 802.3da.**
- **The report is intended to cover:-**
  - **Multidrop cabling components.**
  - **Implementation guidance.**
  - **Testing considerations.**
- **The project will not form part of the 11801 series as this is not point to point cabling.**
- **Work will continue with circulating of an updated working draft.**

# Liaison 3N 1329

- **A Liaison was drafted asking for more information about the bandwidth differences between differential and mixed mode parameters in 802.3cg.**

“Firstly, we thank you for your prior liaison providing update of the status of project IEEE 802.3da and confirmation of cooperation once further developed.

We are also writing to inquire more about the bandwidth differences of differential transmission parameters vs. mixed mode transmission parameters in IEEE 802.3cg.

Above 40 MHz, where the return loss could fall less than 8 dB, the significant presence of reflections makes it difficult to control the reflected mode conversion performance (TCL/LCL). Our analysis of inclusion of potential filter inductance to compensate node return loss appears to exacerbate this concern as the high frequency roll-off of return loss increases leading to excessive reflections at a lower frequency.

In light of this concern, would you be able to provide more context into why such a large mode conversion bandwidth is needed in IEEE 802.3cg and any analysis into control of these parameters in multidrop systems? Specifically, could we reduce the maximum frequency to 100 MHz or 40 MHz for all parameters? In response, could you also comment on the expected impedances in mode conversion specifications in mixing segments? More specifically, would this parameter apply to both 50  $\Omega$  transmit impedances and 10 k $\Omega$  high impedance receive impedances”

# ISO/IEC 24383 Physical Network Security

- **Comments were resolved on the ISO/IEC 24383 for physical network security including guidelines for customer premises in these areas:**
  - **Security planning**
  - **Security systems**
  - **Intelligent building systems**
  - **Administration systems**
- **The draft specifies requirements for 4 levels of security:**
  - **Open (to be based on 14763-2)**
  - **Restricted**
  - **Secure**
  - **Highly Secure**
- **A 7th CD for ISO/IEC 24383 will be distributed shortly.**

# Single pair integration into ISO 14763-2 and TS 29125

- Preliminary work has been conducted to address the changes that will be needed for single pair cabling within the planning and installation standard ISO 14763-2 and the remote powering technical specification TS29125.
- This will include:-
  - Consideration of cable heating in bundles for 2A powering
    - There will be significant length derating as result considering thermal rise
    - 2A may also greatly reduce the number of cable is in a bundle.
  - Changes to the RP levels of powering class to reflect single pair currents
- Updated working drafts will be prepared for both documents.

# ISO/IEC 14763-5 Cabling Sustainability

- **The standard for physical network sustainability requirements ISO/IEC 14763-5 work continues to develop guidelines for customer premises in these areas:**
  - **Eco-friendly cabling materials and cabling systems**
  - **Equipment and accessories that consider the environment**
  - **System resilience and lifecycles (installation and operation)**
  - **Skill sets, training and management of construction technicians**
- **The document progresses to 2nd CD.**

# **ISO/IEC 14763-3 Testing of optical fibre cabling**

- **A new edition of the fibre optic testing document is being prepared.**
- **This is intended to clarify and simplify the guidance provided by the previous edition from the perspective of the installer, and to address consistent guidance with other IEC testing documents.**
- **The new edition is also evaluating the need reference connectors and other additions.**
- **A CDV will be circulated in time for comment resolution at the March 2023 meeting**

# Other items

- A project continues to update the Grounding and bonding standard ISO 30129 and a 2<sup>nd</sup> WD will be circulated
- The project for ISO/IEC TR11801-9903 Modelling is moving forward with another working draft to add mixed mode and common mode parameters to for the 16 port model of a 4-pair system. Application Specific single pair cabling Technical report 11801-9906, which is intended to include support of 802.3dg is making a WD.
- SC25 WG3 is considering a project to provide guidance on Salz SNR modeling, to help development of cabling to support existing and future applications

# Upcoming Meetings

- **February 27 – March 3 2023, Virtual or Location TBD**
- **October 9-12 2023, in Berlin**
- **March 18-22 2024, Location TBD**
- **September 23- 26 2024, Location TBD**

# Document Access for 802.3

The main documents will be placed on a password protected area of 802.3 website

- Other documents available on request from your liaison officer.

[https://www.ieee802.org/3/private/liaison\\_docs/ISO IEC SC25/](https://www.ieee802.org/3/private/liaison_docs/ISO_IEC_SC25/)

The ISO/IEC SC25 WG3 documents provided to IEEE 802.3 are for the purposes of promoting awareness and coordination of the work of SC25 WG3 and avoiding overlaps and gaps in standardization.

The documents are covered by the circulation and distribution restrictions according to the ISO/IEC Category C Liaison relationship with 802.3. SC25 WG3 would like to encourage input from the IEEE to help make our standards better and welcomes feedback through the liaison channels.

If you have any questions about the documents provided, any other SC25 WG3 documents, or the terms under which they are provided please feel free to contact your liaison officer ([james.withey.ieee@gmail.com](mailto:james.withey.ieee@gmail.com)).

# Questions?

**James Withey**  
**Liaison Officer, IEEE 802.3 - ISO/IEC**  
**SC25 WG3**

**[james.withey.ieee@gmail.com](mailto:james.withey.ieee@gmail.com)**