

# ISO/IEC 11801-1 Amd1

## SPE channels

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- This is not an official Liaison report!
- The described single pair channels (links), backed up by IEC standards for cables and connectors, are currently discussed at ISO/IEC. These channels are presented by two experts expressing their private opinion.
- FYI: There is a standard ISO/IEC 11801-6 (information technology- generic cabling for customer premises- Part 6: Distributed building services), where an amendment in development describes an overlay network as a mixture of 4 pair and 1 pair cabling.
- FYI: IEEE802.3 link segment = ISO/IEC channel

# T1-A Channels 0.1 to 20 MHz

(ISO/IEC 11801-1 Amd1, specification per cg)

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## Channel length

- T1-A-100 100m
- T1-A-250 250m
- T1-A-400 400 m\*
- T1-A-1000 1000 m\*

## Wire diameter

- ~0.573 mm (AWG 23)
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- ~0.573 mm (AWG 23)\*\*
- ~1.024 mm (AWG 18)

\*: Similar to ANSI/TIA-568.5

\*\* : Might change to 1.024mm (AWG 18)

## Cable diameter

- T1-A-100/ -250/ -400\*\* : ~4mm
- T1-A-400\*\*/ -1000: ~9mm



# T1-B and T1-C Channels (ISO/IEC 11801-1 Amd1)

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## **Goal for T1-B-100 and T1-C-100**

Create channels with longer length (at least 100m) and higher bandwidth to build the physical base for higher data rates for future SPE channels

### **Channel length, frequency**

- T1-B-100 100m, 0.1 MHz - 600MHz
- T1-C-100 100m, 0.1 MHz-1250MHz

### **Wire diameter**

- ~0.573 mm (AWG 23)
- ~0.573 mm (AWG 23)

# SPE and PoDL

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- All presented channels (link segments) support all PoDL classes of IEEE 802.3cg
- Depending on the DC loop resistance the channel length has to be reduced to meet the requirements for higher PoDL classes.
- How this has to be specified is currently under discussion at ISO/IEC.

# How can these channels meet the long reach 100 Mb/s requirements?

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- T1-A-1000 and T1-A-400 are possible with the thick cable, when the maximum frequency would be extended to ~70 MHz (easily possible), then 100 Mb/s should have starting link values
- T1-A-100 and T1-A-250 should not change and reserved with the thin cable for 10Mb/s (with cg PHY) for IoT general usage

# How can these channels meet the 1000Mb/s requirements?

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- T1-B-100 with the thin cable up to 600 MHz:
  - This channel can support 10Mb/s, 100Mb/s and 1000Mb/s TBD
  - But does not support 1000Mb/s of IEEE 802.3bq on 40m
- T1-C-100 with the thin cable up to 1250 MHz and higher noise margin:
  - For future higher speeds and additional EMC margin
  - Does support 1000Mb/s of IEEE 802.3bq on 40m

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Questions?

**THANK YOU**