Proposed CENELEC Contribution to 10GBASE-T SG on Cabling Electromagnetics

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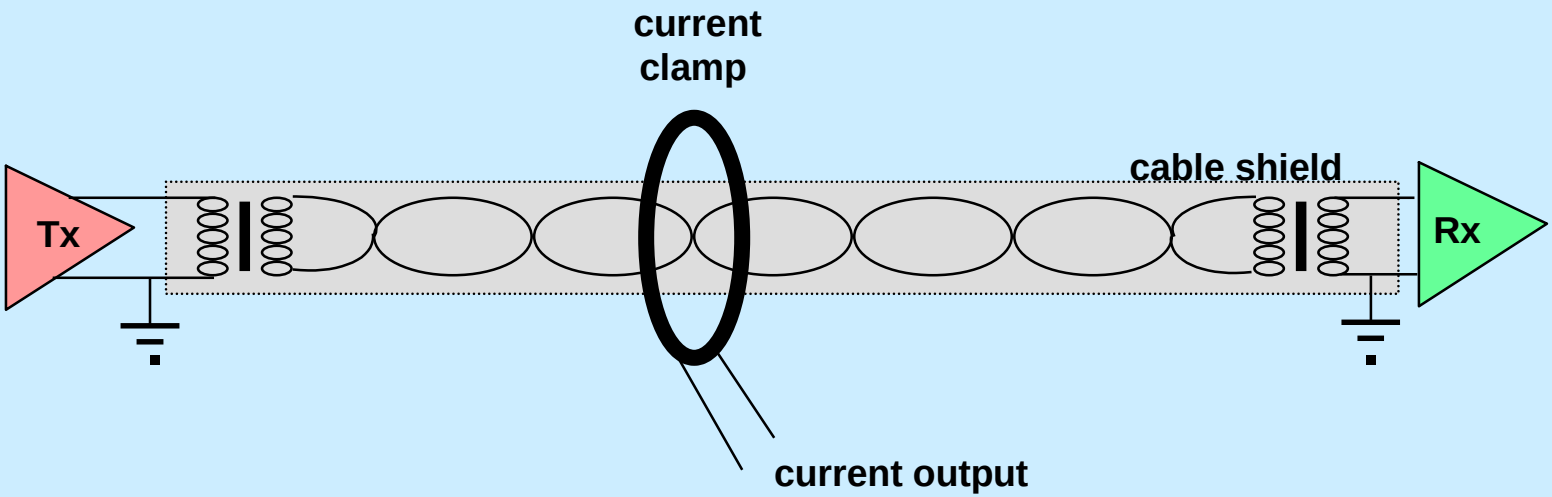
Who is CENELEC?

- *Comité Européen de Normalisation Electrotechnique*
- Brussels-based, European standards organisation
- participating experts from 19 European member nations
- CENELEC TC215 WG1 responsible for cabling systems
  - » published EN 50173: Generic Cabling Systems (equivalent to ISO/IEC 11801 2nd edition)
  - » published EN 50174: Cabling Planning + Installation
  - » closely following 10GBASE-T developments
  - » plans to define Data Centre cabling standard

What's Different about Europe?

- an equal market for screened and unscreened cabling
- significant experience with screened cabling systems
- neutral specification of electromagnetic performance
  - » Coupling Attenuation = balance + screening effectiveness
- cables specified with levels of coupling attenuation
- test methods are specified for coupling attenuation
- installation practices for screened cabling systems
- working with CISPR to characterise *cabling EMC*

Coupling Attenuation Principles



$$\text{Coupling Attenuation} = 20 \log \left[\frac{\text{common-mode signal power}}{\text{differential signal power}} \right]$$

Coupling Attenuation References

1. Relating Coupling Attenuation to Shield Transfer Impedance and Pair Balance in Data Communications Cables

   Lawrence, Hess & Pelt, IWCS Proceedings, 1997

2. Termination of a Screen in Practice: Earthing vs Grounding

   De Win & Pelt, IWCS Proceedings, 1997

CENELEC Contribution

- TC215 WG1 prepared to contribute guidance to 10GBASE-T SG on use of coupling attenuation
- objective to support screened and unscreened cabling capable of meeting alien crosstalk and RFI requirements
- TC215 WG1 next meets 24-26 June in London
- could make contribution to 10GBASE-T in July

Interested?