

Proposed modifications in IEEE 802.3REV_D2p1 in relation to optical safety in IEC 60825

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Background

Discussion on Laser Class 1 and Laser Class 1M in 802.3 documents during maintenance session of 802.3 interim meeting in Chicago, September 12 – 16, 2011

Proposals for modifications

- 1. Align wording in 802.3REV_D2p1 related to optical safety with terminology from IEC 60825-2 instead of IEC 60825-1, implying reference to Hazard Levels instead of Classes**
- 2. Follow IEC 60825-2 with respect to assessing the various Hazard Level limits (1, 1M)**

Justification

- IEC 60825-1, *“Equipment classification and requirements”*, defines the various Laser Safety Classes and its levels
- IEC 60825-1 does not address “specific” safety environment of optical transmission systems
- Therefore IEC 60825-2, *“Safety of optical fibre communications systems (OFCS)”*, has been generated, specifically addressing the safety conditions of an OFCS

Specific proposed modifications

- **Align terminology in 802.3REV_D2p1 with IEC 60825-2 instead of 60825-1:**
 - Replace “Class” by “Hazard Level”
 - Replace reference to IEC 60825-1 by reference to IEC 60825-1 and IEC 60825-2

Rationale EC 60825-2 in Annex A

Extract

Primary difference between IEC 60825-1 and IEC 60825-2

“A whole OFCS will not be classified as required by IEC 60825-1. This is because under intended operation, the optical radiation is totally enclosed, and it can be argued that a rigorous interpretation of IEC 60825-1 would give a Class 1 allocation to all systems, which may not reflect the potential hazard accurately. However, if the source can be operated separately, it should be classified according to IEC 60825-1.”

Rationale EC 60825-2 in Annex A

Extract continued

“The safety of laser products, equipment classification, requirements and user’s guide are covered by IEC 60825-1 and IEC/TR 60825-14. Part 1 is primarily aimed at self-contained products which are under effective local control. An OFCS will be safe under normal operating conditions, because the optical radiation is totally enclosed under intended operation. However, because of the extended nature of these systems (where optical power, under certain conditions, may be accessible many kilometres from the optical source), the precautions to minimise the hazard will be different from those concerning laser sources which are normally under local control.”



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THANK YOU