IEEE P802.3cg - Baseline Proposal - 01.2017 IEEE P802.3cg adhoc

Baseline Proposal for Objective 10 “Do not preclude working within an Intrinsically Safe device and system as defined in IEC 60079”

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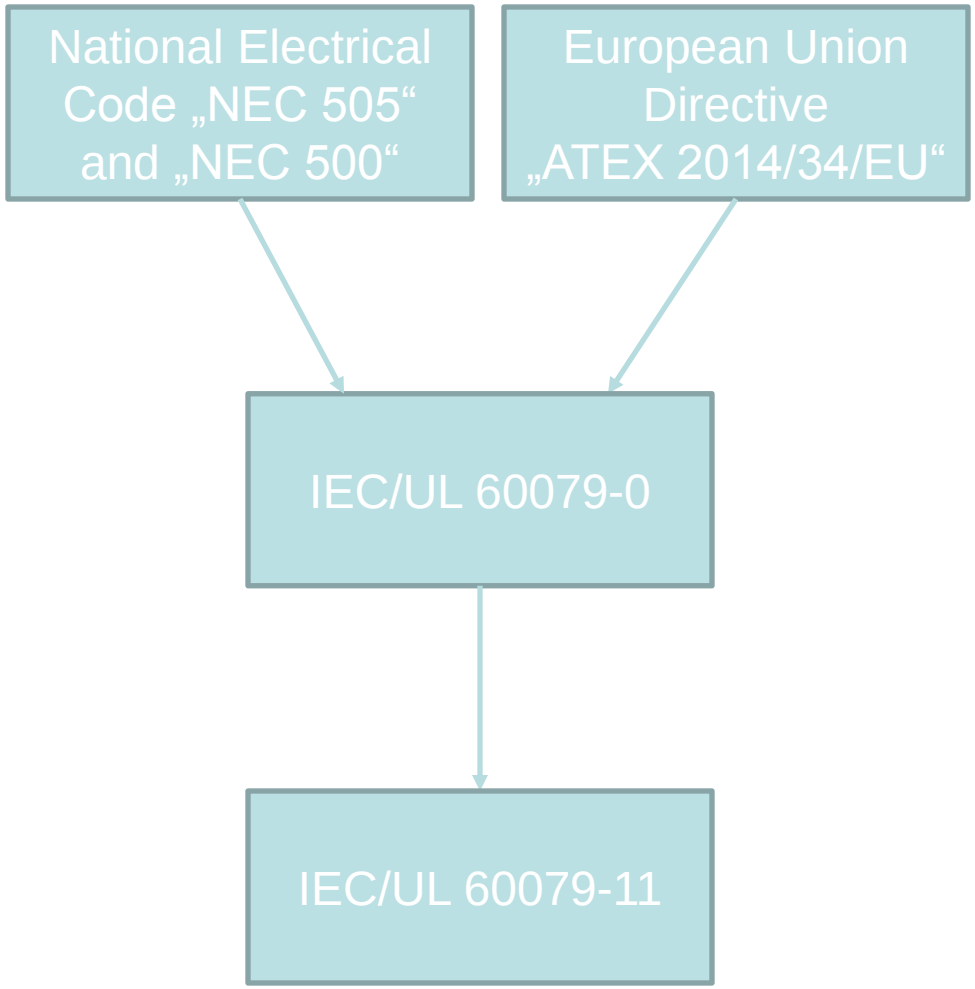
Objective Definition

Do not preclude working within an Intrinsically Safe device and system as defined in IEC 60079

The communication shall work properly and not interfere with necessary measures ensuring intrinsic safety. These measures are external to the PHY IC and out of scope for this project.

Legal Situation

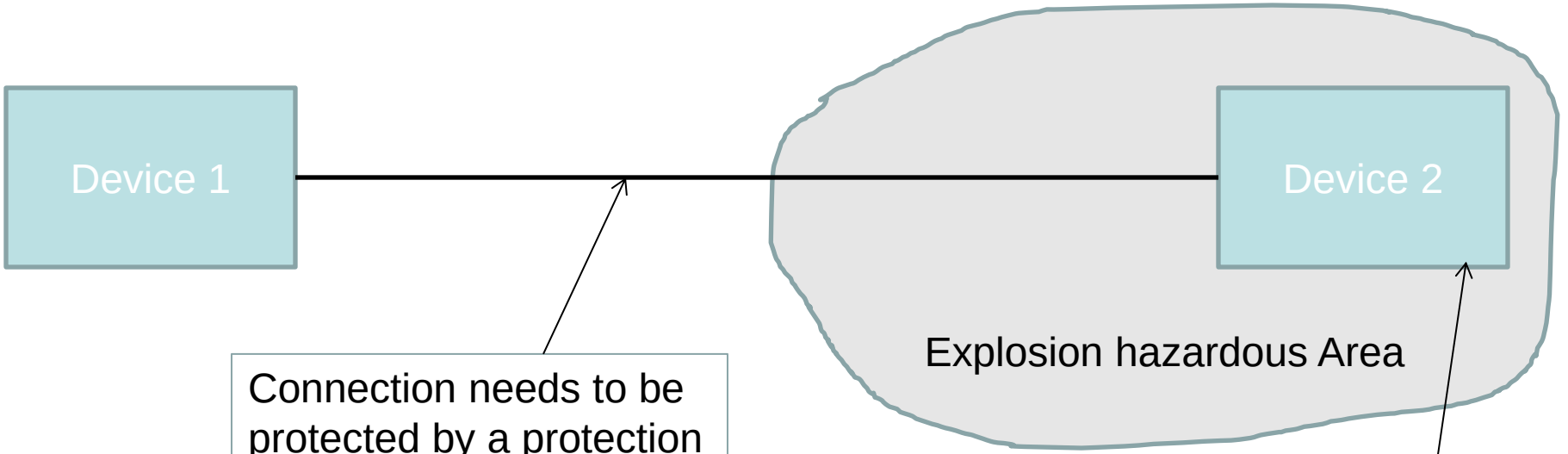


Regulates the basic requirements for Equipement, used in explosion hazardous areas

Technical description, how to achieve the requirements of ATEX 2014/34/EU or NEC50x, summary of protection methods

Detailed technical description of the protection method „intrinsic safety“

Explosion Protection



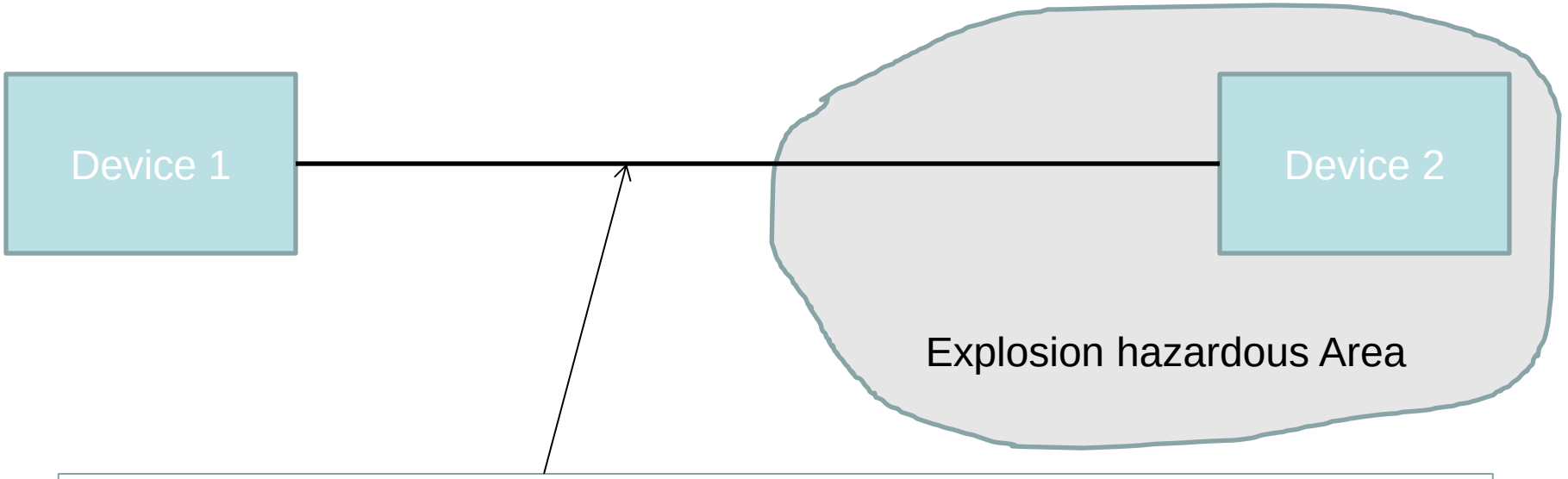
Connection needs to be protected by a protection method e.g. intrinsic safety, Increased safety…

Protection by protection method „intrinsic safety“ is the focus of this Proposal

Device needs to be protected by a protection method e.g. intrinsic safety, flameproof enclosure…

Cannot be achieved by Interface
Out of scope of this project

Explosion Protection



According to the legal situation, the system operator has to verify , that every connection is protected by one dedicated protection method, according to IEC60079-x (e.g. intrinsic safety or increased safety)

In case of the usage of „intrinsic safety“ there is a calculation of interface and cable parameters, which is reviewed by a certification institute. Start of operation is only permitted after the complete system certification. A spontaneous change of the system is not possible.

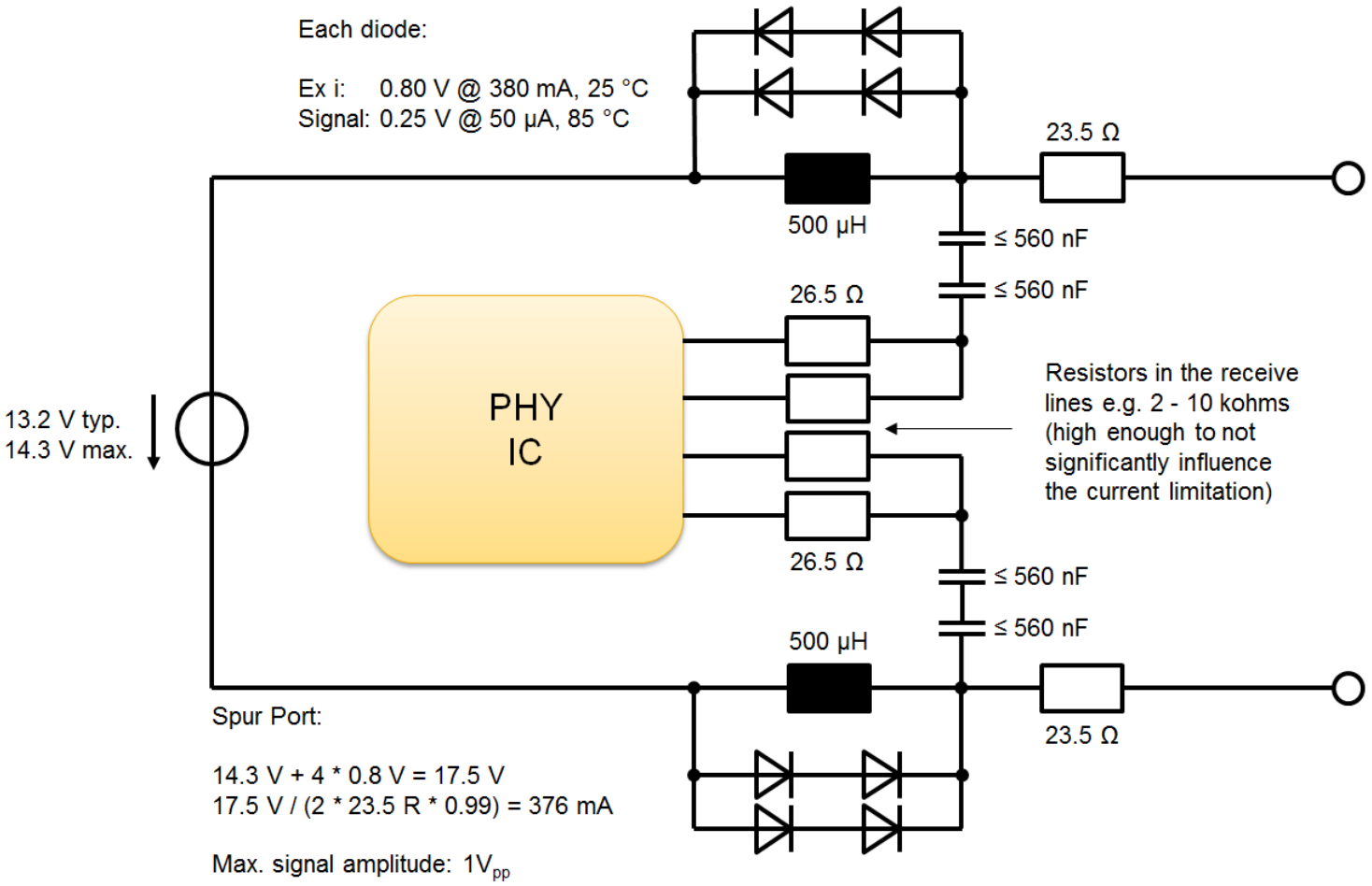
Baseline Proposal

Phy shall be able to work with:

- Optional Capacitive Coupling with Capacitors < 200 nF / Line
- Optional Signal Amplitude Reduction down to +/- 0.5 V
- Optional external Termination Resistors of 100 Ohms (= 50 Ohms / Line)
- Optional capacitive coupling of cable shield on one or two ends of the cable (< 5 nF)

Remark: None of these features have to fulfill special reliabilty requirements. All safety relevant features have to be added by external circuits and are out of scope of this IEEE-project

Exemplary Realisation



Questions?

Thank you!