Redundant Power over Ethernet Concept

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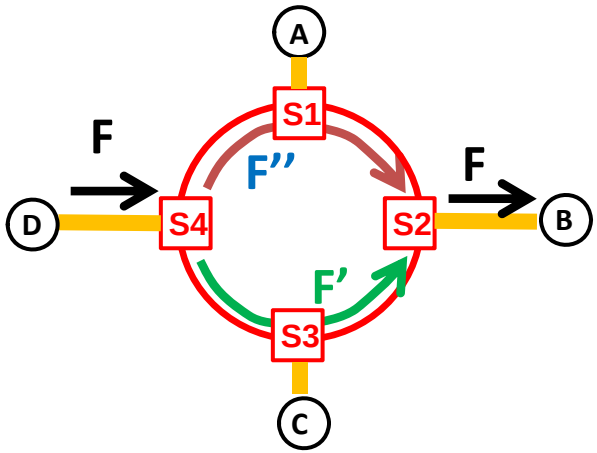
Seamless redundancy 802.1CB (TSN)

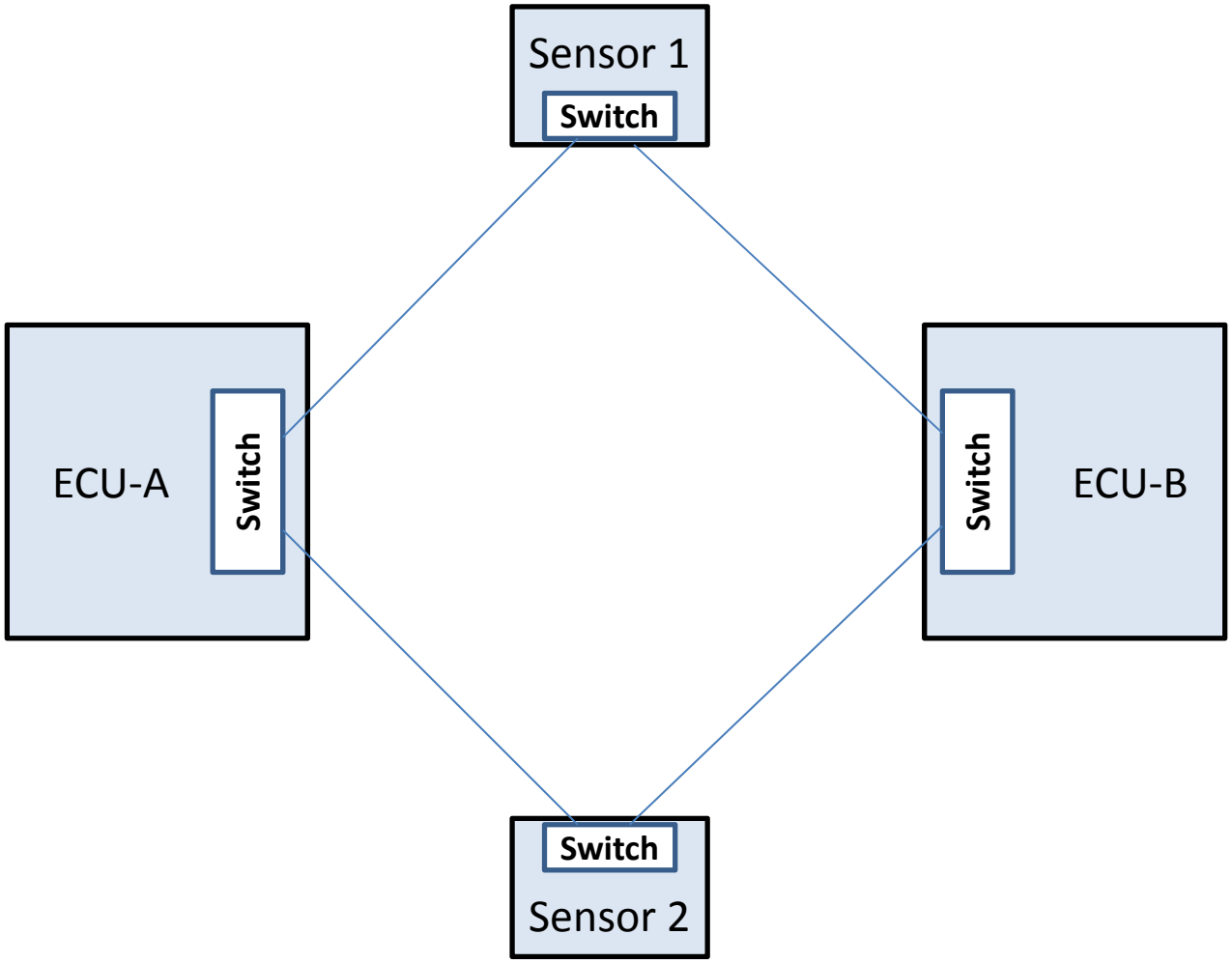
- Send Ethernet frames redundantly (in parallel) on two independent paths. (Simplest case: Ring)
- Zero recovery time in case of a fault affecting a single path (e.g. link failure, switch failure)
- Frame Replication & Elimination
- Elimination:
  - Today: Ethernet Stack,
  - Future: Switches (802.1CB)



Concept presented at TSN meeting (IEEE 802 Plenary, July 2012)
http://www.ieee802.org/1/files/public/docs2012/new-avb-kleineberg-jochim-seamless-redundancy-0712

Possible Fail Operational architecture (example)

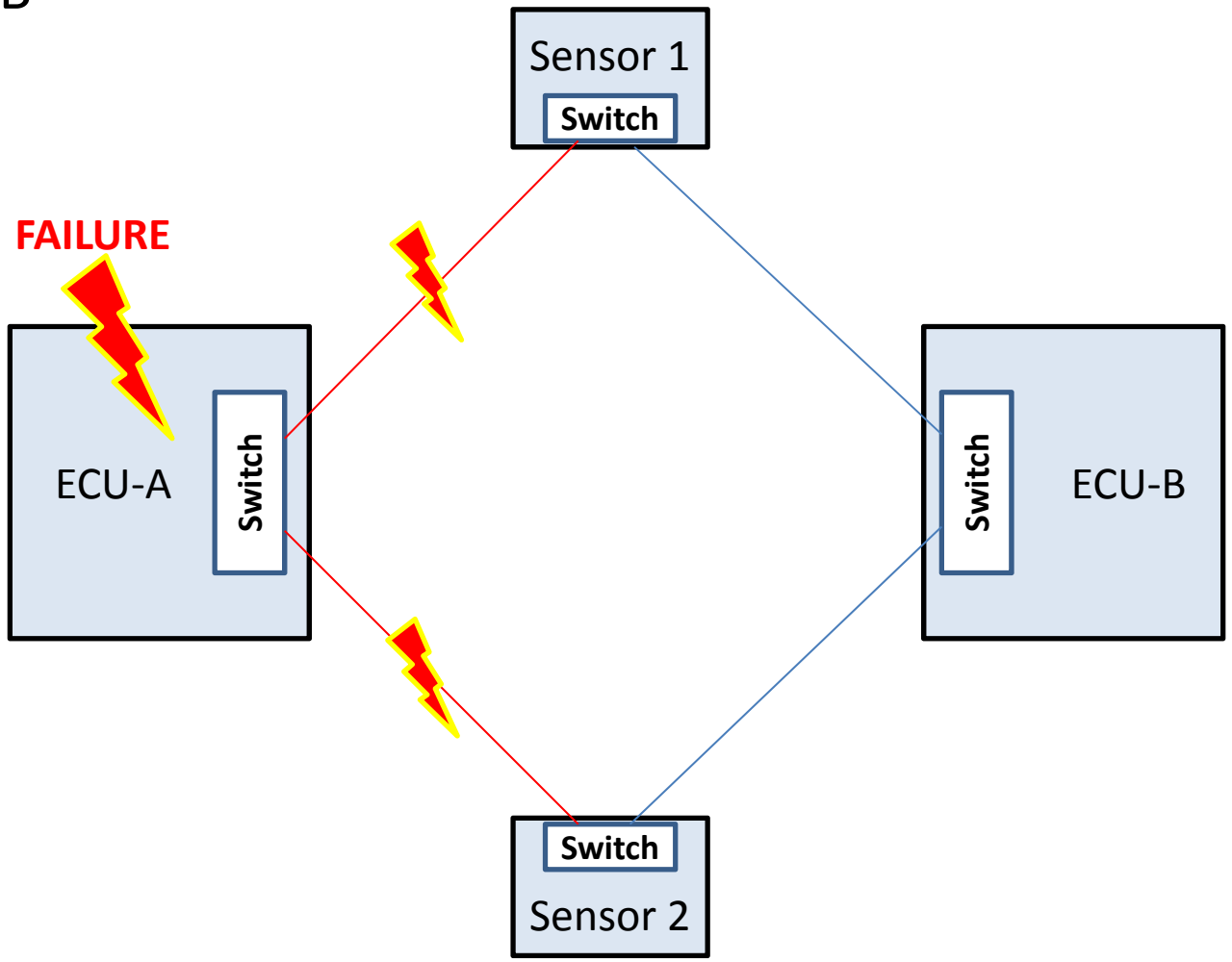
- Dual duplex concept
- Redundant ECUs and Redundant sensors
- Redundant AVB Ethernet Ring concept (TSN)



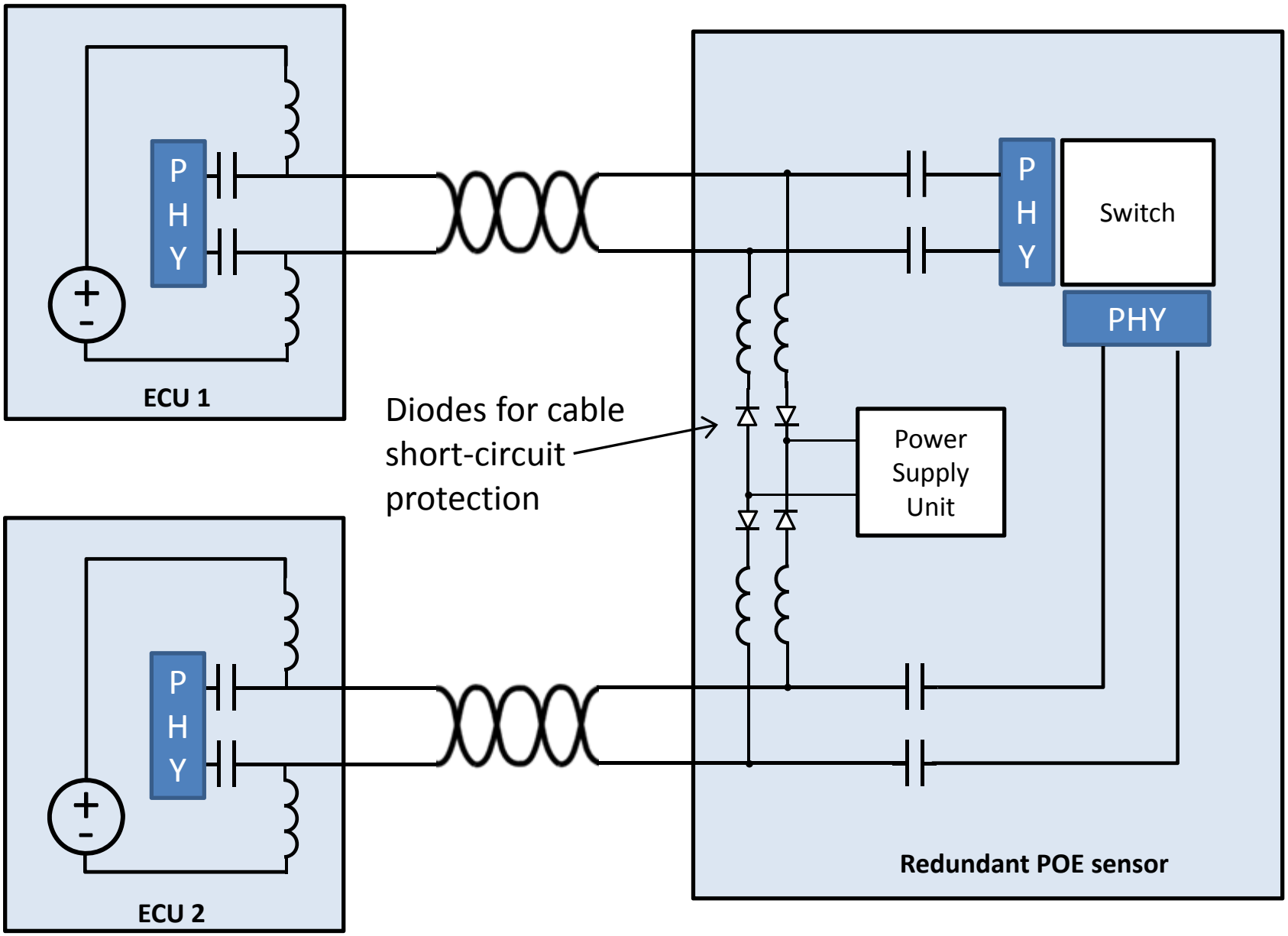
In case of failure

e.g., ECU power supply failure, two communication lines will be missing.

Need: keep both sensors powered and able to communicate with ECU-B

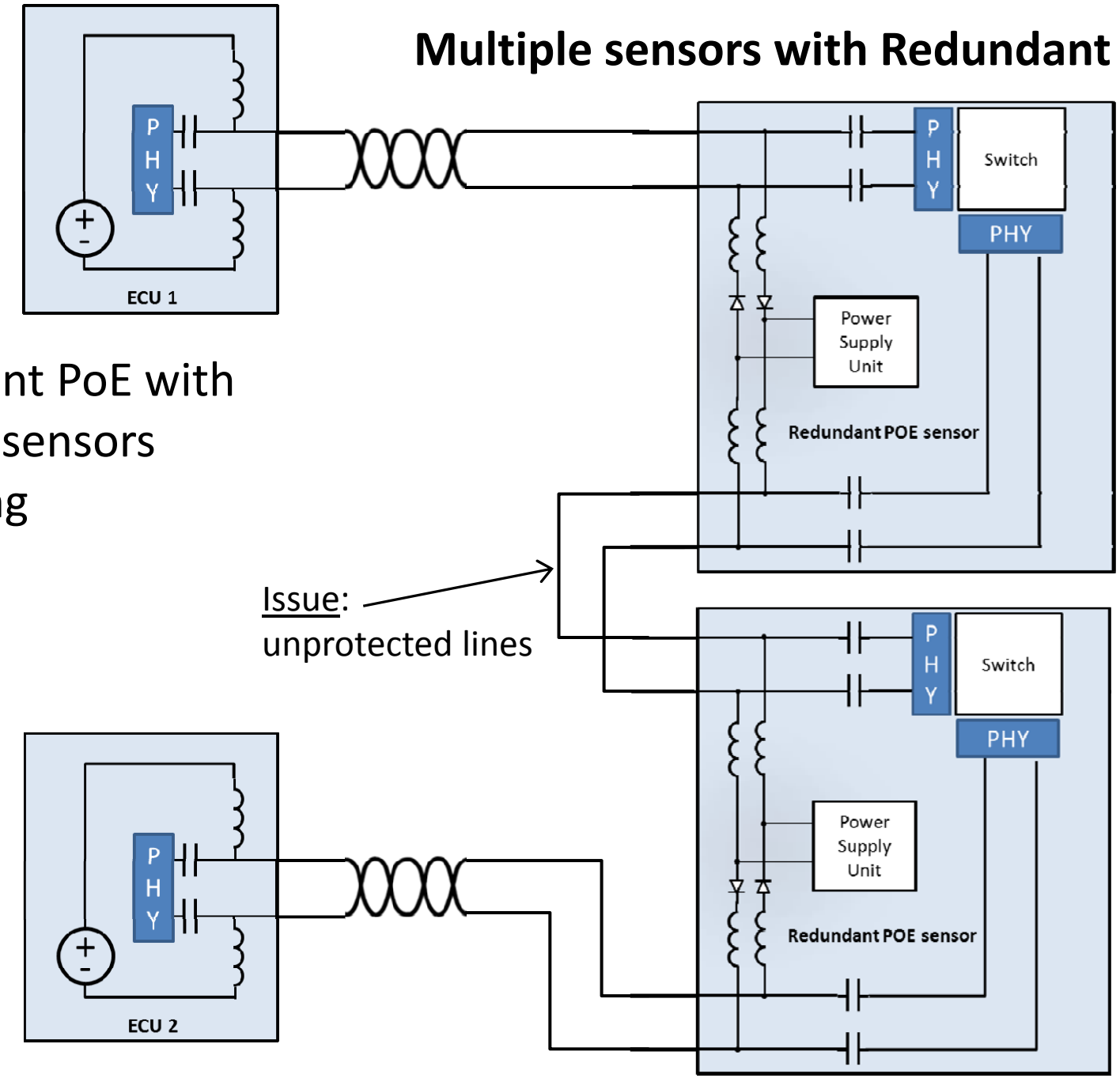


Proposal: redundant PoE



Multiple sensors with Redundant PoE

Redundant PoE with multiple sensors in the ring



Discussion & Feedback

- Are there any technical issues with the presented concept?
- Are there any implications to the PHY and 802.3bu standard?