

Why the EPD/LPD information in IEEE 802, IEEE 802.1AC, and 802.1Q must be fixed

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Background

- Many thanks to Roger Marks for bringing up the problems.
- We have been working together on defining the issues and possible solutions.
- We are not yet in full understanding and agreement, but are approaching it.
- There are many ways in which the three documents could be improved. I'd like to coordinate any suggestions in this area with Roger before presenting them.
- This presentation is about what is **dead wrong**.

What **must** change in IEEE 802-2014

- In my opinion, likely nothing.
- There is an apparent contradiction to IEEE Std 803.3 in that 9.2.1 in 802-2014 only talks about Type/Length $<$ or ≥ 1536 , whereas 802.3 talks about $T/L \leq 1500$ (length + LLC), $1500 < T/L < 1536$ (unspecified), and $T/L \geq 1536$ (EtherType).
- However, a closer reading reveals that 802-2014 says that frames with length in the 1501-1535 range are passed up the stack to the LPD parser. Does this contradict 802.3, or does it simply specify what 802.3 leaves unspecified? Is that appropriate?

What **must** change in IEEE 802.1AC-2016

- Clause 12 opens by describing EPD media vs. LPD media. **This is wrong.**
 - All media support both EPD and LPD. “PD” stands for “Protocol Discrimination”. **It is a property of the protocol definition, not the medium.** IEEE Std 802-2014 makes this clear.
 - Rather, there are Length/Type MAC Service Data Units (MSDUs) and LLC MSDUs. The MSDU is the data parameter passing across the MAC Service Access Point (MSAP).
 - Some media (802.3) define only Length/Type MSDUs, some (802.5) define only LLC MSDUs, and some (802.11) define a parameter on the MSAP that specifies whether a given MSDU is Length/Type or LLC.

What **must** change in IEEE 802.1Q-2018

- 6.22 Talks about Length/Type media vs. LLC media. This is closer to being correct than 802 or 802.1AC, but is **still wrong**.
 - 802.11 now handles both Length/Type and LLC MSDUs across one MSAP.

How do we proceed?

- We need to develop a consensus on what terminology to use and how to describe the EPD/LPD issue across all three documents. I will be glad to work with others (e.g. Roger Marks) on a contribution on this subject. The current IEEE Std 802-2014 will provide the basis for this contribution. **Does this go to TSN or Maintenance?**
- I suggest that we proceed no further until we discuss the contribution (or others that may be offered). Then, we may generate maintenance items.

Thank you