Thoughts on 802.3da Draft Contents

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What do we need in our draft?

- 802.3da needs to specify
  - Power protocol (PSE, PD, Mixing segment characteristics)
    - New clause or clause 104?
  - Any enhancements on data + Management (Cl 30/45)
    - More options in Clause 147 or a new clause?
  - PLCA node assignment + Management (Cl 30)
    - LLDP TLVs discussed
  - TSSI support

Power Objectives

- Objectives = necessary features
  - Need proposals to accomplish the following:
    9. Specify optional plug-and-play power distribution over the mixing segment
    10. PSE shall only energize the mixing segment when at least one PD is connected
    11. Support addition and removal of a node or set of nodes to a continuously operating powered mixing segment
- Key Text Structure Question:
  - Are these enhancements to Clause 104 or a New Clause?
    - Suggest new clause – there's a lot different

Text Structure for Power

- PSE/PD Descriptions
  - Overview (write this LAST)
  - PSE characteristics
    - Types: voltages, power classes, will there be midspans?
    - Output classification power levels
    - Power supply electrical parameters (inrush, etc.)
  - Startup/detection protocols & state diagrams
    - (See Chad's preso)
  - Shutdown/adjustment protocols & state diagrams
  - Communicated parameters (LLDP, SCCP, messages)
  - Reported parameters (Registers, Management)
- Link Segment/Section Electrical Parameters
  - Resistance, capacitance, terminations
- Connector questions
  - QUESTION: is there a connector identified with POWER, or is it identified with DATA?
  - Anything special to support connecting a string of connectors?

Data Objectives

- Relevant Objectives for Data:

  1. Define performance characteristics of a mixing segment for 10Mb/s multidrop single balanced pair networks supporting up to at least 16 nodes, for up to at least 50m reach.

  2. Maintain a bit error ratio (BER) at the MAC/PLS service interface of less than or equal to 10-10 on the new mixing segment.

  3. Support interoperability with Clause 147 multidrop

  6. Select a single MDI connector

  7. Specify improvements for Energy Efficient Ethernet compared to current 10Mb/s multidrop single balanced pair networks

  8. Support operation in the noise environments for building, industrial, and transportation applications

Data – Key question

- Big choice – do we or don't we have phy mod?
  - If no, then just add a link segment, MDI, and possibly a EEE LPI encoding to clause 147.
    - No new PHY type
    - Clause 45 amendments to existing registers to add option bits
    - Clause 78 amendment just to add 10BASE-T1S to EEE
  - If yes, then new clause, largely referencing clause 147 is most likely
    - New PHY clause (similar structure to clause 147, but multidrop only)
    - Clause 45 amendments to add new PHY type, new registers
- Consider whether we have any sort of 'auto-negotiation' for multidrop (NOT in our current objectives)
  - This would be a new clause, new protocol, etc.

Other

- TSSI – separate clause, pretty easy
  - Need a text proposal
- PLCA assignment
  - Depends on the complete structure proposed
    - If LLDP – need to identify new TLVs for Clause 79
    - Likely needs amendments to clause 30 objects
  - May need amendments to Clause 148 to describe interaction
  - If a ‘client’ is described, it needs a new clause or section of clause 148.

Summary – Big Questions to Answer

- New protocol for power = New clause. OK?
- MDI connector: does the MDI connector go with the use of power, or does it go with the PHY?
- Do we define a new PHY (and PHY type?)
  - Or do we modify Cl 147 mixing segment definitions & possibly encoding table
  - How long do we give this? (major impact on text structure)
- Does anyone have thoughts of proposing a startup ‘auto-negotiation’ for SPMD?
  - Speak up soon!
- Need detailed proposals nailed down for node assignment text and structure – it’s more than just saying ‘it’ll be LLDP’ or not...