



# Two PoE chapters vs. 1: pro's and con's. IEEE802.3bt November 2015

**Supporters:**

David Abramson / TI  
Rick Frosch / Phihong  
Shahar Feldman / MSCC

Yair Darshan

# Objectives

---

- **To discuss and try to evaluate the need and benefits of:**
  - One PoE chapter that address all PSEs and PD types or
    - This is what we have today
  - Two PoE chapters: one for Type 1 /2 and one for Type 3 /4.
    - The topic that is being questioned.

## Main arguments made lately why to separate to two chapters

- PSE vendor want to build new Types do not care to read about legacy Types.
- Now the type 1 and 2 is combined with Type 3 and 4: It is hard to read and understand t because of the insertions and deletions marks.
- If we will not try to separate we will not know the value.
- Type 1 and 2 PSE to address all PD devices
- Added text that addresses Type and 3 and 4 devices.
- We will receive many comments during comment resolution
- We may break something in Type 1 and 2 when addressing Type 3 and 4
- **This presentation will demonstrate why the above arguments are not valid.**

# Comparison

- If we stay with one chapter
- **Type 1,2,3 and 4**
- PD part =24 pages
- Clause 33.4 to 33.8=29 pages
- PSE Part =67 pages
- **Total = 130 pages**

- If we move to two chapter
- **Type 3/4**
- PD part =23 pages
- Clause 33.4 to 33.8=29 pages
- PSE part =62 pages
- **Type 1/2**
- PD part =23 pages
- Clause 33.4 to 33.8=29 pages
- PSE part =40 pages
- **Total: 92 pages**

# Why one chapters

---

- It is better that all relevant requirements will be located in one place for specific topic.
- We will be happy if all the spec was on one page correct?
- So why we need it to be splited to two page?
- To separate it two chapters is worse..

# Why one chapter– Is it the current draft that is difficult to read? Or Type 3 and 4 parts?

- The current draft 1 chapter has become difficult to read with lots of buried stuff compared to original Type 1 and 2 due too:
  - We have allowed a number of new features into the spec that are more complicated to understand than the the original AF and AT.
    - Short MPS, Auto Class, Extended Power, Operation on 4pairs, Power Demotion, Extending classification and more which all of them are Type 3 and 4 related.
  - The parts that are difficult to read belongs to Type 3 and 4.
  - **If we move to two chapters, Type 3 and 4 it will remain difficult to read.**
  - The work we need to do is to clarify Type 3 and 4 more by addressing Type 1 and 2 topics on the same page with separate sub clauses and not moving to two chapter since It will not solve anything.

# Why one chapter– If we will not try to separate we will not know the value.

- We can know if there is value of separating to two chapters before we invest the group time. If we go to two chapter just because we decided..and if we wrong.. It will be too late..and we stay with it because no body will have the energy to go back.
- It is like any other project. We can evaluate the value before we start it by doing the work on 2-4 of the most difficult pages to read. [See example darshan\\_08\\_1115.pdf](#) for quick PD evaluation.
- It can be done off line and not on the group time..
- We can not decide to go for two chapters before evaluation work is done.
- [A preliminary preparation work was done that and will be presented after November. It shows that we can simplify things and readability with one chapter.](#)

## Why one chapter – The practical reasons for one chapter

---

- Differences between types can be quickly understood
- No need to jump from chapter to chapter and no need to duplicate information
- Multiport PSE vendor often need in the same box to have Type 1, 2 3 and 4 ports on the same box. Information for PSEs is easier to understand when similar concepts are contained in the same section.
- There are many cases where there are interaction between Type 3 or 4 and Type 1 and 2 requirements is needed.
- The risk during 802.3bt work with one chapter to break something in Type 1, 2 or Type 3 ,4 is smaller because we see all information on the same page.



## Why one chapter– Almost twice the pages with two chapters compared to one chapter

---

- Clause 33 contains
  - many parts that are required for all PSE and PD types.
  - Many parts that are not depend on PSE/PD Types
  - The main information is concentrated in Tables and drawings.
  - As a result, moving to two chapters will require almost twice the pages and LESS CLARITY
  - So better to keep one chapter for all Types.

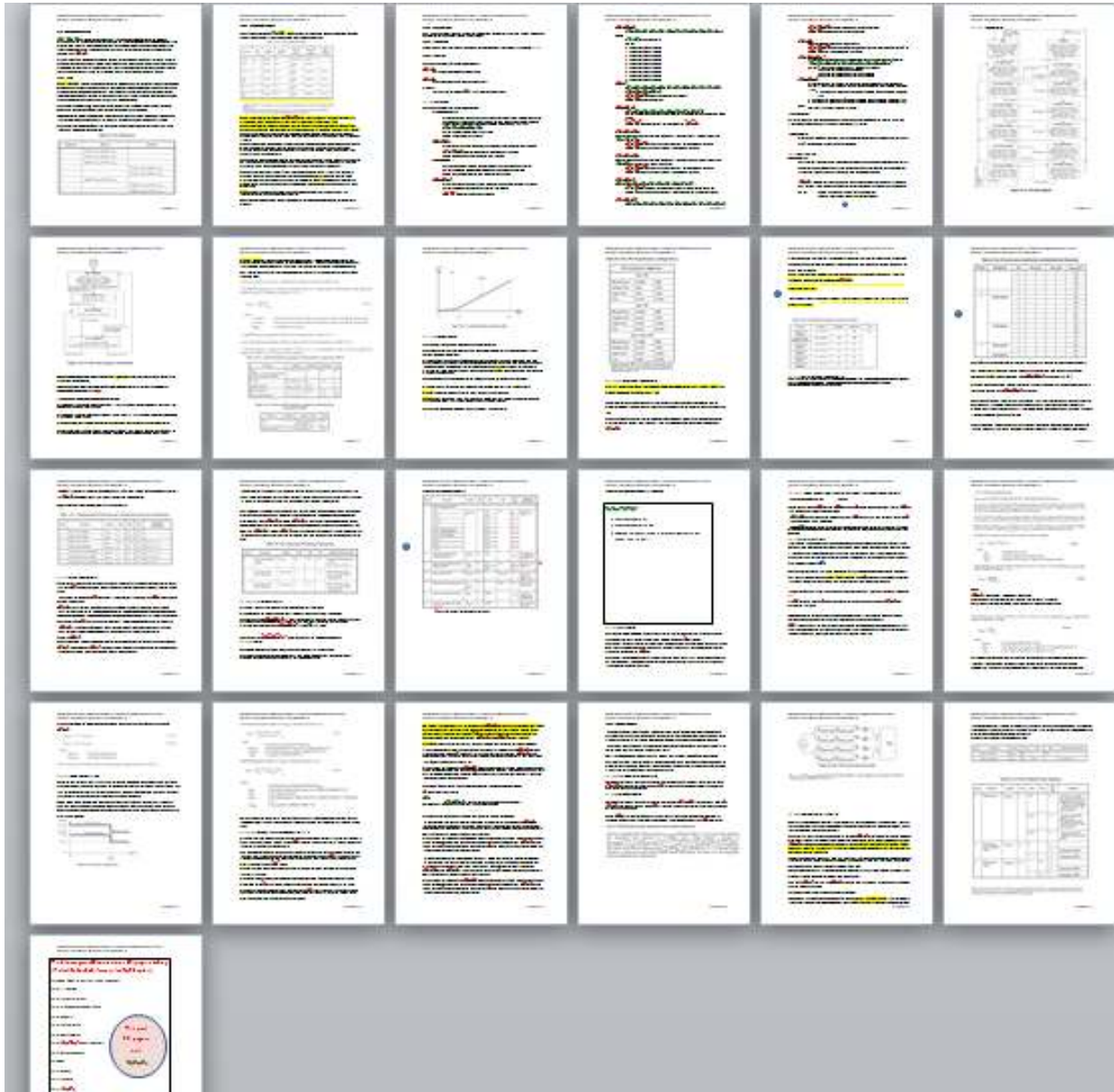
# Why one chapter– less comments during WG ballot with one chapter

- With two chapters we have two standards to review
- We will have more comments... ←
- We will need much more time
- We need to verify and jump between the chapters that we didn't break something. (it is not practical even after standard ratification)
- The probability for mistakes will be higher
- **WITH NO CLEAR VALUE → Stay with one chapter**
  - We spend more than 2 years on one chapter and the results are good and we can still improve it. See example for PD spec in darshan\_\_8\_1115.pdf

# Why one chapter - New spec reader test

- IEEE802.3bt -2012 covering All types with one chapter was shown to non PoE expert. It was hard to understand some parts of the Type 3 and Type 4 parts at 1<sup>st</sup> reading and 2<sup>nd</sup> reading and getting improving when continue to learn the subject ...and it was due to Type 3 and 4 not due to Type 1 and 2. See example in the annex.
- He was asked if the 802.3bt was splited to two chapters if it will be more clear. He said, I hardly understand the existing one, you want me to understand two?
- **For new reader one chapter** is better than two.
  - No need to jump between chapters and see differences
  - Spec may not be clear, but not because Type 1 and Type 2 is there.
  - In most case Type 1 and 2 items are small fraction of the text/table/figure....
  - We just need to do better job when we write the spec!
  - We will never be 100% perfect.
  - Always we can find somebody that will say that we could done better job.
- **better to keep one chapter for all Types.**

# Type 1 and 2 portion is negligible



- The yellow marks are text mentioning Type 1 and 2 requirements
- PD spec is 24 pages  
In my document for format used for .
- Additional 29 pages including 33.4 to 33.8 section that are common to all types.
- The are the PSE section that was not adressed yet but we show similar conclusions

# Summary

---

- One chapter has significant advantages
  - When we finish the 802.3bt all insertion and deletion marks will be gone.
  - We may need a different sub clauses for Type 1/ 2 and 3/4 to clarify the differences, in most cases we do it.
  - Preliminary evaluation work was done, show no value for two chapters. See darshan\_08\_1115.pdf
- Keep working with one chapter

# Discussion

---

---

# THANK YOU