Analysis of comments on D2.0

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Introduction

- Draft 2.0 has been online; sympathy goes to
    - Brad Booth for Clause 1, 30 & 44
    - Eric Lynskey for Clause 28 & 55.6
    - Mike McConnell for Clause 45
    - Jose Tellado for PCS and PMA sections
    - Sandeep Gupta for the PMA Electrical
    - Chris DiMinico for the Link Segment
    - Terry Cobb for the MDI and environmental specification
- The draft has been updated from D1.4
- We have ~714 comments
    - ~254 are T & TR
        - 94 are TR, 159 are T
    - ~460 are E & ER
        - 60 are ER

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Clarification on commenting instructions

- Don't mix up last name and first name
  - Chris Pagnanelli, Chris DiMinico, Alan Flatman, David James, Dieter Schicketanz, George Claseman, George Eisler, Glenn Parsons, Ilango Ganga, Juan Jover, Lee Sendelbach, Matt Squire, Paul Kish, Puneet Agrawal, Robert Brink, Sailesh Rao, Sandeep Gupta, Shimon Muller, Siavash Fallahi, Wael Diab, Walter Hurwitz

- For subclause, put in the full descriptions, e.g., 55.7.1 rather than 7.1

- For subclause, when identifying figures/tables/equations, do also put in the associated subclause number
  - For example, put: 55.7.1 Figure 55-1 do NOT just put : Figure 55-1

Comment stats by sections

- On clause 28: 116
    - TR: 11, T: 17, ER: 4, E: 84
- On clause 45: 153
    - TR: 11, T: 39, ER: 10, E: 93
- On clause 55: 398
    - TR: 71, T: 99, ER: 32, E: 196
    - On PMA electricals: 61
        - TR: 15, T: 19, ER: 3, E: 24
    - On Management: 7
        - TR: 0, T: 1, ER: 1, E: 5
    - On link segment: 67
        - TR: 17, T: 9, ER: 5, E:36
    - On MDI: 22
        - TR: 4, T: 10, ER: 0, E: 8
    - On PCS/PMA & other: 241
        - TR: 35, T: 60, ER: 23, E: 123
- On whole draft or clauses 1, 30, 30B, 44: 38
    - TR: 2, T: 4, ER: 11, E: 21

Clause 00/99

- Comment stats: Total: 17; TR: 1, T: 1, ER: 4, E: 11
- Several comments point out places where D2.0 does not follow IEEE templates or proper instructions for editing existing clauses. These comments have been listed in the following slides
- Comment 502 suggests changing the way testing for link pulse template compliance is done for 10GBASE-T. Should we consider making this change in Clause 14?
- Comment 442 requests the addition of an annex similar to that found in 1000BASE-T (Annex 40A), providing cable design guidelines

Clause 00/99 editing

#	Comment	Suggested remedy	Proposed Response
683	…titled for the changed Clauses is incorrect…	Change 'Revisions to IEEE P802.3REVam … ' to read 'Changes to IEEE P802.3REVam …'.	Accept
684	…reduce unchanged text shown in existing clauses…		Accept
301, 606	…headers are different …	…track changes to Rev802.3am … fix headers .. IEEE P802.3an DRAFT 2.0 Draft Amendment to IEEE STD 802.3-2005	Accept
303, 565	… this draft is for WG ballot …		Accept
338	Draft has no line 43		Accept

Clause 00/99 editing

#	Comment	Suggested remedy	Proposed Response
444	… apply proper templates ..		Accept
682	Follow instructions … Use Insert, change … correctly … there is no "modify"		Accept
609	… move change instructions to beginning of document and don't repeat them …	…	Accept
306	… add table of contents …		
618	…To aid the publication editor and reduce the problems of parallel projects modifying the same portions of the standard add an Editor's Note…		Accept

Clause 28 – Eric Lynskey

- Comment stats: TR: 11, T: 17, ER: 4, E: 84
- Major items or issues
  - PICS renumbering (Comment #557)
  - NLP Receive Link Integrity Test (Comment #459)
  - Link Test Pulse template test (Comment #543)
  - Local or global use of extended next page (Comment #604)
  - Usage of multiple extended next pages (Comment #599)
  - Need to improve text describing when/how extended next pages are used
- Editorials to discuss in Task Force
  - 17, 180, 291, 307

Clause 28 – Eric Lynskey

- PICS renumbering (Comment #557)
    - Can PICS from existing clauses be renumbered?

- NLP Receive Link Integrity Test (Comment #459)
    - Do we remove this test for 10GBASE-T?

- Link Test Pulse template test (Comment #543)
    - Do we change test for 10GBASE-T?

- Local or global use of extended next page (Comment #604)
    - Do we allow other selector fields (1394, 802.5…) to also use extended next pages?

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Clauses 1, 30, 44; Anx. 30B – Brad Booth

- Comment stats: TR: 1, T: 3, ER: 9, E: 13
- Major items or issues
  - Comment #236: delay parameter
- It is proposed that we approve all ER comments
- Proposed we reject the following
  - Beyond scope: 61, 62, 63
  - Table: 616

- Comment #236 should be resolved by the normative comment on Clause 55 delay parameters

Clause 45 – Mike McConnell

- Comment stats: TR:11 , T:39 , ER:10 , E:93
- It is proposed that we deal with ER comments as follows:
  - Approve comments: 481, 260, 624, 622, 620 ,625, 623
  - Disapprove comments: 326, 478, 280
- Major items or issues
  - TX Disable needs to be added to clause 55 (562, 522)
  - THP & Power back off register format changes (478, et al)
  - Confusion/ambiguity over operation with both clause 22 & 45 registers (677) and AN control register 7.32 (487) & AN status register 7.33 (488) usage
    - Needs discussion

Clause 45 Issues

- Register 1.130 THP setting register and 1.131 TX power level setting
  - Multiple comments (~13)
  - Both registers are read only and are currently implemented with individual bits for each possible setting.
- Recommend:
  - Better choice (suggested in several comments) would be to implement them as 3 or 4 bit fields
  - Also frees sufficient new bits to accommodate addition of status bits for polarity reversal and pair swap (per comments 522 & 562)

Clause 55.1-4, 11-12 – PCS/PMA: Jose Tellado

- Comment stats: TR: 32, T: 51, ER: 23, E: 115, Total: 221
- Major items or issues
  - Programmable precoder (THP)
  - PHY control (Start-up)
  - Delay constraints
  - Refinements to: Info Field, Power Backoff, Testing, Aux Bit
  - Wording of objectives
- It is proposed that we deal with ER comments as follows:
  - Approve comments 426, 330, 264, 263, 430, 389, 432, 591, 392, 443, 352, 351, 390, 268.
  - Disapprove comment 332.
  - Task force to discuss: Comment #427, #333 (and similar)

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Clause 55.1-4 – PCS/PMA: Jose Tellado

- Programmable precoder (THP)
  - Comments (10) with very similar suggested remedy
  - Proposed solutions to adopt programmable precoder
  - Recommendation:
    - Task force to consider ungerboeck_1_0505.pdf and the joint proposal mcclellan_1_0505.pdf for details.
    - Adopt mcclelan_1_0505.pdf. This presentation also includes the required modifications to the Info Field and PHY control to exchange the precoder coefficients
- PHY control (start-up)
  - Comments (6): 595, 670, 469, 470, 700, 471
  - Two similar proposals: powell_1_0505.pdf and mcclelan_1_0505.pdf must be considered to enhance the PHY control state machine and description.
  - Recommendation: For proponents of these two proposals to have breakout evening session to provide final recommendation

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Clause 55.1-4 – PCS/PMA: Jose Tellado

- Delay Constraints
  - Comments (4): 364, 242, 369, 370
  - Draft 2.0 specifies a maximum latency of ~10 microsec
  - Shimon Mueller and Hugh Barrass suggested reducing the max latency to ~2-2.5 microsec
  - Recommendation:
    - Task force to discuss and consider reducing the maximum latency

Clause 55.5 – PMA elec.: Sandeep Gupta

- Comment stats: 62 total. TR:14 , T:20 , ER: 3 , E: 25
- Major items or issues
    - Common mode noise rejection and cable clamp (Comment # 363, 274, 354, 394, 500, 421, 702)
    - Transmit PSD (Comment #272, 497, 672, 696, 690, 691, 692, 592)
    - Definition and changes to Transmit linearity and its test (Comment #579, 491, 673, 475, 495, 270)
    - Add more tests to cover immunity to external noise
        - Impulse noise levels (Comment #693)
        - Alien Xtalk rejection test for 1G noise (Comment #289)
- It is proposed that we deal with ER comments as follows:
    - Approve comments: # 270, 446, 447 (446, 447 to remove color from the draft, and 270 to spell out the acronym SFDR)
    - Disapprove: None.

Clause 55.5 – PMA elec.: Sandeep Gupta

- Common mode noise rejection and cable clamp
  - Is this required for interoperability? (Comment #421)
  - Link common mode voltage and frequency to electromagnetic field immunity test. See Terry Cobb's presentation
    - Task force to discuss/decide
- Transmit PSD
  - Changing the lower frequency mask corner at 5MHz, defining PSD at dc etc. (#690, 497)
  - Tightening the upper PSD mask by some amount (#592) or changing it drastically with Zero excess bandwidth PSD mask, specify ripple on the PSD curve (#696, 692, 691)
  - The zero excess bandwidth mask has been discussed before. After the presentation ungerboeck_1_0505.pdf and comment #592, if there is no quick consensus for tightening the mask, is this worth a breakout meeting?

Clause 55.5 – PMA elec.: Sandeep Gupta

- Transmit linearity
    - Clarify definition of the two tone test by specifying amplitudes of each tone to be equal (#491)
    - Linearity to be specified with respect to two tones only, eliminate single tones test (#673)
    - Linearity requirement should apply as a mask to all IMD products where the f in the equation is the frequency of the resulting intermodulation term (#579)
    - Recommendation: If necessary, have a breakout meeting on Thursday evening
- Add test to define tolerable impulse noise levels (Comment #693)
    - Task force to discuss/decide
- Add test to check Alien Crosstalk rejection of 1G noise (Comment #289)
    - Task force to discuss/decide

Clause 55.6 – Management: Eric Lynskey

- Comment stats: TR: 0, T: 1, ER: 1, E: 7
- Major items or issues
    - None

Clause 55.7 – Link Segment: Chris DiMinico

- Comment stats: TR:19 , T:18 , ER:5 , E:38
- Major items or issues
  - Clarification on length requirement - Comment#'s 251, 243, 420, 525
  - Noise floor- alien crosstalk specifications-Comment#'s-458, 686, 246-249
  - Link segment testing: source and load impedance tolerance, and type
    - Comment#'s 417, 504, 377
- It is proposed that we deal with ER comments as follows:
  - Approve comments: 516, 391
  - Disapprove comments: 508, 509, 520

Clause 55.7 – Link Segment: Major Items

- <u>Clarification on length:</u> recommended remedy
- Change length language consistent with 1000BASE-T

  "The transmission parameters contained in this subclause are specified to ensure that a Category 5 link segment
  of up to at least 100 m will provide a reliable medium."

- For 10GBASE-T change to:

  "A 10GBASE-T link segment consisting of up to at least 55 to 100 meters of Class E or up to 100 meters of Class
  F <u>which meets the transmission parameters of this subclause will provide a reliable medium.</u>"

Clause 55.8 – MDI: Terry Cobb

- Comment stats: TR: 4 , T: 6, ER: 0, E: 7
- Major items or issues
  - Common-mode output voltage requirement
- It is proposed that we approve all Editorial comments. In some cases the text would be removed.

Clause 55.8 – MDI: Terry Cobb

- 55.8.3.3 Common-mode output voltage
  - What is the purpose of the test?
  - And what is the correct value?

Summary