

Generating the 10GBASE-T drafts

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Introduction

- Primary task is to get enough consensus that we can generate a “good” draft D1.0 coming out of the July 802 Plenary meeting..
- Motivated by goal set by chair (B. Booth)
 - “...generate draft D1.0 coming out of the July 802 Plenary meeting...
 - ...we have 8 7 2 months in which to develop consensus AND the baseline for the first draft. ”
 - Draft 0.9 coming out of the May meeting
- The key is developing consensus on a core proposal but...
 - This covers more than PAM, coding and choice of cable
 - The “creating a draft” part of the work is substantial
- THANK YOU TO CHRIS DIMINICO FOR GENERATING A DRAFT OF THE LINK SEGMENT SECTION

What's needed in a proposal

- What's needed in a proposal so we can write the draft?
- A first cut was distributed via the reflector and is available on line at: <http://www.ieee802.org/3/an/public/material/parameterlist.xls>

Item #	Description	Current active proposals	approved
	PCS		
1	Symbol rate		
2	Modulation		
3	Frame structure		
4	Transmit encoding for FEC		
5	Transmitter bit to symbol mapping		
6	Transmit processing		
7	Transmit latency through PCS		
	PMA		
8	Transmit voltage specification		
9	Transmit pulse shaping		
10	Transmit master and slave jitter specifications		
11	Transmit linearity specifications		
12	Maximum allowable transmit distortion		
13	Transmit noise floor		
14	Transmit latency through PMA		
	Startup protocol		
15	state diagram for training		
16	Coefficient exchange if required		
17	Coefficient initialization if required		
18	Mode selection method if phy operates in multiple modes		
	Receiver performance requirement		
19	BER or FER over specified channel models	10 ⁻¹² for BER, FER??	
20	Receiver latency requirement		

Issues with parameter list

- It is not complete but is a starting point
- General
 - Can we address issues like auto-negotiation, start-up at this point?
 - Should we
 - develop multiple proposals in detail and select one or
 - Get consensus on specific issues and build a proposal from the basis of this consensus
- Specific
 - Measurable error performance should be specified as frame/packet error rate rather than BER (128 Byte, 10^{-9})
 - The standard should not specify implementation latency but should specify fundamental latency

PHY proposal details

- A first cut spreadsheet was distributed via the reflector and is available on line at:
<http://www.ieee802.org/3/an/public/material/proposalDetails.xls>
- General comments
 - We shouldn't use a spreadsheet; how will we know that the numbers are correct?
 - Consensus on specific issues is a great way to go
 - Get complete proposals and then compare them to select the right one
 - It is too early to ask for this much detail
 - Some of the information should not be requested
 - More details should be provided by proposers (PAR at various points etc.
 - You can never capture the full details in one spreadsheet
- Specific comments
 - Change background noise from -150dBm/Hz to -145dBm/Hz and have this include non-idealities of implementation (residual NEXT, FEXT, Echo, Phase jitter)
 - In channel model #4, why does ANEXT get "better" for longer lengths
 - Jitter tolerance for transmitter should be specified, not for receiver
 - Crane test is not an appropriate measure
 - We don't know how to go from TX spectrum to EMI compliance tests
 - In addition to EMI, there is a European immunity to EM fields test that should be included
 - Specify Tx power rather than voltage and vice versa
 - Too many/too little implementation details have been requested
 - Some items requested depend on performance and specs of magnetics
- More?

PHY proposal details

- Have received spreadsheets from:
 - AIST/Hitachi
 - NEC
 - Sailesh Rao
 - Solarflare
 - Teranetics
- Multiple reminders have been sent



Microsoft Excel
Worksheet