Copper Sub Task Force Status Report and Work Plan

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Copper Recap

- Big progress in Vancouver
  - LR PHY decided
  - Encapsulation decided
  - Adopted basis for D1.3 of Clauses 61, 62, 62A, and 63
- Other SDO's making significant progress
  - T1E1.4 adopts EFM-aware test plan for VDSL
  - ITU-T Q4/15 reaffirms goal to make VDSL decision; adopts July timeframe
  - Both groups doing what we requested ☺
  - Should provide significant input on 10PASS-T PHY decision

Goals for the week

- Review proposed responses to comments drafted by Wael, Michael and editing team
- Resolve comments
- Adopt basis for D1.4
- Generate communication letters to T1E1.4 and ITU-T Q4/15

Schedule for week

- Tuesday
  - Evening session on Clause 45-copper
- Wednesday all-day

Comments Submitted

Clause	E	T	TR	Open
61	89	55	5	1 (TR, D/U)
62	32	10	2	1 (T, D/U)
62A	7	3	0	1 (TR, R/U)
63	2	3	3	0
63A	0	1	0	0
63B	0	1	0	0
Total	130	73	10	3

○ 213 new + 3 old

	E	T	TR
Clause 45	7	27	2

STF Chair's comments on comments

- Resolution of BTI's had positive effect
  - Higher-quality, more constructive this time around
- PMI Aggregation had largest # of T's
  - Text contains several errors/omissions
- Clause 45 next
  - New material here
- TPS-TC specification next
  - Most seem to be due to text ambiguity

Remaining work before July

- **Decide on 10PASS-T PMD**
- Firm up Clause 45 copper section, and related sections of Clauses 61-63
- Look at # options
  - Are there too many?
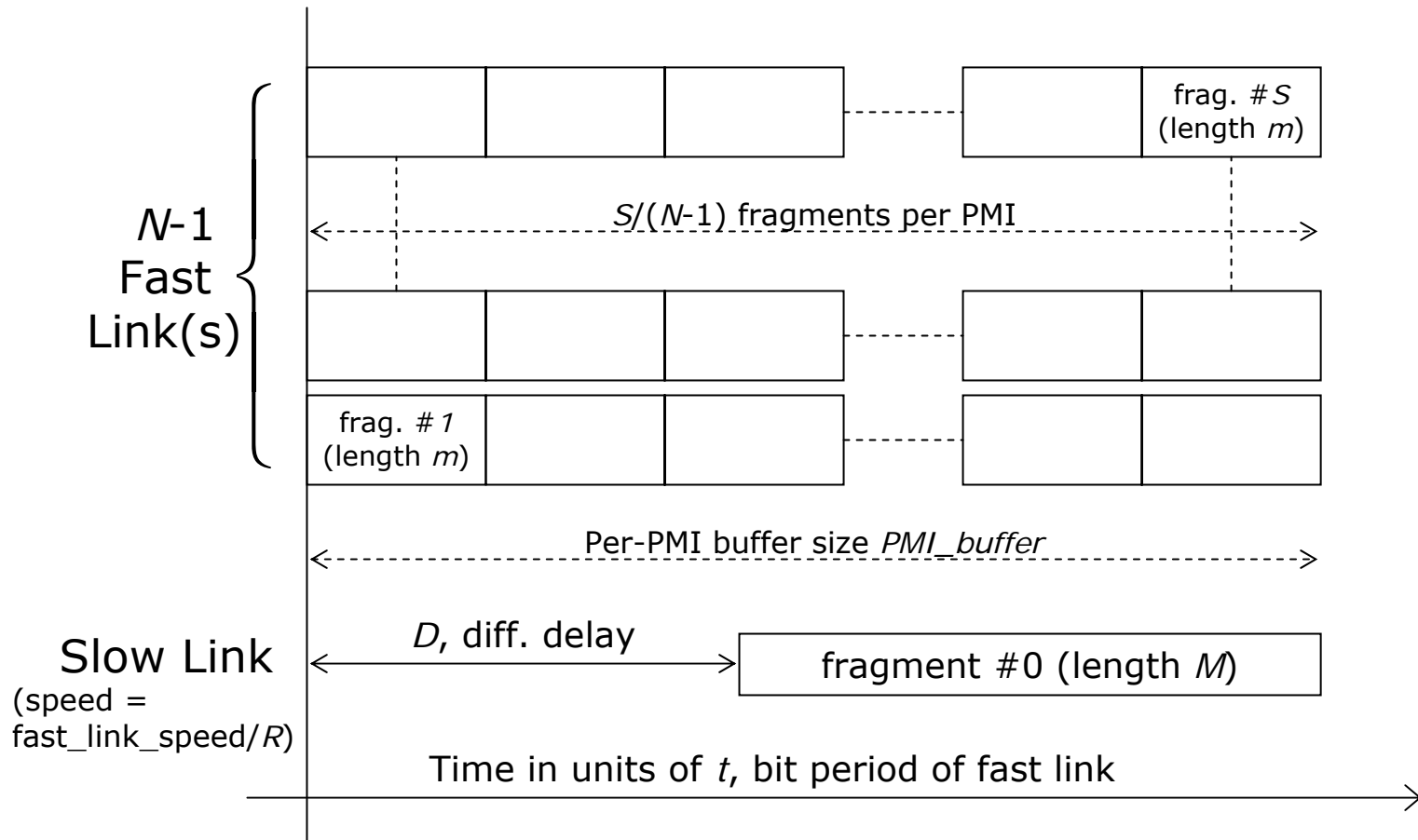- FEC uncorrectable error reporting
  - Need resolution to close open TR

Backup

Discussion Points

- PMI Aggregation
- TPS-TC
- Clauses 45

PMI Aggregation (see squire_copper_1_0902)

Parameters must satisfy:

$m \geq 64$

$D + M \times R \times 8 \leq PMI\_buffer$

$D + M \times R \times 8 \leq (S/(N\text{-}1)) \times m \times 8$

PMI Aggregation T Comments

Comment #	Comment Summary	Proposed Response
574, 754	Range of N should be $1 \leq N \leq 32$ rather than $0 \leq N \leq 32$	A
919, 926	Sequence # header length = 14 bits	A
759	Sequence # header length = 14 bits, TX restrictions informative, remove RX max/min checks	AIP
920, 921	Set $PMI\_buffer = 2^{16}$, move some text to 61.2.2.4	A
528	Change $PMI\_buffer = 15K$	AIP
907	$PMI\_buffer = 64K$ for 10PASS-T, $=2^{13}$ for 2BASE-TL	A
909	Delete reference to $PMI\_buffer = 2^{16}$	AIP
690	State $D + R^*8^*M < 32K$, $m > 64$	AIP
923	Redefine D as $new\_D = D + M$	AIP
922	Specify R	AIP
927	Set $R=8$	AIP
924, 526, 913	Set $m = 64$	A
925, 927	Set $M=512$	AIP
914	Set $M=256$	AIP
908	Let last fragment be $< m$	R

PMI Aggregation T Comments *(cont'd)*

Comment #	Comment Summary	Proposed Response
758	Rationalize 61.2.2.3 with 61.2.2.5	AIP
682	Change "packet to "fragment" (s.b. "frame")	R
760	Add RX error conditions: [unexpected Start of Packet], [maxFrameSize exceeded]	AIP
206	Specify contents of "garbage frame"	AIP
205	Fix "RX Error" labeling ambiguity	AIP
761	Revise management entity primitives for errors	AIP
762	PMD_Available_register should not be read-only in LT	R
573	One MDIO/MDC per MII, describe how this works	R
572	PMI_Available_register definition conflicts	AIP

TPS-TC T Comments

Comment #	Comment Summary	Proposed Response
523	Delete preamble+SFD on TX; add SFD on receive	AIP
576	Assert γ-interface TX_Err in response to MII signal	AIP
99207	Add FEC_uncorrectable signal to α/β-interface	Open
933	Add scrambler to TPS-TC	AIP
912	Correct typo in Table 61-9	AIP
531 ("E")	Allow "all-idle" frame to follow "all-data" frame"	R
931	Add illustrative cases to Table 61-9	AIP
532, 932	Add C64 definition to Table 61-10	AIP
705	change table 61-10 values	A
578	Clarify "payload"	AIP
706	Clarify CRC definition	A
934, 533	Re-do state machine; agree on unsync'd state indication	AIP
579	Indicate unsynchronized state per Clause 49	AIP
580	Add missing signals to Clause 45	A
713	Delete unused G.hs tables	A

Clause 45 T Comments

Comment #	Comment Summary	Proposed Response
960, 355	VDSL IB bits missing; add them	AIP
961	VDSL SCM registers need work	A
958	Need bit to set for NT or LT operation	A
570	Comment applicable to Clause 61	R
554	Add bit assignments for new phy types	AIP
797	Clarify per-PMI/per-PMD granularity of regs.	AIP
795	Make aggregation required ability	R
956	Move Aggregation Discovery example to Annex	A
558	Describe how to write PMI_Discovery_register	R
559	Ambiguity on location of γ-interface	AIP
560	PAF registers, if PAF is above PCS?	R
561	LT/NT confusion	AIP

Clause 45 T Comments (*cont'd*)

Comment #	Comment Summary	Proposed Response
561	LT/NT confusion	AIP
344	Change definition of FEC_Correctable_Error	A
957, 345	Change definition to match VDSL Mib	A
354	At NT interleaver reg.	A
353	Add interleaver depth and block size regs.	A
346	Delete interleaver depth & block size from Table 45-21	A
349	Add Rx_attenuation reg.	R
356	Add electrical length & NT e.l. regs.	R
350	Define different sets of STP for different link states	R
351, 352	Extend bit definitions to 16 bits; cover all bands	AIP
348	Delete RX power reg.	R
962	Remove per-tone SNR regs.; replace with regs, that correspond to MCM MIB objects	A
798, 918	Add suggested regs. for 2BASE-TL	A
556	Add reg. 1.7 to Clause 45	R