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<td>199</td>
<td>52</td>
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**Comment:**
The mixing segment shall meet the insertion loss characteristics specified for link segments in 147.7.1 between any two MDI attachment points. And from 147.8 "A mixing segment is specified based on cabling that supports up to at least 8 nodes and 25 m in reach". From both of this statement, this specification is requiring 28 (combination of any two measurement taken). And any added nodes requires all combinations to be measured again, and with no assurances that the prior conformant MDI may fall out of range.

**Suggested Remedy:**
Provide better medium specification and cable design considerations that can be followed assured scalable MDI and medium construction.

**Response: REJECT.**
This comment does not apply to the substantive changes between IEEE P802.3cg D2.3 and D2.4 or the unsatisfied negative comments from earlier ballots. Hence it is not within the scope of the recirculation ballot.

**Commenter provides insufficient remedy.**
Commenter mistakes 147.8 explanatory text with the specification ("is specified" vs. "shall meet...")
Commenter may choose to resubmit this comment at Sponsor ballot.

**Straw Poll:**
I support the above proposed response to comments #42 and #43 (same response)
Y:38
N:1
A:10

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**Comment:**
[CSD] One of the responsibilities as a balloter is to ensure that draft is consistent with the criteria for standards development (CSD) responses which are available at <https://mentor.ieee.org/802-ec/dcn/18/ec-18-0079-00-ACSD-802-3cg.pdf>. An Approve vote indicates your agreement that the draft is consistent with the CSD responses.

Fulfilling my responsibilities as a balloter, I am attaching a file that summarizes CSD as well as PAR concern. with the filename 802.3 cg PAR and CSD Issues D2-4_v1_Kim_2019-03-08.pdf

**Suggested Remedy:**
Posted CSD no longer represents the expectation it set compared to the draft standard in regard to PLCA RS operation on shared medium. Modify the CSD as appropriate to match 802.3cg draft contents.

**Response: REJECT.**
Comment is a collection of restatements of previously rejected comments from the same commenter, including comments 210, 264, 265 on draft 2.2, and 289 and 637 on draft 2.0.


Commenter fails to show compatibility issues with conformant implementations and incorrectly posits PLCA is a new MAC.

Further, with regards to distinct identity, commenter creates different interoperability classes by suggesting deleting half duplex point to point, which is the required interoperable root. Then, as a consequence of deleting the interoperable root, commenter claims that the options are different phy types.

Commenter additionally claims new issues for economic feasibility, based on text out-of-scope for this recirculation (147.8), and incorrectly claims the draft requires numerous measurements when the requirement could be met by design.

**STRAW POLL:**
I support the proposed response to comment #44:
Y: 29
N: 4
A: 26
(pick one)
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<td>#</td>
<td>46</td>
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</table>

**Comment:**

PLCA managed object class is put in the wrong part of the CL30. It should follow other CL30 additions and go after 30.15. So 30.16, unless other project ahead of this inserts one (unlikely).

**Suggested Remedy:**

Renumber and change the instructions to add this proposed 30.3.9 to be inserted after current 30.15.

**Response:**

REJECT.

This comment does not apply to the substantive changes between IEEE P802.3cg D2.3 and D2.4 or the unsatisfied negative comments from earlier ballots. Hence it is not within the scope of the recirculation ballot.

Commenter may choose to resubmit this comment at Standards Association ballot.

I support the proposed response to comment 45:

Y:39
N:1
A:18

**Comment Status:**

R

**Response Status:**

U

---

**Comment:**

aPLCABurstTimer measure bit times inside the internal process where the entire packet is transferred atomically. This is entirely (externally) invisible parameter, meaning any number of bit-times an implementation uses, it is indistinguishable from other MAC transmit scheduling; therefore meaningless. IPG is generated by PLS/RS. The default value of 128 "may be" relevant if this timer is measuring the gap at the PCS. But at RS, this timer is meaningless.

**Suggested Remedy:**

Delete this timer.

**Response:**

REJECT.

This comment does not apply to the substantive changes between IEEE P802.3cg D2.3 and D2.4.

(while 30.3.9.2.7 has changes, the comment is unrelated to those changes, which were editorial to reformat how the default range was described)

Comment is a restatement of unsatisfied part 2 of comments #205 and #220 on draft 2.2.

Commenter is incorrect: the RS interfaces to the MAC layer via the PLS primitives and to the PHY via the MII interface.

The RS groups and aligns the bits conveyed by the MAC via the PLS_DATA.request primitive to the MII TX_CLK (See 22.2.1.1 and 22.2.1.1.3).

This mapping clarifies the specification of bit times within an RS. (see also 148.4.3.1)

I support the above proposed response to comment #46:

Y:26
N:3
A:18
Comment Parameters for 10 Mb/s Operation and Associated Power Delivery over a Single Balanced Pair of Conductors

D2.3 Unsatisfied - 3/12/19

----

**Comment Type** ER **Comment Status** R

**Comment:** My comment number #206 against D2.2 with "Accept in Principle" resulted in partial replacements CL147 to change "multidrop" with "mixing segment", but the comment #206 request was to do careful search and replacement for the whole draft. L16 "Multidrop mode ability" would change to "half-duplex" mode ability in this case.

**Suggested Remedy:**
Do careful search of whole draft for "multidrop" and replace the text and nearby words to mixing segment, or half-duplex, or shared medium, or other appropriate wording that already been in use.

**Response:** REJECT.

During implementation of #206 against d2p2, each occurrence of "multidrop" was carefully reviewed. The instances that the commenter refers to relate to the name of the mode, which was specifically excluded from the resolution.

----

**Comment Type** ER **Comment Status** R

**Comment:** [Comment on unchanged text and with no unresolved negative]. "Fault -- Fault condition detected.." is just too vague. Does reader assume the "fault" relates to PCS fault? And is it any detectable fault? Any implementation specific faults? So if I read this latched bit as one, what information do I get -- there was a fault and we don't know what caused it. So what value is there? Makes little sense. I cannot even suggest wording that may be satisfactory.

**Suggested Remedy:**
Assuming this is PCS fault TX or RX.. Reference detected fault types in relevant PCS clauses. If this is just thrown in for any fault and .3cg want it, then say "ANY DETECTED PCS FAULT". If there is no agreement how this is used, then I suggest deleting it.

**Response:** REJECT.

The referenced text in the table at page 54 line 40 is correct. The subclause referenced in the subclause field is standard language in clause 45 registers for description of PCS faults in IEEE Std 802.3-2018.

----

**Comment Type** TR **Comment Status** A

**Comment:** [Unsatisfied Comment Re-submit Due to Incorrect use of "Accept in Principle"] My comment number #211 against D2.2 states my concern where PLCA resides. Just RS? Or also in PCS and/or PMA? I requested remedy is to delete or clarify where PLCA function resides.

The committee resolution was to change "PLCA RS required functions" with "the encoding of BEACON and COMMIT", which completely misses the stated concern. 10BASE-T1S PCS contains PLCA components that are optional. This is entirely inconsistent with PLCA is a optional function in RS layer.

It looks to be that PLCA is also an optional function in PCS layer. If this is the case, the standard should state this. And if the PLCA is also an optional function in PMA layer, it should also be stated as such.

**Suggested Remedy:**
Comment number #211 requested remedy was "Either delete this [PLCA Support], or clarify which layer[s], PLCA resides.” You may want to reverse the changes in D2.3, because the change was not requested.

**Response:** ACCEPT IN PRINCIPLE.

Accomodated by comment 117.

Response to comment 117 is:
ACCEPT IN PRINCIPLE.

----

TYPE: TR/technical required ER/editorial required GR/general required T/technical E/editorial G/general COMMENT STATUS: D/dispatched A/accepted R/rejected RESPONSE STATUS: O/open W/written C/closed U/unsatisfied Z/withdrawn SORT ORDER: Comment ID
Comment #212 on D2.2 suggested a remedy that was not accepted. Text in D2.3 introduced bigger concern (the original was just cut & paste editorial error). Also line 25, "results in a corrupted signal at the MDI." is no way to describe collision on the medium. Corrupted signal could be caused by many ways, one of which is contention on the wire. Detection is also an issue that strong station may not see corrupted signal during a contention on a wire.

**Suggested Remedy**

Please reference the sub-clause where collision detect on the medium is specified, and change the text to "...results in collision detect on the medium" I could not find the clause easily.

**Response**

REJECT.

The name of this counter has been changed by the response to comment 105 to better align with what the counter counts.

The ballot resolution committee believes that accepting this comment would make the text in this clause inconsistent with the rest of the draft, particularly clause 147.3.5.

The requirement there is "When operating in half-duplex mode, the 10BASE-T1S PHY shall detect when a transmission initiated locally results in a corrupted signal at the MDI as a collision." The descriptive text at 45.2.3.68f line 18 precisely repeats this requirement without sending the reader to look up what is meant by another term.

**Suggested Remedy**

Replace "PhysicalColCnt" to "CollisionCnt"

**Response**

ACCEPT IN PRINCIPLE.

The ballot resolution committee believes that changing the name as the commenter suggests would cause additional confusion; however, the name should be changed to align better with the behavior of the counter.

Change all occurrences of "PhysicalColCnt" to "CorruptedTxCnt"
Comment Type TR  Comment Status R  PLCA

[Unsatisfied Comment - Reject, with info to the commenter that has little relevance to the concern.]

My comment #214 on D2.2 had a response as a part of the reject, with the following info: "REJECT.

When optional PLCA RS is enabled, the MAC will count the number of collisions reported by the RS via the PLS_SIGNAL.indication primitive. Having a register that counts the number of corrupted transmissions at the MDI detected at the PCS or PMA sublayer is, as commenter says, a useful indication for diagnosing misconfiguration problems and to evaluate the line quality."

My comment #214 was: "I see the benefits of # of collisions experienced for a given packet transmit attempts -- indicates some qualitative measure of congestion. I don't see the value nor relevance of counting collisions since beginning of time. I cannot locate (easily, anyway) justification for adding this counter -- and even more so in PHY/PCS rather than in the MAC."

The concern still stands. Counting collisions ONLY when the local MAC attempted a collision from the begining of time does NOT provide any useful value. In addition, the comment response note suggests that it is NOT counting collision, but corrupted transmissions, which is NOT collision. If you meant corrupted transmission, then it you should say corrupted transmission (although I don't see how that is differentiated from FCS and Alignment error and short events, etcetera). If you meant collision, I do not see any benefits to this counter beyond several [real] collision related counters already in place (e.g. one, more than one, 16, etc).

SuggestedRemedy

The remedy request is still the same as my prior comment -- "Please delete this counter, or reject this comment and point me to the rationale and utility of this counter."

Response U

REJECT.

The ballot resolution committee believes that rationale is provided in the response to comment #214 against d2p2. Commenter provides no new information and insufficient remedy.

Comment Type TR  Comment Status A  PMA

[Related to rejected comment #278 on D2.2].

Full-duplex operation over one pair should have echo-cancellation (cancel TX from RX) onto/from media. I cannot find any reference to this function. 100BASE-T1 std, in 96.4.3 has text of "PMA Receive has Signal Equalization and Echo Cancellation sub-functions These sub-functions are used to determine the receiver performance and generate loc_rcvr_status..."

REJECT based on comment on unchanged text does NOT relive the WG from forwarding std draft that is considered incomplete or known errors. It should be clear to the readers of our standard what function are to be implemented (some of which are REQUIRED for interoperability are to be specified for the standard to eb complete). How the echo cancellation may be implemented may be left out, but "architecture (which is what we do in 802.3) must be described and specified.

SuggestedRemedy

Please provide a reference to echo cancellation function. And it would be good to have a reference to that function in CL 146.4.3 introductory paragraph (not there now). Just to be clear -- I am not asking for echo cancellation function specification. I am asking for architectural exisitence of echo cancellation function that must be there for this PHY to work.

Response U

ACCEPT IN PRINCIPLE.

Add the following new sentences to the end of the first paragraph of 146.4.3 (P138 L34) (after "signal flow of the 10BASE-T1L PMA Receive function.")

"To achieve the indicated performance, it is highly recommended that PMA Receive include the functions of signal equalization and echo cancellation. The sequence of symbols assigned to tx_symb_vector is needed to perform echo cancellation."

Comment ID 112  Page 3 of 7  3/12/2019  2:50:19 PM
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<td>Suggested Remedy</td>
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[Related to Accept in Principle comment #231 on D2.2.]
Comment response agreed that connectors described MAYBE used at the medium. But the title of this subclause still say "146.8 MDI specifications".

Response | Response Status | U |
ACCEPT IN PRINCIPLE.
Commenter is incorrect - The connectors in 146.8.1 may be optional, however, any interface must meet the specifications in 146.8 in its subordinate subclauses which provide specifications at the MDI. 146.8.2 and 146.8.3 provide electrical specifications for the MDI, 146.8.4 and 146.8.5 specify fault tolerance. "considerations" is not appropriate - these are requirements common to BASE-T and BASE-T1 PHY specifications in 802.3.

However, clause 146 is missing PICS entries for these requirements, and this may be the source of the commenter's confusion.

Add new subclause 146.11.4.5 (after Link Segment), and renumber subsequent PICS subclauses. Containing PICS entries from http://www.ieee802.org/3/cg/public/Feb2019/Clause 146 PICS.pdf with editorial license to conform to PICS formatting.

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[Related to, but not same as, rejected comment #210 on D2.2, where the concern was Broadmarket Potential of 10BASE-T1S half-duplex point-to-point PHY (the only mandatory mode) that does not support repeaters.]
Really a chater and scope of this PHY clause and CSD concern. This clause has three separate PHYs that should not be considered as one PHY with two options.

Full-Duplex P2P PHY: Performs echo cancellation full-duplex over one transmission line.

Half-Duplex P2P PHY: Tradition would say echo cancellation in support of full-duplex on the medium, and performs logical collision detection. But in this clause, it has been silent on echo cancellation and collision detection method. Comments requesting these two to be clarified is rejected as "implementation dependeant" (my comment #242 on D2.2), 100% collision detection assurance (architecturally) that has been our requirements is completely ignored in this project. Echo cancellation + logical collision would be satisfactory (common with Full-duplex P2P PHY), or collision detection on shared medium without echo cancelation (whatever it is... it's missing in all drafts up to D2.2. In D2.3 states "corrupted signal at MDI" is deemed as collision (147.3.5), without any supporting material that assures 100% collision detection.

Half-Duplex Shared Medium PHY: Tradition would say no echo cancellation but detect multiple transmissions on the wire through analog (DC level) means. In this clause, it has been silent on collision detection method. Comment requesting collision detection function to be clarified is rejected as implementation dependant. 100% collision detection assurance (architecturally) that has been our requirements is completely ignored in this project.

Looks like there is one PHY that does echo-cancellation, one PHY that does NOT do echo-cancellation and undefined (or just "data corruption" in D2.3) collision detect method, and one PHY that may be of some combination of the two.

Suggested Remedy | Pick the one PHY that meets CSD and objectives as written, or split this clause into at least two (one for P2P and one for Shared medium) separate PHY clauses and modify the CSD and objects as appropriate.

Response | Response Status | U |
REJECT.
Commenter fails to demonstrate a problem, and, clause is consistent with 802.3 objectives as approved, which have one phy with multiple modes, consistent with previous projects.
<table>
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<td>[CSD and Layer violation concern]</td>
<td>Delete CL147.3.7.1 requirementss.</td>
<td>ACCEPT IN PRINCIPLE.</td>
<td>117</td>
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<td>P 27</td>
<td>L 8</td>
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<td>U</td>
<td>[PAR scope] 10 Mb/s project uses AUI or MII. 802.3cg uses MII not xGMII. How do I know? It references CL22, which is MII, and MII is referenced in the CRD for this project. This change in D2.3 is technically incorrect.</td>
<td>Remove 10BASE-T1L and 10BASE-T1S from xMII column in the diagram and also in the note, and put them below MII column in the diagram.</td>
<td>REJECT.</td>
<td>19</td>
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</table>

Comment Type: TR/technical required  ER/editorial required  GR/general required  T/technical  E/editorial  G/general
COMMENT STATUS: D/dispatched  A/accepted  R/rejected  RESPONSE STATUS: O/open  W/written  C/closed  U/unsatisfied  Z/withdrawn
SORT ORDER: Comment ID
Comment Parameters for 10 Mb/s Operation and Associated Power Delivery over a Single Balanced Pair of Conductors

3rd Working Group recirculation ballot comments

Comment: CL22 SC22 P32 L10 #120

Commenter: Kim, Yong

Response: REJECT.

Comment Type: TR/technical required

[S/CSD Compatibility] Changes to CL22 that affect existing exposed interoperability test point that is MII may and likely cause compatibility issues, and potentially deem existing installed base that are compliant to IEEE 802.3-2018 no longer compliant.

It is CLEAR that ALL proposed changes to CL22 is due to inclusion of CL148 PLCA - optional RS Layer that is performing media access control at the cost of effecting compatibility (see http://www.ieee802.org/3/cg/public/Nov2018/Kim_3cg_01a_1118.pdf) to installed base of exposed interoperability interface. This is not acceptable.

Suggested Remedy
Reverse all changes to CL22 that affect MII behavior.

Response: REJECT.

Commenter fails to show a compatibility problem.

Commenter is incorrect - use of reserved codes preserves compatibility, as has been successfully done in previous projects.


Straw Poll
I support rejecting comment 120 with the response:
"Commenter fails to show a compatibility problem.

Commenter is incorrect - use of reserved codes preserves compatibility, as has been successfully done in previous projects.


Y:13
N:0
A:3

Comment Status: R/rejected

Response Status: U/unsatisfied

Comment ID: 120

Page 6 of 7

3/12/2019 2:50:19 PM
Comment Type: TR/technical required

Comment ID: 128

Response Status: U

The inclusion of the new CSMA/CA shared media access control mechanism (labeled PLCA) which overrides CSMA/CD as the media access control:
1. Is out of scope for the PAR approved for the project
2. Does not conform to the CSD approved for the project
3. Is not needed to satisfy any of the OBJECTIVES approved for the project
4. Pollutes the DISTINCT IDENTITY of 802.3 as The Standard for Ethernet when CSMA/CA deserves and should be given a project with its own DISTINCT IDENTITY.

These points will be discussed in further detail on the attached ADDITIONAL COMMENTS document.

Suggested Remedy:
Remove clause 148 labeled "PLCA Reconciliation Sublayer (RS)" and related text from the draft and use the existing clause 22 as the RS to reconcile the MII to the current standard 802.3 MAC. This will allow the project to proceed and fully meet the requirements of the approved PAR, CSD and 802.3 Objectives.

(What to do with the removed material is outside the scope of this comment but I am happy to entertain and fully participate in that discussion in a supportive manner.)

ALTERNATIVELY (and not preferred) the PAR, CSD and 802.3 Objectives could be updated and amended in a manner that would establish a need for a CSMA/CA solution to be part of the project.

Straw Poll:
I support the following response to comment 128:
REJECT.

The ballot resolution committee believes that the commenter is incorrect in asserting PLCA is a new media access control layer overriding the CSMA/CD MAC. PLCA architecturally fits at the reconciliation sublayer and performs functions allocated to the physical layer. It requires the CSMA/CD MAC for media access control.


Type: TR/technical required
ER/editorial required
GR/general required
T/technical
E/editorial
G/general
This could be a pile on comment. .avoid physical collision on the medium. There is a
definition for collision and contention. What is "physical collision" on the medium conveyed
in the definitions.

Suggested Remedy
change "physical collision" to "collision". Or expand why the word "physical" is needed.

Response
ACCEPT IN PRINCIPLE.

Replace, "A method for generating transmit opportunities for 10BASE-T1S multidrop PHYs
operating on mixing segments in order to avoid physical collisions on the medium. (See
IEEE Std 802.3, Clause 148.)"

with, "A method for generating transmit opportunities for 10BASE-T1S operating on mixing
segments. (See IEEE Std 802.3, Clause 148.)"

Also 22.2.2.5, 22.2.2.8 22.8.3.2 CL22 MII is an existing exposed interoperability test point.
Any material changes to its function effect interoperability to installed base. EEE related
modifications prior connects to EEE services client, not MAC. These proposed changes
directly effect interoperability to existing installed base to MAC services.

Suggested Remedy
Reverse all proposed modifications to CL22 that effect shall statement that existed prior.
A good test for this would be that there is no modifications to the PICS table with status
"M". See Slides 4~6 in
text.

Response
REJECT.

Commenter fails to identify a specific compatibility problem or specific PICS items.
Compatibility is satisfied and has been demonstrated. Refer to
and 35) for examples.

Other than PICS item SF17, which has been modified to exclude the new PHYs in this
draft, there are no changes to add new Mandatory PICS items other than those conditioned
on new options (see 22.8.2.3).
Comment Type | TR | Comment Status | R | Ticket Item - Management
---|---|---|---|---
 PHY is NOT the same as Physical Layer in layer definition. PHY has xMII on one side and MDI on the other. So by definition, oPLCA CANNOT be in oPHYEntity. Note: look at other RS related entities in Fig 30-3 to see the consistency

Suggested Remedy
Move oPLCA from below oPHY and locate it below oMAC

Response | Response Status | U
---|---|---
 REJECT.

Additional information: The Reconciliation Sublayer extensions specified in Clause 65 for point-to-point emulation extend the Reconciliation Sublayer to support multiple MACs above a single PHY, see Figure 65-1 ‘RS location in the OSI protocol stack’. These extensions effectively add a set of functions above the PLS service interface at the 'top' of the existing Reconciliation Sublayer specified in Clause 35 to provide support for multiple instances of the PLS service interface. These functions include replacing some of the preamble on transmit with information protected by a CRC8, and examining this information on receive to determine which of the multiple MACs a packet is forwarded to. These are in effect a set of functions operating between the existing Reconciliation Sublayer and the multiple MACs, and as a result, the oOMPEmulation object to support these additional functions has to be placed between the multiple oMACEntity objects and the single oPHYEntity object. Note the many-to-one mapping from the oMACEntity object to the oOMPEmulation object in Figure 30-3 DTE System entity relationship diagram.

This is not the case for Energy-Efficient Ethernet or Time Synchronisation which did not impact the interface presented to the MAC. As a result, the additional attributes were either placed in the oPHYEntity object, this was the case for Energy-Efficient Ethernet, or in an object contained within the oPHYEntity object, this the case for Time Synchronisation where the oTimeSync object was added. It is for the same reasons that the oPLCA object should be contained within the oPHYEntity object too.

Comment Type | TR | Comment Status | R | Ticket Item - Management
---|---|---|---|---
aPLCA Burst Timer has at least two issues. 1) name seem to indicate timer burst, but the definition says wait timer before terminating burst. Should rename to reduce confusion. 2) With infinitely fast statemachines and atomic frame transfers, and RS being above the xMII counters in bit times makes little sense. Obviously exposed interfaces are exceptions. If the intention is to allow building a non-compliant PHY that includes PLCA in the PHY, then this timer may be relevant in implementations (not to the specification which is done in architectural frame work). I assum this is not the intent. If this is the intent, please go through appropriate process.

Suggested Remedy
WRT to 1) please consider chaning the timer name to more descriptive name, if 2) is rejected. If 2) is accepted, then please ignore 1) comment.

Response | Response Status | U
---|---|---
 REJECT.

This appears to be two comments in one.
1 (re:timer naming): Commenter provides insufficient information for remedy. 2 (re: process): Commenter provides insufficient information for remedy. Commenter is incorrect; the timer is in the physical layer and not the MAC.
gernent Parameters for 10 Mb/s Operation and Associated Power Delivery over a Single Balanced Pair of  D2.2 Unsatisfied - 3/12/19

Comment Type TR  Comment Status A  Big Ticket Item - Multidrop

Only place the "multidrop mode" is defined is in 147.1 and says "a half duplex shared-medium mode, referred to as multidrop mode, capable of operating with multiple link partners connected to a mixing segment" I know this term has been in use for a long time in the .3cg draft development. But I don't see any benefit to introducing a new term. Traditionally we had mixing and link segments, and we have half-duplex point to multi-point (P2MP), and full duplex point to point (P2P) operations. I do not see any reason to introduce a new term that does not seem to have sufficient difference from traditional terms in function. Even in CL147 spec -- see 147.3.3.2, duplex_mode was sufficient.

Suggested Remedy
Please consider careful search and replacement of "multidrop" "and multidrop over mixing segment" with point to multipoint (P2MP), or in many cases just "half-duplex", or "half-duplex over mixing segment". I don't see how it is reader-friendly to have so many terms to refer to the same thing. Painful now, but we have to live with the specified text [almost] forever.

Response ACCEPT IN PRINCIPLE.
P167 L24: Delete "multidrop"
P167 L46: Delete "multidrop"
P213 L39: Change "multidrop network" to "mixing segment"
P218 L26: Change "multidrop network" to "mixing segment"
P224 L16: Change "multidrop network" to "mixing segment"
P49 L45 & L47: Change "multidrop operation over a mixing segment network" to "multidrop mode"
P49 L48: Change "multidrop operation" to "multidrop mode"

Add editor's note at top of 147.1:
Editor's note (to be removed following draft 2.3) - Commenters are encouraged to consider possible alternate names for "multidrop mode" using existing 802.3 terminology which are descriptive and compact.
gament Parameters for 10 Mb/s Operation and Associated Power Delivery over a Single Balanced Pair of  D2.2 Unsatisfied - 3/12/19

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<td>45.2.3.68f</td>
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<td>TR</td>
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<td>I see the benefits of # of collisions experienced for a given packet transmit attempts -- indicates some qualitative measure of congestion. I don't see the value or relevance of counting collisions since beginning of time. I cannot locate (easily, anyway) justification for adding this counter -- and even more so in PHY/PCS rather than in the MAC. SuggestedRemedy Please delete this counter, or reject this comment and point me to the rationale and utility of this counter.</td>
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<td>45.2.13.4</td>
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<td>TR</td>
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<td>Related to my other comment on 30.2.9.2.7 (and should consider together), 1) name seems to indicate timer burst, but the definition says wait timer before terminating burst. Should rename to reduce confusion. 2) With infinitely fast statemachines and atomic frame transfers, and RS being above the xMII counters in bit times makes little sense. Obviously exposed interfaces are exceptions. If the intention is to allow building a non-compliant PHY that includes PLCA in the PHY, then this timer may be relevant in implementations (not to the specification which is done in architectural frame work). I assume this is not the intent. If this is the intent, please go through appropriate process. SuggestedRemedy WRT to 1) please consider changing the timer name to more descriptive name, if 2) is rejected. If 2) is accepted, then please ignore 1) comment.</td>
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<td>Use of the word &quot;collision&quot; and use of term &quot;logical collision&quot; &quot;local collision&quot;, and &quot;physical collision. This is a pile on comment to unresolved D2.0 draft comment. Use of terms other than just &quot;collision&quot; in .3cg bothered me. This time, I went through some research. 1.1.2.1 Half duplex operation states &quot;...if... message collides...to ensure propagation of collision through out the system.&quot; states collision is system wide. 1.4.202 collision: A condition that results from concurrent transmission from multiple data terminal equipment (DTE) sources within a single collision domain. And 1.4.203 collision domain: A single, half duplex mode CSMA/CD network. If two or more Media Access Control (MAC) sublayers are within the same collision domain and both transmit at the same time, a collision will occur. MAC sublayers separated by a repeater... All of these prompt whether .3cg's use of &quot;logical collision&quot; or &quot;local collision&quot; are proper use of the word collision. &quot;physical collision&quot; should just be &quot;collision&quot;. In addition, the use of &quot;logical collision&quot; to describe an event that is not an observable event on the medium is confusing to 802.3 readers, who associates collision to an event on the shared medium. SuggestedRemedy Please consider careful global search and replace of &quot;physical collision&quot; to just &quot;collision&quot; and use some other term for &quot;logical collision&quot; and &quot;local collision&quot; if that remains in the draft. Cannot commup with a good suggestion for the alternate word, since the &quot;local collision&quot; function within .3cg in my mind is access control mechanism.</td>
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<td>1 (re:timer naming): Commenter provides insufficient information for remedy. ap/PLCA/BurstTimer is consistent with the timer named in clause 148. 2 (re: process): Commenter provides insufficient information for remedy. Commenter is incorrect; the timer is in the physical layer and not the MAC.</td>
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Note: the terms "logical collision" and "physical collision" are removed from the draft by these changes and other comments:

P224 L6: Delete "This is called a logical collision."
P225, L10: Replace, and a logical collision is triggered with, "and a collision is triggered"
P183, L17: Replace, "When operating in half-duplex mode, the 10BASE-T1S PHY shall detect physical collisions on the media during data transmission." with, "When operating in half-duplex mode, the 10BASE-T1S PHY shall detect when a transmission initiated locally results in a corrupted signal at the MDI as a collision."
P213, L44-45: Delete, "At any time, only the owner of the current transmit opportunity is allowed to send data over the medium, therefore avoiding physical collisions."
P218, L26: Delete, "PLCA Control state diagram is responsible for synchronizing transmit opportunities across the multidrop network to avoid physical collisions."
P224, L42: Delete, ", which would normally result in a physical collision"
P225, L1: Replace, "The variable delay line is a small buffer that is necessary in order to
avoid physical collisions by delaying transmission to the MII until the exclusive transmit opportunity for the node arrives." with, "The variable delay line is a small buffer that aligns transmission with the transmit opportunity."

**Comment**

*Comment Type: TR*

*Comment Status: A*

**MDI**

This says "this section defines the MDI for 10BASE-T1L", but it does not. MDI is a "mandatory" "shall"-stated Medium Dependant Interface for 10BASE-T1L. This section does NOT specify MDI. It provides (abiet useful) suggestions and diagrams but no specification. Please decide whether this project has an MDI (or set of MDIs). And if MDI is indeed specified, please change the CL title to include MDI (currently just ....PMA)

**Suggested Remedy**

Either specify "the MDI for 10BASE-T1L" or not, and make downstream consequential changes. If not specified, then perhaps use "MDI considerations" not "MDI specifications"

**Response**

*Response Status: U*

**ACCEPT IN PRINCIPLE.**

Change from "This section defines the MDI for 10BASE-T1L." to,

"This subclause describes connectors which may be used at the MDI. It also specifies electrical requirements, including fault tolerance, at the MDI."

---

**Comment**

*Comment Type: TR*

*Comment Status: A*

**PCS**

Based on my reading, tx_cmd encoding has been changed to be implemented regardless of PLCA RS layer option. Unnecessary specifications.

**Suggested Remedy**

Reverse the change and make any corrections WRT to T and I.

**Response**

*Response Status: U*

**REJECT.**

tx_cmd is implemented regardless of the PLCA RS layer option, and T & I are necessary to implement heartbeat (147.3.8)

---

**Comment**

*Comment Type: TR*

*Comment Status: R*

**PCS**

"The method for detecting a collision is implementation dependent but the following requirements have to be fulfilled:" is grossly insufficient. Collision detection method must be specified and reliability of collision detection must be validated.

**Suggested Remedy**

Without collision detection specification, this draft is grossly incomplete. I expect technically complete draft to include specifications on collision detect.

**Response**

*Response Status: U*

**REJECT.**

Commenter provides insufficient information for remedy. The standard specifies behavior, not implementation, and behavioral requirements for the collision detection are provided. Similarly, the standard does not specify how to equalize the received signal or how to cancel echoes, but states the transmitter electrical parameters, link segment transmission parameters, and receiver behavior (e.g., frame loss ratio and noise level tests) necessary for the implementation to meet.

---

**Comment**

*Comment Type: TR*

*Comment Status: R*

**PCS**

"When operating in half-duplex mode, the 10BASE-T1S PHY shall sense when the media is busy and convey this information to the MAC asserting the signal CRS on the MII as specified in 22.2.2.11." is grossly insufficient for CSMA/CD to work. How, when, and condition, signal assert and deassert time, etc should all be specified.

**Suggested Remedy**

this specification is grossly incomplete. Please complete it. I expect technically complete draft to include specifications on carrier sense behavior.

**Response**

*Response Status: U*

**ACCEPT IN PRINCIPLE.**

On page 183, lines 30-32, replace,

"the 10BASE-T1S PHY shall sense when the media is busy and convey this information to the MAC asserting the signal CRS on the MII"

with,

"the 10BASE-T1S PHY senses when the media is busy and conveys this information to the MAC by asserting the signal CRS on the MII"
Comment #245

Comment Type: TR
Comment Status: A
PCS: Kim, Yong

Reading into "Heart-beat (HB)" -- the function REQUIRES support of BEACON, etc., in PLCA option in RS, to work properly. This means PLCA option is NOT an option if Augo-neg is implemented and enabled.

Suggested Remedy
Please clarify whether PLCA RS layer is an option or mandatory. The current draft says optional in most places.

Response: Response Status: U
ACCEPT IN PRINCIPLE.

On page 184, lines 17-18, replace,
"The HB generation is disabled when the PHY is configured for operation over a mixing-segment network or a PLCA BEACON indication is detected on the line."

with,
"The HB generation is disabled when the PHY is configured for operation over a mixing segment or a BEACON is detected."

Comment #246

Comment Type: TR
Comment Status: R
PCS: Kim, Yong

Related to my other comment WRT half-duplex P2P mode WITHOUT repeater support makes little sense WRT broadmarket potential and suggest deleting that mode, and if that is considered positively, then consider replacing H-B with active idle for full-duplex P2P mode and have it align with 10BASE-T1L. H-B is being added in D2.2 in support of a mode that makes little market sense.

Suggested Remedy
Please conditionally (delete P2P HD) consider this suggestion (replacement of HB)

Response: Response Status: U
REJECT.

Comment #210 was rejected. The resolution to comment #210 is:

Commenter is incorrect, a number of individuals with a broad spectrum of affiliations agreed on an objective for this. The Criteria for Standards Development (e.g., broad market potential) apply to the entire standard:

Each proposed IEEE 802 LMSC standard shall have broad market potential. At a minimum, address the following areas:

a) Broad sets of applicability.
b) Multiple vendors and numerous users.

As written (and commonly) they do not mention objective by objective, or else they would have to be modified every time an objective is changed. The objectives are chosen to fit within the broader CSDs, by the applicability and the multiple interest groups. The existing 802.3cg broad market potential speaks to 10 Mb/s single-pair Ethernet in industrial, automotive, and intra-system applications, and the number and breadth of individuals and companies which have expressed interest in the standard. These have voted to approve adding the objective for P2P.
In compliance to 148.4.4.2.1, when PLCA RS operations are supported and enabled, the PHY shall notify the RS of a received BEACON indication by the means of MII interface as specified in 22.2.2.8." This could be read that 10BASE-T1S PHY support of PLCA related signals are NOT optional. If this is the intent, PLEASE explicitly state it (probably somewhere near 147.1) If not, then adjust the text to reflect optional nature of PLCA RS support.

Suggested Remedy
Please consider and do one of the two choices.

Response

ACCEPT IN PRINCIPLE.

Replace,
"when PLCA RS operations"

with,
"when optional PLCA RS operations"

"Auto-Negotiation may be performed as part of the initial set-up of the link and allows negotiation of the duplex mode of operation." and AN for half-duplex P2P related text should be deleted, IFF, such mode is deemed to not meet broad market potential (per my other comment)

Suggested Remedy
Please conditionally (delete P2P HD) consider deleting the referenced sentence.

Response

REJECT.

Comment #210 was rejected. The resolution to comment #210 is:

Commenter is incorrect, a number of individuals with a broad spectrum of affiliations agreed on an objective for this. The Criteria for Standards Development (e.g., broad market potential) apply to the entire standard:

Each proposed IEEE 802 LMSC standard shall have broad market potential. At a minimum, address the following areas:

a) Broad sets of applicability.

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As written (and commonly) they do not mention objective by objective, or else they would have to be modified every time an objective is changed. The objectives are chosen to fit within the broader CSDs, by the applicability and the multiple interest groups. The existing 802.3cg broad market potential speaks to 10 Mb/s single-pair Ethernet in industrial, automotive, and intra-system applications, and the number and breadth of individuals and companies which have expressed interest in the standard. These have voted to approve adding the objective for P2P.
This says "this section defines the MDI for 10BASE-T1S", but it does NOT. MDI is a "mandatory" *shall*-stated Medium Dependant Interface for 10BASE-T1S. This section does NOT specify MDI. It provides (albeit useful) suggestions and diagrams but no specification. Please decide whether this project has an MDI (or set of MDIs). And if MDI is indeed specified, please change the CL title to include MDI (currently just ...PMA)

Suggested Remedy

Either specify "the MDI for 10BASE-T1S" or not, and make downstream consequential changes. If not specified, then perhaps use "MDI considerations" not "MDI specifications"

Response

ACCEPT IN PRINCIPLE.

Text commenter refers to does not exist.

Insert new paragraph in 147.9 to align with 146.8 per comment 231:

"This subclause describes connectors which may be used at the MDI. It also specifies electrical requirements, including fault tolerance, at the MDI.*

Suggested Remedy

"avoiding physical collisions" should just be "avoiding collisions". Collisions on the medium. There is no other kind. The other collision "local collision" referred to in CL148 is more of access control and asserting COL signal in order to do access control. Readers of 802.3 understand collision, and introducing two new terms would be confusing without any derived benefit.

Suggested Remedy

Consider and do so (accepting this comment means careful global search and replace of "physical collision")

Response

ACCEPT IN PRINCIPLE.

Resolve with #223.

Resolution of comment #223 is:

There are 3 parts to this comment, so all 3 will be addressed.
A. "local collision" - There is no such thing as a local collision in the draft. There is only the 'local collision domain', where local refers to the domain, not the collision. The term collision domain is used as defined in 1.4.203.
B. "logical collision" - In this case, the term collision will suffice. Delete use of "logical collision" in the only two places it occurs:
148.4.6.1, P224 L6: Delete "This is called a logical collision."
148.4.6.1, P225, L10: Change "and a logical collision is triggered" to "and a collision is triggered"

Suggested Remedy

I do not see the [incomplete] generic PHY mapping, when PLCA is tightly coupled with 10BASE-T1S half-duplex PHY.

Response

REJECT.

Commenter fails to provide sufficient information to implement a remedy.

The text commented on is out of scope for recirculation as text was unchanged.
gument Parameters for 10 Mb/s Operation and Associated Power Delivery over a Single Balanced Pair of

10 Mb/s half duplex Ethernet offers the lowest level of performance in the market success Ethernet family (ignoring 1BASE5 which was not a market success). 802.3 and the networking market have developed successful improved performance variations of Ethernet over the years. Each of these improvements was judged before the project was authorized to meet the CSD or its predecessor, the Five Criteria. There has never been a project approved in 802.3 for the performance space between 10M CSMA/CD and either 10M Full Duplex or 100M CSMA/CD. The addition of a new access method to “improve” our worst performer was done for this project with no mention of this major addition to the scope and features of this project with no mention of it whatsoever in the project paperwork (PAR, CSD original Project Objectives). Further, the addition of PLCA to the draft clearly constitutes a new medium access control (MAC) protocol which overrides the shared media access method and the basic peer nature of Ethernet thus, the mechanism for it belongs in the Media Access Control (MAC) sublayer according to 802 Overview and Architecture. Further, the non-peer nature of PLCA is specifically contrary to the 802 Overview and Architecture (Ref: Std 802 4.1 para. 6) and thus violates the Compatibility criteria of the CSD. It is clear that when the project was started there either was no anticipated requirement for a new access method or the addition of a new access method was sandbagged, presumably because it could then be added to the project without being subjected to the rigors of the CSD examination. Standardized 10 Mb/s CSMA/CD has proved itself adequate for hundreds of millions of installations. Where it is not adequate the legitimate 802 process and the market have chosen full duplex and/or higher speed is the appropriate path within the standard for higher performance.

Suggested Remedy

Bring the project back into the bounds of the PAR scope and into compliance with 802 and the layer model by removing clause 148 and all other changes in the draft supporting PLCA elsewhere in the draft. I believe that this includes removing all reconciliation sub-layer functionality from the draft as no reconciliation should be required between a 10 Mb/s PHY and the legacy CSMA/CD MAC.

Response

REJECT.

Commenter incorrectly posits that the Clause 148 PLCA RS is a new MAC. It does not meet the requirements for a MAC, and, leaves the MAC functionality with Clause 4, which, in fact, it could not work without. Commenter incompletely quotes IEEE Std 802-2014 4.1, paragraph 6 leading to incorrect conclusions regarding peer-to-peer networking. Additionally, commenter’s suggested remedy appears to assert that the Clause 148 reconciliation sublayer is required. It is not; use of the Clause 148 PLCA RS is optional.


Strawpoll #4: I support rejecting this comment with the rationale: “Commenter incorrectly posits that the Clause 148 PLCA RS is a new MAC. It does not meet the requirements for a MAC, and, leaves the MAC functionality with Clause 4, which, in fact, it could not work.
Commenter incompletely quotes IEEE Std 802-2014 4.1, paragraph 6 leading to incorrect conclusions regarding peer-to-peer networking. Additionally, commenter’s suggested remedy appears to assert that the Clause 148 reconciliation sublayer is required. It is not; use of the Clause 148 PLCA RS is optional.

The behavior coming out of sleep is not implementation specific, it is governed by what happens upon reset.

**Suggested Remedy**

Fix text.

While often confused with sleep mode or EEE mode, low-power mode is neither. It is a standard low-power state where the PHY is only responsive to MDIO, and exit requires a reset (and therefore retraining, per the PHY control diagram). It is mirrored in the PMA control bit 1.0.11, the PMA/PMD control 1 register - common to most PHYs. The low-power mode functionality specified in 802.3cg is specified in other PHY clauses throughout 802.3, including clause 28, clause 36, clause 37 and clause 97 (1000BASE-T1), with identical or nearly identical specification of the implementation-specific nature of the function.

Commenter and Chair are encouraged to submit a maintenance request to deal with this confusion globally.
Management Parameters for 10 Mb/s Operation and Associated Power Delivery over a Single Balanced PD2.0 - Unsatisfied - 3/12/19

**Comment ID 273**

**Comment Type** TR **Comment Status** A **Placa**

Does the network segment work fine when nodes initialize with all defaults (in this case nodeID=255)? If so, then please explain how it works in CL147. If not, please explain why the default value matter.

**Suggested Remedy**

Please reference appropriate part of CL147 that describes NodeID=255 default operation, or delete, or add other clarifications needed.

**Response**

ACCEPT IN PRINCIPLE.

Replace "The default value of bits 3.2289.7:0 is 255." with, "The configurarion of local_nodeID is beyond the scope of this standard. When PLCA operation is disabled these values have no effect."

**Comment ID 274**

**Comment Type** TR **Comment Status** R **Placa**

If PLCA network does not work with repeaters, and a single multiple access segment cannot go beyond <nn> of nodes, why is the field much greater than necessary? It would be appropriate to set the value range to be the same as the actual segment max, and set the rest of the bits as reserved.

**Suggested Remedy**

Please do so.

**Response**

REJECT.

Commenter does not provide sufficient remedy. The default value for PLCA TO_TIMER was considered by the Task Force.

**Comment ID 275**

**Comment Type** TR **Comment Status** U **Placa**

"The default value of 20 bit times seems excessive for system that initialize with the value, when E2E delay for 25 m is 1.25 BT. Adding RX latency (148.4.5.1) delta, which is not spec'ed but the worst case (one could be at 0 us and another could be at 4 us in 147.11) the value could be 41.25 us for 25 m segment. None of these equate to 20 bit times default.

**Suggested Remedy**

Please do so.

**Response**

REJECT.

PLCA does not have a maximum size specified in Clause 148.

**Comment ID 286**

**Comment Type** TR **Comment Status** R **Placa**

"..round-robin fashion every time the PHY with node ID = 0 signals a BEACON on the medium, indicating the start of a new cycle" -- this specification does not describe how a node ID=0 is selected (or elected), and how the system handles duplicate node id=0 or absense of node id=0. Also not specified are node id conflict (duplicate node id s)

**Suggested Remedy**

The draft is not complete without these specifications. Specify these to complete the spec. Ethernet std has management optional, config rules are known, and required protocol to config are specified (e.g. channel traninig)

**Response**

REJECT.

No consensus to change

Commenter is referred to comment 598 with respect to node ID assignment and management operation.
Management Parameters for 10 Mb/s Operation and Associated Power Delivery over a Single Balanced PD2.0 - Unsatisfied - 3/12/19

**Comment #287**

*CLM, YONG*

**Comment Status** A

**Response**

The overall event of activity on the physical medium is signaled to the MAC sublayer by the variable carrierSense. And "var carrierSense: Boolean;

In half duplex mode, the MAC sublayer shall monitor the value of carrierSense to defer its own transmissions when the medium is busy. The Physical Layer sets carrierSense to true immediately upon detection of activity on the physical medium. After the activity on the physical medium ceases, carrierSense is set to false. Note that the true/false transitions of carrierSense are not defined to be precisely synchronized with the beginning and the end of the frame, but may precede the beginning and lag the end, respectively. (See 4.2 for details.)

In full duplex mode, carrierSense is undefined. CL173 use of carrier sense is in conflict with CL4.7. These conflicted use are pervasive, e.g. CL148.6.1 holds carrier_on_active even when there is no activity on the physical medium.

**Suggested Remedy**

Either include CL4 carrier sense related maintenance changes as a part of PLCA, or change PLCA to work with CL4 carrier sense as defined.

**Response**

ACCEPT IN PRINCIPLE.

Accommodated by #649.

**Comment #289**

*CLM, YONG*

**Comment Status** U

**Response**

The strike outs "Other. shall have no effect upon the PHY". This proposed change could potentially make existing systems non-compliant. So this potentially violates CRD (compatibility) and may cause other issues.

**Suggested Remedy**

please fix it.

REJECT.

This text has not been deleted. An additional pair of TXD values have been inserted, which result in the text being moved to page 25, line 21 of draft 2.0.

**Comment #292**

*CLM, YONG*

**Comment Status** R

**Response**

The proposed sentence "Assertion of the TX_ER signal shall not affect." potentially make existing systems non-compliant. So this potentially violates CRD (compatibility) and may cause other issues.

**Suggested Remedy**

please fix it.

REJECT.

No change is being made to the original clause 22 "shall not affect" text. The modification is the addition of "with the exception of 10BASE-T1S and 10BASE-T1L". The idea, which has been discussed in the group, is that we don't want to preclude using TX_ER with new 10BASE-T PHYs, so an exception has been added.

**Comment #295**

*CLM, YONG*

**Comment Status** R

**Response**

Move PLCA outside of RS (which only translates MII signals to PLS signals, for the dataplane as well as control like EEE states, not a new media access control method.

And if necessary, revise CSD and objectives as appropriate.

**Suggested Remedy**

See comment #637 for rationale.
Management Parameters for 10 Mb/s Operation and Associated Power Delivery over a Single Balanced PD2.0 - Unsatisfied - 3/12/19

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TYPE: TR/technical required  ER/editorial required  GR/general required  T/technical  E/editorial  G/general  
COMMENT STATUS: D/dispatched  A/accepted  R/rejected  RESPONSE STATUS: O/open  W/written  C/closed  U/unsatisfied  Z/withdrawn  
SORT ORDER: Comment ID  
Comment ID: 632  Page 3 of 7  
3/12/2019  2:16:57 PM
Management Parameters for 10 Mb/s Operation and Associated Power Delivery over a Single Balanced PD2.0 - Unsatisfied - 3/12/19

**Comment ID: 637**

**Comment: Cl 147 SC 147.1**

**Type:** TR/technical required  **Status:** R/rejected  **Ticket Item:** PLCA_SCOPE

**Comment:**
The inclusion of PLCA in this project is (1) a layer violation and (2) out of scope for a Physical Layer project according to clause 1.1 of the standard. Inclusion of PLCA conflicts with paragraph 3 of the responses to the "Compatibility" criteria of the CSD.

**Suggested Remedy:**
Remove this paragraph from the draft and related text from this project. If PLCA is desired as an addition to the standards family it should be placed appropriately within the layer structure and have its own CFI.

**Response:**
REJECT.

**Comment:**
PLCA maps existing MAC PLS primitives to MII, which is in-line with what an RS is supposed to do. PLCA is defined as a reconciliation sublayer, which has been considered part of a Physical Layer specification project. As long as this is the case, the text belongs in the subclause.

**Straw Poll:** I support rejecting this comment with the rationale above.

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**Comment ID: 638**

**Comment: Cl 147 SC 147.1.1**

**Type:** TR/technical required  **Status:** R/rejected  **Ticket Item:** AUI

**Comment:**
The text and Fig 147-1 do not align to Fig 1-1 of the standard which is intended to comprehensively cover 802.3.

**Suggested Remedy:**
Remove Fig 147-1 and reference Fig 1-1 or duplicate the 10 Mb/s portion of 1.1 here. Alter the implementation of 10BASE-T1S to align to the 1.1 model.

**Response:**
REJECT.

**Comment:**
Consensus not to change. Refer to motion 9 from Unconfirmed_minutes_3cg_0918.pdf

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Comment Type: TR
Comment Status: A

It is not clear from the description whether "PCS Reset" produces a level or a pulse on its output. i.e. does it take a !PCS Reset to complete the reset and release the device for operation.

Suggested Remedy: Clarify

Response: ACCEPT IN PRINCIPLE.
WORK WITH PIER ON THIS

Change this:

PCS reset initializes all PCS functions. The PCS Reset function shall be executed whenever one of the following conditions occur:

a) Power on (see 36.2.5.1.3).

B) The receipt of a request for reset from the management entity.

PCS Reset shall set pcs_reset = ON while any of the above reset conditions holds true. All state diagrams take the open-ended pcs_reset branch upon execution of PCS Reset. The reference diagrams do not explicitly show the PCS Reset function.

====

to this:

PCS reset initializes all PCS functions. The PCS Reset function shall be executed whenever any of the following conditions occur:

a) Power on causes power_on = TRUE (see 36.2.5.1.3) while pcs_reset = OFF.

B) The receipt of a request for reset from the management entity (see 3.2291.15 in 45.2.3.58e.1), independently from the current state of pcs_reset.

All state diagrams take the open-ended pcs_reset branch upon execution of PCS Reset. PCS Reset shall keep pcs_reset = ON until the complete execution of the PCS Reset function, after which it is set to pcs_reset = OFF. The reference diagrams do not explicitly show the PCS Reset function.

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Management Parameters for 10 Mb/s Operation and Associated Power Delivery over a Single Balanced PD2.0 - Unsatisfied - 3/12/19

Cl 147 SC 147.3.5 P L 10 # 648
Thompson, Geoff GraCaSI S.A.

Comment Type TR Comment Status R Big Ticket Item Repeaters
Collision detect as described here purports to detect a collision between this station and one other station. It does not describe any way to detect a collision between any other two or more stations.

SuggestedRemedy
Add collision detection based on energy received. Lack of this aspect constitutes a lack of completeness in the basic function of the specified device and therefore the draft. Restart the initial WG Ballot.

Response Response Status U
REJECT.
PHYs detect activity on the bus, specific detection of collision is not required, nor is the method.

Commenter indicates that his concern is reliable detection of activity with an arbitrary number of transmitters.

Straw Poll:
I support: REJECT - PHYs detect activity on the bus, specific detection of collision is not required, nor is the method.
Y:7
N:2
A:11

I support: ACCEPT. (commenter's proposed resolution is: Add collision detection based on energy received. Restart the initial WG Ballot.)
Y:0
N:9
TFTD

Cl 147 SC 147.3.7 P L 1 # 650
Thompson, Geoff GraCaSI S.A.

Comment Type TR Comment Status R Big Ticket Item PLCA_SCOPE
PLCA is out of scope for this project and a layer violation for a PHY project.

SuggestedRemedy
Remove the entirety of cl. 147.3.7.

Response Response Status U
REJECT.

See comment #637 for rationale.

Cl 148 SC 148 P L 173 # 656
Thompson, Geoff GraCaSI S.A.

Comment Type TR Comment Status R Big Ticket Item PLCA_SCOPE
The inclusion of PLCA in this project is (1) a layer violation and (2) out of scope for a Physical Layer project according to clause 1.1 of the standard. Inclusion of PLCA conflicts with paragraph 3 of the responses to the "Compatibility" criteria of the CSD.

SuggestedRemedy
Remove clause 148 and related text from the draft. If PLCA is desired as an addition to the standards family it should be placed appropriately within the layer structure and have its own CFI.

Response Response Status U
REJECT.

See comment #637 for rationale.
Management Parameters for 10 Mb/s Operation and Associated Power Delivery over a Single Balanced PD2.0 - Unsatisfied - 3/12/19

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**Comment ID** 657
Thompson, Geoff GraCaSI S.A.

**Comment Type** TR
**Comment Status** A

**Comment:** According to this text, "PLCA is designed to work on top of CSMA/CD". Therefore it is mispositioned in the stack by being placed within the PHY which is below the CSMA/CD mechanism.

**Suggested Remedy:**
Remove clause 148 and related text from the draft. If PLCA is desired as an addition to the standards family it should be placed appropriately at MAC Control or higher within the layer structure and have its own CFI.

**Response:**
ACCEPT IN PRINCIPLE.

**Proposed resolution in Clause_148_r2p0_resolution.pdf. Changes are marked with #657 in the right boxes.**

**NOTE:** Intention was to specify that PLCA is not a replacement of CSMA/CD but instead it's a method that works in conjunction with CSMA/CD functions.

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**Comment ID** 658
Thompson, Geoff GraCaSI S.A.

**Comment Type** TR
**Comment Status** R

**Comment:** The proposed changes in this clause are at odds with the statement in the approved criteria on compatibility that states "As a PHY amendment to IEEE Std 802.3, the proposed project will use (the existing) MII".

**Suggested Remedy:**
Remove clause 148 and related text from the draft. If PLCA is desired as an addition to the standards family it should be placed appropriately at MAC Control or higher within the layer structure and have its own CFI.

**Response**
REJECT. Group to discuss.

**Proposed resolution in Clause_148_r2p0_resolution.pdf. Changes are marked with #658 in the right boxes.**

**NOTE:** Intention was to specify that PLCA is not a replacement of CSMA/CD but instead it's a method that works in conjunction with CSMA/CD functions.

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**Comment ID** 659
Thompson, Geoff GraCaSI S.A.

**Comment Type** TR
**Comment Status** R

**Comment:** There is no AUI defined in the draft. The AUI is an essential element of all 802.3 10 Mb/s PHY specifications. This is particularly true in the case of half duplex applications where it is used as a timing test point for calculating the delay used in CSMA/CD round trip timing sums (Ref: Table 4-2). An AUI definition point is also needed (even if it never appears externally on a piece of equipment) in order to be able to include the cl. 9 repeater in networking configurations. Even though (almost) no one else remembers it or thinks it is relevant, the cl. 9 repeater is a valuable tool in the network kit. It has a very, very low transistor count when compared to a bridge and much lower delay (~ 9 bit times) and jitter (not dependent on packet length) such that it is a superior element for time sensitive applications in terms of cost and performance.

**Suggested Remedy:**
Define and specify the AUI (no connector specification required) for the 10BASE-T1S PHY for use as a functional test point, a timing test point and a standardized element edge for IP implementations of the PHY.

**Response**
REJECT.

**Consensus not to change. Refer to motion 9 from Unconfirmed_minutes_3cg_0918.pdf**

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**Comment ID** 661
Thompson, Geoff GraCaSI S.A.

**Comment Type** TR
**Comment Status** R

**Comment:** When we added this note we thought we were through with 10 Mb/s and half duplex forever. That appears not to be the case.

**Suggested Remedy:**
Remove the note and update clause 13 appropriately to add 10BASE-T1S as a full fledged member of the 10 Mb/s CSMA/CD family.

**Response**
REJECT.

**Consensus not to change. Refer to motion 9 from Unconfirmed_minutes_3cg_0918.pdf**

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**Y:** 27  
**N:** 2  
**A:** 7  

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**TYPE:** TR/technical required  ER/editorial required  GR/general required  T/technical  E/editorial  G/general
**COMMENT STATUS:** D/dispatched  A/accepted  R/rejected  RESPONSE STATUS: O/open  W/written  C/closed  U/unsatisfied  Z/withdrawn
**SORT ORDER:** Comment ID

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**3/12/2019  2:16:57 PM**