

## gement Parameters for 10 Mb/s Operation and Associated Power Delivery over a Single Balanced Pair of

CI 01 SC 1.4.389a P 29 L 16 # 196  
Kim, Yong NIO

Comment Type TR Comment Status A Big Ticket Item - Definitions

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.

*SuggestedRemedy*

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

Response Response Status W

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.)"

CI 146 SC 146.20 P 239 L 17 # 197  
Kim, Yong NIO

Comment Type ER Comment Status A Editorial

DCR used the 1st time. Customary to expand the acronym even if it is stated in acronym section in CL1

*SuggestedRemedy*

pls do so. "Direct Current Resistance". Also consider deleting DCR in CL1 if this term is purely local use in this informative annex.

Response Response Status W

ACCEPT IN PRINCIPLE.

Replace "DCR" with "direct current resistance (DCR) "

CI 22 SC 22.2.2.4 P 33 L 13 # 198  
Kim, Yong NIO

Comment Type TR Comment Status R Big Ticket Item - Definitions

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.

*SuggestedRemedy*

Reverse all proposed modifications to CL22 that effect shall shatement 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 [http://www.ieee802.org/3/cg/public/Nov2018/Kim\\_3cg\\_01a\\_1118.pdf](http://www.ieee802.org/3/cg/public/Nov2018/Kim_3cg_01a_1118.pdf) for a complex context.

Response Response Status W

REJECT.

Commenter fails to identify a specific compatibility problem or specific PICS items. Compatibility is satisfied and has been demonstated. Refer to [http://www.ieee802.org/3/cg/public/Jan2019/baggett\\_3cg\\_01\\_0119.pdf](http://www.ieee802.org/3/cg/public/Jan2019/baggett_3cg_01_0119.pdf), <http://www.ieee802.org/3/cg/public/July2018/PLCA%20overview.pdf> (slides 16 through 21), and [http://www.ieee802.org/3/cg/public/Jan2019/Tutorial\\_cg\\_0119\\_final.pdf](http://www.ieee802.org/3/cg/public/Jan2019/Tutorial_cg_0119_final.pdf) (slides 29, 34, 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).

## gement Parameters for 10 Mb/s Operation and Associated Power Delivery over a Single Balanced Pair of

CI 30 SC 30.2.2.1 P 34 L 13 # 199  
Kim, Yong NIO

Comment Type TR Comment Status R 3ig 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 (1.4.391). RS in Physical Layer but not in PHY. So by definition, oPLCA CANNOT be in oPHYEntity. Note: look at other RS related entities in Fig 30-3 to see the consistency

## SuggestedRemedy

Change the text so that the oPLCA is in oMAC (not oPHY), and make other appropriate changes

Response Response Status W

REJECT.

PLCA management was moved under the PHY entity in response to satisfied TR comment 301 on initial working group ballot.

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.

CI 30 SC 30.2.3 P 35 L 37 # 200  
Kim, Yong NIO

Comment Type TR Comment Status R 3ig 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 (1.4.391). RS in Physical Layer but not in PHY. So by definition, oPLCA CANNOT be in oPHYEntity. Note: look at other RS related entities in Fig 30-3 to see the consistency

## SuggestedRemedy

Move oPLCA from below oPHY and locate it below oMAC

Response Response Status W

REJECT.

PLCA management was moved under the PHY entity in response to satisfied TR comment 301 on initial working group ballot.

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.

## gement Parameters for 10 Mb/s Operation and Associated Power Delivery over a Single Balanced Pair of

CI 30 SC 30.2.3 P 34 L 19 # 201  
Kim, Yong NIO

Comment Type ER Comment Status R Editorial

The editing instruction says "Replace Figure 30-3 to add oPLCA as follows". Shouldn't it be "Change Figure.." Meaning allow other projects to change this Figure without such change being lost?

## SuggestedRemedy

Consider use of "Change"

Response Response Status W

REJECT.

The use of the replace editing instruction is aligned with the text on page 26 that says, "Replace is used to make changes in figures or equations by removing the existing figure or equation and replacing it with a new one." A Change instruction would required the use of underlines and strikethroughs, which are impractical for figure blocks. Subsequent projects can change or replace this figure as needed.

CI 30 SC 30.3.9.1.2 P 38 L 28 # 202  
Kim, Yong NIO

Comment Type ER Comment Status A PLCA

"..aPLCAStatus is driven by plca\_status variable.." The word "driven" is poor choice of word - does not define how plca\_status variable value maps to aPLCAStatus.

## SuggestedRemedy

Use "equal" or "same as" or other words that offer more explicit meaning

Response Response Status W

ACCEPT IN PRINCIPLE.

Replace "is driven by" with "maps to".

Provide editorial license to align this text in other places.

(Editor's note: This is the common language used in clause 30.)

CI 30 SC 30.3.9.2.5 P 39 L 31 # 204  
Kim, Yong NIO

Comment Type ER Comment Status A PLCA

"for a specific LocalNodeID" the word "specific" is not clear. "aPLCATransmitOppotunity maps to the duration", the word "maps" is not clear. "See 148.4.5.4 for further information", "for further information" is not used, just "See <ref>..".

## SuggestedRemedy

Suggest using "given" instead of "specific", use "related" instead of "maps", and delete "for further information"

Response Response Status W

ACCEPT IN PRINCIPLE.

Replace, "a specific LocalNodeID" with "the node".

Delete "for further information".

CI 30 SC 30.3.9.2.7 P 39 L 47 # 205  
Kim, Yong NIO

Comment Type TR Comment Status R PLCA Burst

aPLCABurstTimer 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-complaint 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.

## SuggestedRemedy

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 W

REJECT.

This appears to be two comments in one.

1 (re:timer naming): Commenter provides insufficient information for remedy.

aPLCABurstTimer 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.

## gement Parameters for 10 Mb/s Operation and Associated Power Delivery over a Single Balanced Pair of

CI 147 SC 147.1 P 167 L 17 # 206  
Kim, Yong NIO

Comment Type TR Comment Status A Big Ticket Item - Multidrop

Only place the "multidrop mode" is defined 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.

*SuggestedRemedy*

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 Response Status W

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.

CI 147 SC 147.1 P 167 L 17 # 207  
Kim, Yong NIO

Comment Type TR Comment Status A Mixing Segment

". multiple link partners connected to a mixing segment." makes little sense -- I believe this is technically incorrect. Link partner refers to P2P link partner (the statement is duplex agnostic)

*SuggestedRemedy*

suggesting use of "..multiple nodes connected." or if "partner" idea has some other meaning that has to be conveyed, do so explicitly,

Response Response Status W

ACCEPT IN PRINCIPLE.  
Change "multiple link partners connected to a mixing segment" at page 167/16-17 to "multiple stations connected to a mixing segment"

CI 147 SC 147.3.7 P 184 L 5 # 209  
Kim, Yong NIO

Comment Type TR Comment Status A Editorial

Optional support for RS layer, separated from the PHY via xMII and PCS does not seem to have any existing interface to convey message primitives referred to here. Please describe HOW it is conveyed from PHY to RS.

*SuggestedRemedy*

Please point out the message passing interface that conveys these additional and optional messages between PHY and RS -- in which case, this comment will be withdrawn. Or describe how these messages are conveyed.

Response Response Status W

ACCEPT IN PRINCIPLE.  
(commenter appears confused by an editorial error which left optional support of PLCA RS separated from the text it applied to)  
Accommodated by comment #190.  
Resolution of comment #190 is:  
ACCEPT IN PRINCIPLE.  
Move all text at page 188/31-48 (effectively the headers and content of sub-clauses "147.3.8.3 Generation of BEACON indication" and "147.3.8.4 Generation of COMMIT indication") before sub-clause "147.3.8 Optional support for PCS status generation", turning those into "147.3.7.1 Generation of BEACON indication" and "147.3.7.2 Generation of COMMIT indication"

## gement Parameters for 10 Mb/s Operation and Associated Power Delivery over a Single Balanced Pair of

CI 147 SC 147.1 P 167 L 12 # 210  
Kim, Yong NIO

Comment Type TR Comment Status R Big Ticket Item - CSD

Really a CSD issue: Among the 10BASE-T1S three mode of operation -- mandatory - half-duplex P2P, optional - half-duplex P2MP, optional - full-duplex P2P, one could argue the mandatory mode of operation, thus only one required to claim conformance, has the least broad market potential. Just as a reminder -- half duplex P2P broad market, typically associated with star-wired multi-port repeater has been rejected by rejecting operation with CL9 repeaters.

## SuggestedRemedy

Consider deleting the P2P half-duplex mandatory and upgrade one of the other modes to mandatory, OR justify why P2P half-duplex still has broad market potential claimed in CSD. OR, the intent is for P2P half-duplex to be mandatory, and at least one of the two remaining modes mandatorily implemented, then correct the text and objectives as appropriate (and CSD if appropriate). [Remember each of these "mode" is a new PHY.]. By doing mandatory to be 1 + 2 or 1 + 3 but not 1 alone, you may also avoid broad market potential challenge on 1 only

Response Response Status W

REJECT.

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.

CI 45 SC 45.2.3.68d.1 P 55 L 27 # 211  
Kim, Yong NIO

Comment Type TR Comment Status A PLCA

PLCA Support (3.2292.15) means there is a 10BASE-T1S PHY and 10BASE-T1S PLCA PHY. So is the PLCA RS function or RS, PCS, and possibly PMA function? Based on this setting, it seems to indicate that PLCA is not limited to RS. It would be good to clarify where all the layers PLCA optional feature/function/option reside

## SuggestedRemedy

Either delete this, or clarify which layer PLCA resides.

Response Response Status W

ACCEPT IN PRINCIPLE.

Replace, "indicates the PCS does not support PLCA RS required functions"

with, "indicates the PCS does not support the encodings of BEACON and COMMIT".

CI 45 SC 45.2.3.68f P 56 L 18 # 212  
Kim, Yong NIO

Comment Type ER Comment Status A PLCA

Description says "...remote jabber errors received.." Should say "collision"

## SuggestedRemedy

My preference is "collisions" not "physical collision" (I have a separate comment WRT this)

Response Response Status W

ACCEPT IN PRINCIPLE.

Replace, "16 bits field counting the number of remote jabber errors received since last read of this register"

with, "16 bit field counting each time a transmission initiated locally results in a corrupted signal at the MDI since last read of this register"

## gement Parameters for 10 Mb/s Operation and Associated Power Delivery over a Single Balanced Pair of

CI 45 SC 45.2.3.68f.1 P 56 L 25 # 213  
Kim, Yong NIO  
Comment Type ER Comment Status A PLCA  
".i.e., excluding the ones triggered by the optional PLCA RS)." makes little sense. How do you exclude events in RS in PHY, and also "triggered" is vague. Please clarify.  
SuggestedRemedy  
Please clarify how RS layer events could be excluded in PHY (via references may be) or some other way.  
Response Response Status W  
ACCEPT IN PRINCIPLE.  
Replace, "Bits 3.2294.15:0 reports the number of physical collisions (i.e., excluding the ones triggered by the optional PLCA RS) occurred since last time register 3.2294 was read."  
with, "Bits 3.2294.15:0 count up each time a transmission initiated locally results in a corrupted signal at the MDI."

CI 45 SC 45.2.3.68f P 56 L 18 # 214  
Kim, Yong NIO  
Comment Type TR Comment Status R PLCA  
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.  
SuggestedRemedy  
Please delete this counter, or reject this comment and point me to the rationale and utility of this counter.  
Response Response Status W  
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.

CI 45 SC 45.2.7.25 P 57 L 29 # 215  
Kim, Yong NIO  
Comment Type TR Comment Status A PLCA  
Note -- this comment may be on the text that did not change from D2.1 to D2.2. in both 7.527.5 and 7.527.4 "...link partner is advertising that the PHY has PLCA ability" has a concerns. PHY is between PCS to MDI. RS is not in PHY. Also referenced PHY should be 10BASE-T1S PHY, unless it is the intention to auto-negotiate PLCA ability with other PHY. Only one reference to PHY is in that form. Also I thought PLCA is only relevant to P2MP shared medium operation, where autonegotiation is not appropriate.  
SuggestedRemedy  
Please change 1) PHY to 10BASE-T1S PHY in five places, 2) add PLCA appropriate layer, RS. In four places. I'll search, but there is a reference to P2MP auto-negotiation function, I would live to get it. Before being satisfied with this comment, I need to see why autonegotiation of shared medium feature is needed (or even how it would work).

Response Response Status W  
ACCEPT IN PRINCIPLE.

Resolved by comment #148. The resolution to comment #148 is:

- 1) remove A20 and A21 entries from table 98B-1
- 2) delete "7.526.5 and 7.526.4" entries from table 45-330a
- 3) delete subclause 45.2.7.25.7 and 45.2.7.25.8
- 4) remove entries AM102 and AM103 from table 45.5.3.9 on page 71
- 5) delete "7.527.5 and 7.527.4" entries from table 45-330b

## gement Parameters for 10 Mb/s Operation and Associated Power Delivery over a Single Balanced Pair of

CI 45 SC 45.2.7.26 P 59 L 30 # 216  
Kim, Yong NIO

Comment Type TR Comment Status A PLCA

Note -- this comment may be on the text that did not change from D2.1 to D2.2. in both 7.527.5 and 7.527.4 ".link partner is advertising that the PHY has PLCA ability" has a concerns. PHY is between PCS to MDI. RS is not in PHY. Also referenced PHY should be 10BASE-T1S PHY, unless it is the intention to auto-negotiate PLCA ability with other PHY. Also I thought PLCA is only relevant to P2MP shared medium operation, where autonegotiation is not appropriate.

*SuggestedRemedy*

Please change 1) PHY to 10BASE-T1S PHY in six places, 2) add PLCA appropriate layer, RS. In four places. I'll search, but there is a reference to P2MP auto-negotiation function, I would live to get it. Before being satisfied with this comment, I need to see why autonegotiation of shared medium feature is is needed (or even how it would work).

Response Response Status W

ACCEPT IN PRINCIPLE.

Resolved by comment #148. The resolution to comment #148 is:

- 1) remove A20 and A21 entries from table 98B-1
- 2) delete "7.526.5 and 7.526.4" entries from table 45-330a
- 3) delete subclause 45.2.7.25.7 and 45.2.7.25.8
- 4) remove entries AM102 and AM103 from table 45.5.3.9 on page 71
- 5) delete "7.527.5 and 7.527.4" entries from table 45-330b

CI 45 SC 45.2.7.25.8 P 58 L 30 # 217  
Kim, Yong NIO

Comment Type TR Comment Status A PLCA

Note -- this comment may be on the text that did not change from D2.1 to D2.2. This is the ONLY place where "PLCA coordinator" is optionally present, or conversely, it is not clear whether every PLCA RS must be able to serve as the coordinator for conformance. And this caused entry to 98B.3. The referenced 148.2 does not describe optional presence. Ideally CL148.2 describes this clearly -- whether this is an optional feature or optional operation or whatever. Management clause is not the good place to put such specification (and also as stated, it is being grossly inferred by this commentor).

*SuggestedRemedy*

Clarify the optional/mandatory intent of "PLCA coordinator " in CL148 RS.

Response Response Status W

ACCEPT IN PRINCIPLE.

Resolved by comment #148. The resolution to comment #148 is:

- 1) remove A20 and A21 entries from table 98B-1
- 2) delete "7.526.5 and 7.526.4" entries from table 45-330a
- 3) delete subclause 45.2.7.25.7 and 45.2.7.25.8
- 4) remove entries AM102 and AM103 from table 45.5.3.9 on page 71
- 5) delete "7.527.5 and 7.527.4" entries from table 45-330b



## gement Parameters for 10 Mb/s Operation and Associated Power Delivery over a Single Balanced Pair of

CI 45 SC 45.2.7.25 P 57 L 4 # 218  
Kim, Yong NIO

Comment Type TR Comment Status A AutoNeg

Note -- this comment may be on the text that did not change from D2.1 to D2.2. The bit 7.526.15 describes 10BASE-T1L full duplex ability advertisement. Question? Is there any other mode? Then this is grossly unnecessary. Please consider deleting this bit.

*SuggestedRemedy*

Please consider deleting this bit and corresponding bit in 7.527. Case and point, there is no effect to CL146 behavior from this value.

Response Response Status W

ACCEPT IN PRINCIPLE.

Resolved by comment #158. The resolution to comment #158 is:

Replace (P57, L4),

"1 = Advertise that the 10BASE-T1L PHY has full duplex ability (default)  
0 = Do not advertise that the 10BASE-T1L PHY has full duplex ability"

with,  
"1 = Advertise that the PHY has 10BASE-T1L full duplex ability (default)  
0 = Do not advertise that the PHY has 10BASE-T1L full duplex ability",

in the Description for bit 7.526.15 in Table 45-330a, and similarly for the link partner bit 7.527.15 in Table 45-330b. The descriptions of the bits in the text are clear.

CI 45 SC 45.2.13.4 P 64 L 64 # 220  
Kim, Yong NIO

Comment Type TR Comment Status R PLCA Burst

Related to my other comment on 30.2.9.2.7 (and should consider together), 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-complaint 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.

Response Response Status W

REJECT.

This appears to be two comments in one.

1 (re:timer naming): Commenter provides insufficient information for remedy. aPLCABurstTimer 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.

CI 45 SC 45.2.13.1.1 P 62 L 43 # 221  
Kim, Yong NIO

Comment Type TR Comment Status A PLCA

"The PHY shall be place in PLCA mode.". PLCA is in RS. PHY is between PCS and MDI. Physical layer is between RS and MDI. Please make the appropriate change here and also in the whole document that seem to be inconsistent as to where PLCA resides.

*SuggestedRemedy*

"The RS shall be palced in PLCA mode." would be correct statement.

Response Response Status W

ACCEPT IN PRINCIPLE.

Replace, "The PHY shall be placed in PLCA mode of operation when bit 28.0.15 is set to one."

with, "Bit 28.0.15 shall map to plca\_en (see 148.4.5.2). When bit 28.0.15 is set to one, plca\_en = TRUE. When bit 28.0.15 is set to zero, plca\_en = FALSE."



## gement Parameters for 10 Mb/s Operation and Associated Power Delivery over a Single Balanced Pair of

CI 00 SC 0 P 0 L 0 # 223  
Kim, Yong NIO

Comment Type TR Comment Status A Big Ticket Item - Definitions

Use of the word "collision" and use of term "logical collision" "local collision", and "physical collision. This is a pile on comment to unresolved D2.0 draft comment. Use of terms other than just "collisoin" in .3cg bothered me. This time, I went through some research. 1.1.2.1 Half duplex operation states "...if... message collides...to ensure propogation of collision through out the system." states collision is system wide. 1.4.202 collision: A condition that results from concurrent transmission from multiple data terminal equipment (DTE) sources wihtin an 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 collsion domain and both transmit at the same time, a collision will occur. MAC sublayers separated by a repater..." All of these prompt whether .3cg's use of "logical collision" or "local collision" are proper use of the word collision. "physical collision" should just be "collsion". In addition, the use of "logical collision" 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 "physical collsion" to just "collsion" and use some other term for "logical collision" and "local collision" if that remains in the draft. Cannot commup with a good suggestion for the alternate word, since the "local collision" function within .3cg in my mind is access control mechanism.

Response Response Status W

ACCEPT IN PRINCIPLE.

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."

CI 146 SC 146.3.4.2 P 130 L 38 # 226  
Kim, Yong NIO

Comment Type ER Comment Status A EZ

".control SM.training". I presume SM stands for state machine. Preferred phrase is "state diagram".

*SuggestedRemedy*

Please do careful global search and replace all appropriate SM with "state diagram"

Response Response Status W

ACCEPT.

CI 146 SC 146.4.4 P 134 L 134 # 228  
Kim, Yong NIO

Comment Type TR Comment Status A Training

"If the time to reach link\_status = OK exceeds 3030 ms, and Auto-Negotiation is present and enabled, the link\_fail\_inhibit timer will be considered failed by the Auto-Negotiation Arbitration state diagram" is a bit awkward and inconsistent with CL98.5.2 pg 78 line 40 that says 3030~3090 ms. The previous statement "The time to reach link\_status=ok shall be less than 3030 ms" was clear but not an appropriate "shall"

*SuggestedRemedy*

Please fix 3030 ms vs 3030~3090 ms (98.5.2). Also consider rephrasing referenced text in 146.4.4 to be more clear.

Response Response Status W

ACCEPT IN PRINCIPLE.

Change P134 L38:

"If the time to reach link\_status = OK exceeds 3030 ms, and Auto-Negotiation is present and enabled, the link\_fail\_inhibit timer will be considered failed by the Auto-Negotiation Arbitration state diagram (see Figure 98-7)."

to:

"If the time to reach link\_status = OK exceeds the duration of the link\_fail\_inhibit timer used in the Auto-Negotiation Arbitration state diagram (see Figure 98-7), the training may be considered failed."

## gement Parameters for 10 Mb/s Operation and Associated Power Delivery over a Single Balanced Pair of

CI 146 SC 146.8.1 P 153 L 3 # 231  
Kim, Yong NIO

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. Tjhis section does NOT specify MDI. It provides (abeit 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)

## SuggestedRemedy

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 W

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.

CI 147 SC 147.2.4.1 P 171 L 19 # 236  
Kim, Yong NIO

Comment Type ER Comment Status A PCS

FALSE and TRUE values are not friendly. FAIL and OK would be better. WAITING and CONNECTED, perhaps.

## SuggestedRemedy

Pick better value names than FALSE and TRUE.

Response Response Status W

ACCEPT IN PRINCIPLE.

1. Change "TRUE" to "OK" at page 171/19
  2. Change "FALSE" to "NOT\_OK" at page 171/20
  3. Change "The pcs\_status is reported as TRUE when" at page 186/47 to "The pcs\_status is reported as OK when"
  4. Change "The pcs\_status is reported as FALSE" at page 187/1 to "The pcs\_status is reported as NOT\_OK"
  5. Change "Values: TRUE or FALSE" at page 187/40 to "Values: OK or NOT\_OK"
  6. Change "Counter of HB when pcs\_status is TRUE." at page 187/52 to "Counter of HB when pcs\_status is OK."
  7. Change "pcs\_status <= FALSE" at page 187/8-9 to "pcs\_status <= NOT\_OK"
  8. Change "pcs\_status <= TRUE" at page 187/25-26 to "pcs\_status <= OK"
  9. Change "Counter of HB when pcs\_status is FALSE" at page 188/2 to "Counter of HB when pcs\_status is NOT\_OK"
  10. Change "Number of HB required to signal pcs\_status = TRUE" at page 188/18 to "Number of HB required to signal pcs\_status = OK"
  11. Change "Number of HB required to signal pcs\_status = FALSE" at page 188/22 to "Number of HB required to signal pcs\_status = NOT\_OK"
  12. Change "pcs\_status \*" at page 191/18 to "pcs\_status = OK \*"
  13. Change "!pcs\_status +" at page 191/24 to "pcs\_status = NOT\_OK +"
  14. Change "PCS\_STATUS.indication primitive shall convey FALSE" at page 184/11-12 to "PCS\_STATUS.indication primitive shall convey NOT\_OK"
- Editorial license to find and fix any additional occurrences as necessary

## gement Parameters for 10 Mb/s Operation and Associated Power Delivery over a Single Balanced Pair of

CI 147 SC 147.3.2.2 P 176 L 22 # 237  
Kim, Yong NIO

Comment Type TR Comment Status R PCS

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

## SuggestedRemedy

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

Response Response Status W

REJECT.  
tx\_cmd is implemented regardless of the PLCA RS layer option, and T & I are necessary to implement heartbeat (147.3.8)

CI 147 SC 147.3.2.4 P 178 L 23 # 239  
Kim, Yong NIO

Comment Type ER Comment Status A EZ

txcnt is not used anywhere. At least Acrobat search function could not find it. Forward or backward. If not used, delete.

## SuggestedRemedy

Delete or find the error and fix it.

Response Response Status W

ACCEPT IN PRINCIPLE.  
Delete the content of "147.3.2.4 Counters" and replace it with the editor's note found under "147.5.4.5 Transmit clock frequency" that states the following:

=====

Editor's Note (to be removed prior to publication):

This clause has been deleted, and will be removed with renumbering at draft 3.0.

=====

CI 147 SC 147.3.3.2 P 179 L 50 # 241  
Kim, Yong NIO

Comment Type TR Comment Status R PCS

"If Multidrop mode MDIO register bit 1.2297.10 is set to one and multidrop mode is supported according to bit 1.2298.10 then duplex\_mode is set to DUPLEX\_HALF" does not cover the case of half-duplex and P2P -- the mandatory operation.

## SuggestedRemedy

Please add text to include P2P half, or exclude. 2 out of three modes are covered at present.

Response Response Status W

REJECT.  
Commenter is incorrect, as all cases are covered in the full paragraph. "If Multidrop mode MDIO register bit 1.2297.10 is set to one and multidrop mode is supported according to bit 1.2298.10 then duplex\_mode is set to DUPLEX\_HALF." (commenter's quoted text - says multidrop mode supported and enabled sets duplex mode to DUPLEX\_HALF). Text then continues, "Else, if Auto-Negotiation is enabled then duplex\_mode is set by the priority resolution defined in 98B.4." - this covers point to point and half-duplex when Auto-Negotiation is active. Then it continues and covers all other cases - "Otherwise, this variable is set by MDIO register bit 3.2291.8. If MDIO is not implemented, duplex\_mode is set by the means of an equivalent interface."

CI 147 SC 147.3.5 P 183 L 21 # 242  
Kim, Yong NIO

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.

## SuggestedRemedy

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

Response Response Status W

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.

## gement Parameters for 10 Mb/s Operation and Associated Power Delivery over a Single Balanced Pair of

CI 147 SC 147.3.5 P 183 L 26 # 243  
Kim, Yong NIO

Comment Type TR Comment Status R PCS

"The PHY shall assert CRS in presence of a signal resulting from a collision between two or more stations." combined with a) WRT col, mandates a behavior that cannot be conformance tested. Assert CRS before COL, after COL, how long after collision condition on the medium, and when to deassert, by when? Could it deassert 256 bit time later?

*SuggestedRemedy*

this specifciation is grossly incomplete. Please complete it. I expect technically complete draft to include specifications on carrier sense from collision.

Response Response Status W

REJECT.  
CRS is already specified in Clause 22.2.2.11 - It is asserted before or coincidently with COL and de-asserted after or coincidently with COL. See figure 22-11.  
COL is defined in 22.2.2.12 to be asserted for the duration of the collision on the line. Its assertion shall occur within one slotTime as specified in Clause 4 to avoid a late collision error. See e.g. Figure 4-5.

CI 147 SC 147.3.6 P 183 L 30 # 244  
Kim, Yong NIO

Comment Type TR Comment Status A 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.

*SuggestedRemedy*

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

Response Response Status W

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"

CI 147 SC 147.3.8 P 184 L 7 # 245  
Kim, Yong NIO

Comment Type TR Comment Status A PCS

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.

*SuggestedRemedy*

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

Response Response Status W

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."

## gement Parameters for 10 Mb/s Operation and Associated Power Delivery over a Single Balanced Pair of

CI 147 SC 147.3.8 P 184 L 7 # 246  
Kim, Yong NIO

Comment Type TR Comment Status R PCS

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.

*SuggestedRemedy*

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

Response Response Status W

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.

CI 147 SC 147.3.8.3 P 188 L 33 # 248  
Kim, Yong NIO

Comment Type TR Comment Status A EZ

"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.

*SuggestedRemedy*

Please consider and do one of the two choices.

Response Response Status W

ACCEPT IN PRINCIPLE.

Replace,  
"when PLCA RS operations"

with,  
"when optional PLCA RS operations"

CI 147 SC 147.3.8.4 P 188 L 42 # 249  
Kim, Yong NIO

Comment Type TR Comment Status A EZ

"In compliance to 148.4.4.2.2, when PLCA RS operations are supported and enabled, the PHY shall notify the RS of a received COMMIT 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.

*SuggestedRemedy*

Please consider and do one of the two choices. Could be considered together with my comment to 147.3.8.3

Response Response Status W

ACCEPT IN PRINCIPLE.

Replace,  
"when PLCA RS operations"

with,  
"when optional PLCA RS operations"

## gement Parameters for 10 Mb/s Operation and Associated Power Delivery over a Single Balanced Pair of

CI 147 SC 147.5.5.1 P 196 L 26 # 250  
Kim, Yong NIO  
Comment Type ER Comment Status R Editorial  
sub clause title does not match the content.  
SuggestedRemedy  
Receiver characteristics, or receive bit error, or something equivalent that convey the sense of this text content  
Response Response Status W  
REJECT.  
This is the title that IEEE Std 802.3-2018 uses for this content on BASE-T and BASE-T1 PHY clauses (e.g., clauses 14.3.1.3.2, 23.5.1.3.2, 32.6.1.3.4, 40.6.1.3.2, 55.5.4.1, 96.5.5.1, 97.5.4.1, 113.5.4.1, and 126.5.4.1).

CI 147 SC 147.5.5.1 P 196 L 31 # 251  
Kim, Yong NIO  
Comment Type ER Comment Status A PMA Electrical  
Text makes little sense "This specification can be verified by a frame error ratio less than 7.8 10-7 for 800 octet frames with minimum IPG or greater than 220 octet IPG."  
SuggestedRemedy  
Change to "...the minimum IPG or greater, up to 220 octet IPG". Or if the suggestion is not technically correct, correct it before implementing.  
Response Response Status W  
ACCEPT IN PRINCIPLE.  
Delete "with minimum IPG or greater than 220 octet IPG"

CI 147 SC 147.6.1 P 196 L 41 # 252  
Kim, Yong NIO  
Comment Type TR Comment Status R AutoNeg  
"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)  
SuggestedRemedy  
Please conditionally (delete P2P HD) consider deleting the referenced sentence.  
Response Response Status W  
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.

## gement Parameters for 10 Mb/s Operation and Associated Power Delivery over a Single Balanced Pair of

CI 98 SC 98B.3 P 235 L 28 # 253  
Kim, Yong NIO

Comment Type TR Comment Status A PLCA

PLCA ability and PLCA coordinator ability are associated ONLY with 10BASE-T1S half duplex. Please make it user friendly by associating the set of abilities appropriately.

*SuggestedRemedy*

Change PLCA ability to PLCA + 10BASE-T1S half duplex ability. And PLCA coordinator ability to PLCA coordinator + PLCA + 10BASE-T1S half duplex ability. The same three bits.

Response Response Status W

ACCEPT IN PRINCIPLE.

Resolved by comment #148. The resolution to comment #148 is:

- 1) remove A20 and A21 entries from table 98B-1
- 2) delete "7.526.5 and 7.526.4" entries from table 45-330a
- 3) delete subclause 45.2.7.25.7 and 45.2.7.25.8
- 4) remove entries AM102 and AM103 from table 45.5.3.9 on page 71
- 5) delete "7.527.5 and 7.527.4" entries from table 45-330b

CI 147 SC 147.6.1 P 196 L 45 # 254  
Kim, Yong NIO

Comment Type TR Comment Status A AutoNeg

"If both PHYs advertise the ability to support 10BASE-T1S half duplex communication during Auto-Negotiation, then 10BASE-T1S half duplex communication shall be enabled for both PHYs by the management entity, otherwise it shall be disabled for both PHYs." This statement contradicts 98B.4 priority resolution.

*SuggestedRemedy*

Please correct whichever is incorrect. And also, the referenced text contain untestable shall -- acting on disabled.

Response Response Status W

ACCEPT IN PRINCIPLE.

In 147.6.1,  
Replace, "If both PHYs advertise the ability to support 10BASE-T1S half duplex communication during Auto-Negotiation, then 10BASE-T1S half duplex communication shall be enabled for both PHYs by the management entity, otherwise it shall be disabled for both PHYs."

with, "When Auto-Negotiation is used, Technology Ability Field bit A1 shall contain a one if the PHY is supporting and advertising 10BASE-T1S full duplex ability and it shall contain a zero if 10BASE-T1S full duplex communication is not supported or not advertised. See 98B.4 for priority resolution."



## gement Parameters for 10 Mb/s Operation and Associated Power Delivery over a Single Balanced Pair of

CI 147 SC 147.9.1 P 198 L 48 # 257  
Kim, Yong NIO

Comment Type TR Comment Status A MDI

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-TSL. Tjhis section does NOT specify MDI. It provides (abeit useful) suggestions and diagrams but no specification. Please decide whether this project has an MDI (or set of MDIs). And if MDI is indeeed specified, please change the CL title to include MDI (currently just ....PMA)

*SuggestedRemedy*

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 Response Status W

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."

CI 148 SC 148.1 P 213 L 12 # 258  
Kim, Yong NIO

Comment Type ER Comment Status A PLCA

"When disabled, the system operates as specified in Clause 22 RS." is meaningless, since CL22 contains proposed modifications for PLCA support, including existing systems to take no action new beahvior.

*SuggestedRemedy*

Did you mean to say CL22 in 802.3-2018 and prior? The statement would be relevant if all proposed changes to CL22 is deleted.

Response Response Status W

ACCEPT IN PRINCIPLE.

Delete,

"When disabled, the system operates as specified in Clause 22 RS."

CI 148 SC 148.2 P 213 L 48 # 259  
Kim, Yong NIO

Comment Type TR Comment Status A PLCA

the node with ID = 0 (PLCA Coordinator) specification is absent. Searching for coordinator finds this reference and AN section, and no where any specification WRT to the coordinator function.

*SuggestedRemedy*

Without the coorinator function, how it is assigned, the draft is incomplete. CSD concern.

Also see slide 11~13 of

[http://www.ieee802.org/3/cg/public/Nov2018/Kim\\_3cg\\_01a\\_1118.pdf](http://www.ieee802.org/3/cg/public/Nov2018/Kim_3cg_01a_1118.pdf)

Response Response Status W

ACCEPT IN PRINCIPLE.

Resolved by comment #262. The resolution to comment #262 is:

ACCEPT IN PRINCIPLE.

Replace, "Transmit opportunities are generated in a round-robin fashion every time the node with ID = 0 (PLCA coordinator) signals a BEACON on the medium, indicating the start of a new cycle."

with, "Transmit opportunities are generated in a round-robin fashion. The node with ID = 0 signals a BEACON on the medium. Reception of a BEACON indicates the start of a new cycle of transmit opportunities."

Replace, "cycle" with, "cycle of transmit opportunities" at P219 L26, and P219 L29.

Replace, "PLCA cycle" with, "cycle of transmit opportunities" on P218 L41.

## gement Parameters for 10 Mb/s Operation and Associated Power Delivery over a Single Balanced Pair of

CI 98 SC 98B.3 P 235 L 28 # 260  
Kim, Yong NIO

Comment Type TR Comment Status A PLCA

Autonegotiation of PLCA coordinator ability does not have ANY stated function (Or, it's somewhere and I missed it). PLCA's claimed benefit is for "multidrop" performance, and AN is for link segment.

*SuggestedRemedy*

Delete PLCA coordinator ability from AN (or point to a reference that states how this ability from AN is used).

Response Response Status W

ACCEPT IN PRINCIPLE.

Resolved by comment #148. The resolution to comment #148 is:

- 1) remove A20 and A21 entries from table 98B-1
- 2) delete "7.526.5 and 7.526.4" entries from table 45-330a
- 3) delete subclause 45.2.7.25.7 and 45.2.7.25.8
- 4) remove entries AM102 and AM103 from table 45.5.3.9 on page 71
- 5) delete "7.527.5 and 7.527.4" entries from table 45-330b

CI 148 SC 148.2 P 213 L 45 # 261  
Kim, Yong NIO

Comment Type ER Comment Status A Editorial

"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.

*SuggestedRemedy*

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

Response Response Status W

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"

## gement Parameters for 10 Mb/s Operation and Associated Power Delivery over a Single Balanced Pair of

CI 148 SC 148.2 P 213 L 48 # 262  
Kim, Yong NIO

Comment Type TR Comment Status A Editorial

What is "new cycle" and later "PLCA cycle"? The term is used without definition or clear reference. Also this text indicates BEACON indicates start of new cycle, but RESYNC also starts new cycle from node ID <> 0, in presumably exception handling case. Shouldn't we know how node ID =0 function (coordinator) behaves to implementj a system?

*SuggestedRemedy*  
Define or specifiy [PLCA] cycle somewhere and provide a reference to it.

Response Response Status W

ACCEPT IN PRINCIPLE.

Replace, "Transmit opportunities are generated in a round-robin fashion every time the node with ID = 0 (PLCA coordinator) signals a BEACON on the medium, indicating the start of a new cycle."

with, "Transmit opportunities are generated in a round-robin fashion. The node with ID = 0 signals a BEACON on the medium. Reception of a BEACON indicates the start of a new cycle of transmit opportunities."

Replace, "cycle" with, "cycle of transmit opportunities" at P219 L26, and P219 L29.

Replace, "PLCA cycle" with, "cycle of transmit opportunities" on P218 L41.

CI 148 SC 148.2 P 213 L 39 # 264  
Kim, Yong NIO

Comment Type TR Comment Status R PLCA

"The working principle of PLCA is that transmit opportunities on a multidrop network are granted in sequence based on a node ID unique to the local collision domain (set by the management entity)." I agree with sense of this sentence WRT to PLCA, and PLCA looks to be an alternate medium access control.

*SuggestedRemedy*  
CSD concern. Also see slide 7~10 of [http://www.ieee802.org/3/cg/public/Nov2018/Kim\\_3cg\\_01a\\_1118.pdf](http://www.ieee802.org/3/cg/public/Nov2018/Kim_3cg_01a_1118.pdf)

Response Response Status W

REJECT.

Commenter provides insufficient information for a remedy. PLCA is not a MAC.

Refer to [http://www.ieee802.org/3/cg/public/Jan2019/Tutorial\\_cg\\_0119\\_final.pdf](http://www.ieee802.org/3/cg/public/Jan2019/Tutorial_cg_0119_final.pdf)

Strawpoll #6: I support rejecting this comment with the rationale: "Commenter provides insufficient information for a remedy. PLCA is not a MAC."

Refer to [http://www.ieee802.org/3/cg/public/Jan2019/Tutorial\\_cg\\_0119\\_final.pdf](http://www.ieee802.org/3/cg/public/Jan2019/Tutorial_cg_0119_final.pdf)

Task Force: Y:19 N:1 A:6  
802.3 Voters: Y:15 N:1 A:1

CI 148 SC 148.2 P 213 L 52 # 265  
Kim, Yong NIO

Comment Type TR Comment Status R PLCA

CSMA/CD -- Carrier Sense, Multiple Access, Collision Detect. Multiple Access has to do with fairness to access the network. How does invidually and optionally enabling multiple transmit opportunities preserve fairness? I did not see any presenations in the .3cg project area nor in this draft

*SuggestedRemedy*  
CSD concern, WRT to compatibility (at the network system level, on fairness part of Ethernet).

Response Response Status W

REJECT.

Commenter provides insufficient information to identify comment with the text, and insufficient information for a remedy. The referenced text cannot be a CSD violation impacting compatibility because it is informative.

## gement Parameters for 10 Mb/s Operation and Associated Power Delivery over a Single Balanced Pair of

CI 148 SC 148.4.1 P 214 L 47 # 266  
Kim, Yong NIO

Comment Type ER Comment Status A Editorial

"Within the scope of Clause 148, the term Reconciliation sublayer (RS) is used to denote any IEEE 802.3 Reconciliation sublayer (RS) used to interface a MAC with any Physical Layer Entity supporting the PLCA capability through the MII". The use of word "any" in two places are problematic. Delete the both instances of "any" in this sentence. Otherwise, it looks to have an intention is to use PLCA with other speeds and other medium -- and if that is the case, do that in a separate CFI.

*SuggestedRemedy*

Please Delete the both instances of "any" in this sentence.

Response Response Status W

ACCEPT IN PRINCIPLE.  
Accommodated by #132.

Comment #132 resolution is:

"

Replace the quoted text with "This subclause specifies services provided by the PLCA RS as an extension to the MII RS specified in Clause 22.

"

CI 148 SC 148.4.4.1.1 P 217 L 32 # 267  
Kim, Yong NIO

Comment Type ER Comment Status R Editorial

148.4.4 says "Requirements for the PHY". The text in 148.4.4.1.1 says "The BEACON function is specified in 148.4.5.1.", And 148.4.5.1 specifies Beacon control function overall. It does NOT clearly contain requirements for support of BEACON in PHY.

*SuggestedRemedy*

Provide a better reference to only the PHY requirement that supports the PLCA function.

Response Response Status W

REJECT.

Commenter is incorrect. The remainder of 148.4.4.1.1 contains 2 "shall" requirements on the PHY (see comment #270). The reference to 148.4.5.1 mentioned in 148.4.4.1.1 is an informative reference tying the reader to how the BEACON works in the Figure 148-3 state diagram.

CI 148 SC 148.4.4 P 217 L 24 # 268  
Kim, Yong NIO

Comment Type TR Comment Status R PLCA

148.1 states "PLCA is defined for half-duplex mode of operation only. The PLCA RS is specified for operation with the PHY defined in Clause 147 (10BASE-T1S)". So perhaps 148.4.4. should reference relevant clauses in 147 -- it would be specific and reader friendly, and avoid making non-normative statements such as "PHYs are free to map the BEACON request to any suitable line coding as long as the requirements defined herein are met." in line 41. And similar comment to COMMIT, etc.

*SuggestedRemedy*

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

Response Response Status W

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.

CI 148 SC 148.4.5.1 P 218 L 32 # 269  
Kim, Yong NIO

Comment Type TR Comment Status A PLCA

"To achieve error free operation the PLCA node should be configured appropriately before transmit functions are enabled." -- While this is good thought, it is not useful unless the spec completes the thought on how we achieve that. Please delete the unnecessary text or add text to make this statement more useful

*SuggestedRemedy*

Please delete, or add text on how.

Response Response Status W

ACCEPT IN PRINCIPLE.

Insert the following after the referenced sentence,

"Appropriate configuration includes:

- a) each local\_nodeID is unique to the local collision domain,
- b) there is one and only one node with local\_nodeID = 0 on the local collision domain,
- c) the transmit opportunity timer (to\_timer) is set equal across all the nodes on the local collision domain,
- d) plca\_node\_count is set on the node with local\_nodeID = 0 to the number of nodes on the local collision domain"

## gement Parameters for 10 Mb/s Operation and Associated Power Delivery over a Single Balanced Pair of

CI 148 SC 148.4.4.1.1 P 217 L 36 # 270  
Kim, Yong NIO

Comment Type TR Comment Status A Editorial

"Upon the reception of this request, the PHY shall send a message over the media for other PHYs to decode and report to their respective RS via MII interface as specified in 22.2.2.8." -- I am probably confused. This text read by itself sounds like 22.2.2.8 compliance means getting RS state of remote node via remote PHY through PHY sending a message.

*SuggestedRemedy*

I hope you did not mean how I read it. If you agree, please correct the text -- if this sub clause is kept (I have a separate comment to consider deleting all and do tight coupling to CL147 PHY)

Response Response Status W

ACCEPT IN PRINCIPLE.

Replace "send a message over the media for other PHYs to decode and report to their respective RS via MII interface as specified in 22.2.2.8." with "encode and transmit a signal communicating the BEACON to other PHYs on the segment so that they generate a BEACON indication."

CI 148 SC 148.4.5.2 P 222 L 33 # 272  
Kim, Yong NIO

Comment Type ER Comment Status A Editorial

"helper variable, defined as.". Unnecessary text. I thought I commented this on D2.1.

*SuggestedRemedy*

Change to "Defined as.."

Response Response Status W

ACCEPT.

CI 148 SC 148.4.5.2 P 223 L 3234 # 273  
Kim, Yong NIO

Comment Type TR Comment Status R Burst Mode

CSMA/CD -- Carrier Sense, Multiple Access, Collision Detect. Multiple Access has to do with fairness to access the network. How does individually and optionally enabling multiple transmit opportunities preserve fairness? The range of 0..255 includes potential transport protocol timeouts by starving other nodes.

*SuggestedRemedy*

CSD concern, WRT to compatibility (at the network system level, on fairness part of Ethernet, and timeout concerns in upper layer transport protocols in use. Define number narrowly to practical lower bound, if this # is kept in the draft.

Response Response Status W

REJECT.

While comment mentions fairness, CSD, and compatibility, commenter provides insufficient information to connect this to the referenced text and remedy which is related to the bounds for the variable max\_bc.

In many ways, PLCA Burst mode operation is similar to half-duplex Burst mode present in 1000BASE-T.

The range of 0..255 is a reasonable number. This can be explained because the max\_bc is related to the product of the ratio between the maximum allowed packet size and the minimum allowed packet size on the network, which is ~24, and the number of nodes. Therefore for an 8 node network, max\_bc could reasonably be as big as 192.

Burst mode is designed to intentionally unbalance the fairness in favor of specific nodes to achieve better performance in specific cases. PLCA Burst mode cannot starve nodes in the network. In conclusion this is a desired (optional) feature, not a side-effect of PLCA.

Burst mode is described here

"[http://www.ieee802.org/3/cg/public/Nov2018/beruto\\_3cg\\_PLCA\\_burst\\_mode\\_revB%20.pdf](http://www.ieee802.org/3/cg/public/Nov2018/beruto_3cg_PLCA_burst_mode_revB%20.pdf)

" and one of its possible use cases is described here

"[http://www.ieee802.org/3/cg/public/Nov2018/xu\\_3cg\\_01b\\_1118.pdf](http://www.ieee802.org/3/cg/public/Nov2018/xu_3cg_01b_1118.pdf)"

## gement Parameters for 10 Mb/s Operation and Associated Power Delivery over a Single Balanced Pair of

CI 148 SC 148.4.6.4 P 228 L 51 # 274  
Kim, Yong NIO

Comment Type TR Comment Status R PLCA

Use of commit\_timer is not merited. All packets are atomically transferred above the RS. This type of counter would only be relevant if this function is implemented in PHY. If the intent is support the function in the PHY side of PCS, then make it explicit. BTW, the name is a bit misleading too. The burst\_wait\_timer or such would be more descriptive (if this comment is rejected).

*SuggestedRemedy*

Delete this timer and adjust the state machines with the traditional model of atomic transfer of whole packet.

Response Response Status W

REJECT.

The RS is below the MAC where packets are not atomically transferred.

CI 148 SC 148.4.7.4 P 230 L 15 # 275  
Kim, Yong NIO

Comment Type TR Comment Status A PLCA

It seems this timer is very much relevant to interoperability and overall system operation. So I do not believe it should be left to the implementation without an upper bound. "the duration of this timer is implementation dependent and should be at least  $2 \times (\text{to\_timer} \times \text{plca\_node\_count} + \text{beacon\_timer})$ ."

*SuggestedRemedy*

If you agree WRT to relevancy, spec the upper bound.

Response Response Status W

ACCEPT IN PRINCIPLE.

Replace,

"Duration: the duration of this timer is implementation dependent and should be at least  $2 \times (\text{to\_timer} \times \text{plca\_node\_count} + \text{beacon\_timer})$ ."

with,

"Duration: the duration of this timer is 130 090 bit times, which is  $2 \times (\text{max to\_timer} \times \text{max plca\_node\_count} + \text{beacon\_timer})$ ."

Editor's implementation note: Have " $2 \times (\text{max to\_timer} \times \text{max plca\_node\_count} + \text{beacon\_timer})$ " all on one line (use non-breaking spaces to make this happen).

*Rationale:*

Since the maximum allowed value for to\_timer is 255, the maximum allowed value for plca\_node\_count is 255 and the beacon\_timer is defined as 20 bit times, it looks reasonable to have plca\_status\_timer be defined as 130 090 bit times.

## gement Parameters for 10 Mb/s Operation and Associated Power Delivery over a Single Balanced Pair of

CI 147 SC 147.4.3 P 190 L 44 # 277  
Kim, Yong NIO

Comment Type TR Comment Status R PMA

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..."

*SuggestedRemedy*

Please provide a reference to echo cancellation function. And it would be good to have a reference to that function in CL 147.4.3 introductory paragraph (not there now).

Response Response Status W

REJECT.

Comment is out of scope (on unchanged text) and does not change requirements or address a problem, only adds informative tutorial text on receiver design.

Additionally, while reference to echo cancellation occurs in other 802.3 clauses, calling out such a signal processing function in the standard opens the reader to specifying parameters of this function which are not needed for interoperability. Further, the additional text would be with regards to an implementation description rather than interoperability.

CI 146 SC 146.4.3 P 133 L 32 # 278  
Kim, Yong NIO

Comment Type TR Comment Status R PMA

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..."

*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).

Response Response Status W

REJECT.

Comment is out of scope (on unchanged text) and does not change requirements or address a problem, only adds informative tutorial text on receiver design.

Additionally, while reference to echo cancellation occurs in other 802.3 clauses, calling out such a signal processing function in the standard opens the reader to specifying parameters of this function which are not needed for interoperability. Further, the additional text would be with regards to an implementation description rather than interoperability.



## gement Parameters for 10 Mb/s Operation and Associated Power Delivery over a Single Balanced Pair of

CI 148 SC 148 P 213 L 1 # 322  
 Thompson, Geoff GraCaSI S.A.

Comment Type TR Comment Status R PLCA

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 tradition and to IEEE 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.

*SuggestedRemedy*

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 Response Status U

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.

See [www.ieee802.org/3/cg/public/Jan2019/Tutorial\\_cg\\_0119\\_final.pdf](http://www.ieee802.org/3/cg/public/Jan2019/Tutorial_cg_0119_final.pdf).

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

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.

See [www.ieee802.org/3/cg/public/Jan2019/Tutorial\\_cg\\_0119\\_final.pdf](http://www.ieee802.org/3/cg/public/Jan2019/Tutorial_cg_0119_final.pdf)."

Task Force: Y:30 N:2 A:6  
 802.3 Voters: Y:18 N:2 A:1

# Implementation Parameters for 10 Mb/s Operation and Associated Power Delivery over a Single Balanced Pair of

Cl 45 SC 45.2.1.186c.4 P 42 L 44 # 337  
 Thompson, Geoff GraCaSI S.A.

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

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

## Suggested Remedy

Fix text.

Response Response Status **U**

REJECT.

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 P

CI 45 SC 45.2.1.174d P 40 L 44 # 268  
KIM, YONG NIO

Comment Type TR Comment Status A Mixing Segment

Multidrop mode is not clear. If the TX or RX characteristics change, then it may be clearer to provide control around TX or RX parameters. Multidrop mode seems to indicate MAC/RS type of layer function.

## SuggestedRemedy

Please use more direct parameter name as appropriate.

Response Response Status U

ACCEPT IN PRINCIPLE.

Add "(see Clause 147)" after "multidrop mode over a mixing segment network" in paragraph 45.2.1.174d.5 at P41 L51.

CI 45 SC 45.2.1.174e P 42 L 21 # 271  
KIM, YONG NIO

Comment Type TR Comment Status A Registers

Multidrop mode is not clear. If the TX or RX characteristics change, then it may be clearer to provide control around TX or RX parameters. Multidrop mode seems to indicate MAC/RS type of layer function.

## SuggestedRemedy

Please use more direct parameter name as appropriate.

Response Response Status W

ACCEPT IN PRINCIPLE.

Add "(see Clause 147)" after "multidrop mode over a mixing segment network" in paragraph 45.2.1.174e.4 at P42 L52.

CI 45 SC 45.2.3.58c P 47 L 25 # 273  
KIM, YONG NIO

Comment Type TR Comment Status A PLCA

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.

## SuggestedRemedy

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

Response Response Status W

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."

CI 45 SC 45.2.3.58c P 47 L 19 # 274  
KIM, YONG NIO

Comment Type TR Comment Status R PLCA

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.

## SuggestedRemedy

Please do so.

Response Response Status W

REJECT.

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

## Management Parameters for 10 Mb/s Operation and Associated Power Delivery over a Single Balanced P

CI 45 SC 45.2.3.58d.1 P 47 L 44 # 275  
KIM, YONG NIO

Comment Type TR Comment Status R PLCA

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.

## SuggestedRemedy

Please spec appropriate default for system operation when systems initialize from default.

Response Response Status W

REJECT.

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

CI 45 SC 45.2.3.58e.3 P 48 L 45 # 276  
KIM, YONG NIO

Comment Type TR Comment Status A Big Ticket Item PLCA\_EN

PLCA is not a part of PCS. Need to move this bit to appropriate layer (RS) register

## SuggestedRemedy

Please do so.

Response Response Status W

ACCEPT IN PRINCIPLE.

Move \*all\* PLCA related bits to a dedicated subclause / address range in Clause 45. This includes registers to be added after accepting #556.

Implement changes marked with #276 in  
[http://www.ieee802.org/3/cg/public/Sept2018/beruto\\_02\\_CI\\_45\\_d2p0\\_proposed.pdf](http://www.ieee802.org/3/cg/public/Sept2018/beruto_02_CI_45_d2p0_proposed.pdf)

CI 45 SC 45.2.3.58e.4 P 48 L 50 # 277  
KIM, YONG NIO

Comment Type TR Comment Status A Big Ticket Item PLCA\_EN

PLCA is not a part of PCS. Need to move this bit to appropriate layer (RS) register

## SuggestedRemedy

Please do so.

Response Response Status W

ACCEPT IN PRINCIPLE.

Move \*all\* PLCA related bits to a dedicated subclause / address range in Clause 45. This includes registers to be added after accepting #556.

Implement changes marked with #277 in  
[http://www.ieee802.org/3/cg/public/Sept2018/beruto\\_02\\_CI\\_45\\_d2p0\\_proposed.pdf](http://www.ieee802.org/3/cg/public/Sept2018/beruto_02_CI_45_d2p0_proposed.pdf)

CI 45 SC 45.2.3.58f.1 P 49 L 27 # 278  
KIM, YONG NIO

Comment Type TR Comment Status A Big Ticket Item PLCA\_EN

PLCA is not a part of PCS. Need to move this bit to appropriate layer (RS) register

## SuggestedRemedy

Please do so.

Response Response Status W

ACCEPT IN PRINCIPLE.

Move \*all\* PLCA related bits to a dedicated subclause / address range in Clause 45. This includes registers to be added after accepting #556.

Implement changes marked with #278 in  
[http://www.ieee802.org/3/cg/public/Sept2018/beruto\\_02\\_CI\\_45\\_d2p0\\_proposed.pdf](http://www.ieee802.org/3/cg/public/Sept2018/beruto_02_CI_45_d2p0_proposed.pdf)

## Management Parameters for 10 Mb/s Operation and Associated Power Delivery over a Single Balanced P

CI 147 SC 147.1.1 P 145 L 30 # 282  
KIM, YONG NIO

Comment Type TR Comment Status A General

AN is not defined for 10BASE-T1S PHY in HD in multidrop mode. How does PHY know it's in that mode? What happens one PHY is not in multidrop mode, connected to the multidrop segment, or connected with null segment? Management is optional. Duplexness is associated with MAC

## SuggestedRemedy

Please clarify.

Response Response Status W

ACCEPT IN PRINCIPLE.

Replace,

"Auto-Negotiation for 10BASE-T1S is defined in Clause 98. MII is defined in Clause 22. Auto negotiation is not defined for 10BASE-T1S PHY operating in half-duplex multidrop mode."

with,

"Auto-Negotiation for 10BASE-T1S is defined in Clause 98 and available only while not in multidrop mode. Selection between multidrop and point-to-point mode is made via the appropriate configuration bit. Optional MDIO is defined in Clause 45. Management is not optional. MII is defined in Clause 22."

CI 147 SC 147.3.2.2 P 149 L 44 # 283  
KIM, YONG NIO

Comment Type TR Comment Status A Big Ticket Item PLCA

PLCA is not a part of PCS. It is a part of RS (CL 148). Why are plca\_en and other signals are defined and used in CL147 PHY specification, i.e. Fig 147-4 PCS TX state diagram line 11? As per "When PLCA capability is supported and enabled, the RS shall use the combination of TX\_EN deasserted, TX\_ER asserted, and TXD<3:0> equal to 0010 or 0011 as shown in Table 22-1 to send respectively a BEACON or a COMMIT request as explained in Clause 148." the TX state diagram could just be tx\_sym <=tx\_cmd in SILENT state.

## SuggestedRemedy

Eliminate plca related signal use here and everywhere else in this clause (CL147). Let RS layer do its thing, and let PCS and PMA in the PHY do their thing.

Response Response Status W

ACCEPT IN PRINCIPLE.

Implement changes in Clause 147\_r2p0\_resolution.pdf tagged with comment #283.

Changes include revising the state machine and deleting plcs\_en.

CI 148 SC 148.1 P 173 L 15 # 284  
KIM, YONG NIO

Comment Type TR Comment Status A ig Ticket Item PLCA\_SCOPE

"PLCA is designed to work on top of CSMA/CD and can be dynamically enabled or disabled via management interface. When disabled, the system operates as specified in Clause 22." makes no sense. Second sentence - CL22 has been modified to add PLCA support. First sentence -- it does NOT work on top of CSMA/CD. PLCA uses Carrier sense and collision detect in completely different manner to perform alternative media access method.

## SuggestedRemedy

Delete paragraph (both sentences), or make it technical correct.

Response Response Status W

ACCEPT IN PRINCIPLE.

Proposed resolution in Clause\_148\_r2p0\_resolution.pdf. Changes are marked with #284 in the right boxes.

Notes:

WRT "When disabled, the system operates as specified in Clause 22" - CL22 has been modified to add PLCA support: Modifications to Clause 22 are not in effect when PLCA is not supported or not enabled. This is clearly stated in references text.

WRT to "PLCA is designed to work on top of CSMA/CD", this is resolved by #657

WRT to "PLCA uses Carrier sense and collision detect in completely different manner to perform alternative media access method": Carrier Sense has been used in other 802.3 standards to prevent MAC from transmitting, even when the medium is not busy. See also #287.

## Management Parameters for 10 Mb/s Operation and Associated Power Delivery over a Single Balanced P

CI 148 SC 148.2 P 173 L 25 # 286  
KIM, YONG NIO

Comment Type TR Comment Status R PLCA

"..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)

## SuggestedRemedy

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 Response Status W

REJECT.

No consensus to change

Commenter is referred to comment 598 with respect to node ID assignment and management operation.

CI 148 SC 148 P 173 L # 287  
KIM, YONG NIO

Comment Type TR Comment Status A PLCA

CL 4.3.3 variable definition of carrierSense is in conflict with how CL173 PLCA is using carrier sense. "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 w/ CL4. These conflicted use are pervasive, e.g. CL148.4.6.1 holds carrier\_on active even when there is no activity on the physical medium.

## SuggestedRemedy

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

Response Response Status W

ACCEPT IN PRINCIPLE.

Accomodated by #649.

CI 148 SC 148.4.1.1 P 175 L 6 # 288  
KIM, YONG NIO

Comment Type TR Comment Status R PLCA

The Figure 148-2 does not belong in CL148. If it becomes desirable to have it, it should be added to CL22 and reiewed for generic model correctness. CL22.1.1 lists summary of major concepts, gRS should be consistent with that

## SuggestedRemedy

Delete, or move it to CL22 with modifications to align it to CL22.1.1

Response Response Status W

REJECT.

The purpose of a RS is to specify mapping between MAC PLS primitives and MII signals, so the figure belongs to C148 which is an RS. See also Figure 90-2 (TSSI).

CI 148 SC 148.4.2 P 176 L # 289  
KIM, YONG NIO

Comment Type TR Comment Status R ig Ticket Item PLCA\_SCOPE

RS is defined in CL1 "1.4.425 Reconciliation Sublayer (RS): A mapping function that reconciles the signals at the Media Independent Interface (MII) to the Media Access Control (MAC)-Physical Signaling Sublayer (PLS) service definitions. (See IEEE Std 802.3, Clause 22.)", and consistent with CL22.1.1. Even when MII signals are used to convey signals for EEE, it is still performing reconciliation. PLCA is using signals in RS (collision, carrier-sense, etc) while creating a completely different and new medium access control (MAC) method. PLCA function does not belong in RS.

## SuggestedRemedy

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.

Response Response Status W

REJECT.

See comment #637 for rationale.

## Management Parameters for 10 Mb/s Operation and Associated Power Delivery over a Single Balanced P

CI 148 SC 148.4.2 P 176 L # 290  
KIM, YONG NIO

Comment Type TR Comment Status R PLCA

PLCA is not a generic RS.

## SuggestedRemedy

Please correct and clarify.

Response Response Status W

REJECT.

PLCA is contained within the generic RS as shown in Figure 148-3. Commenter did not provide sufficient explanation or remedy.

Straw poll reject comment with rationale above:

Y: 14

N: 0

A: 13

CI 22 SC 22.2.2.4 P 25 L 13 # 292  
KIM, YONG NIO

Comment Type TR Comment Status R PLCA

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.

## SuggestedRemedy

please fix it.

Response Response Status W

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.

CI 22 SC 22.2.2.4 P 25 L 22 # 294  
KIM, YONG NIO

Comment Type TR Comment Status R PLCA

The sentence "Other.shall.. upon the PHY"

## SuggestedRemedy

Unneecessary text. But if you feel it is necessary, define what "shall have no effect" means, so that it could be added to the PICS and tested.

Response Response Status W

REJECT.

This is not new text. It is present in clause 22.2.2.4 of 802.3-2018. Removing this sentence may cause backward compatibility issues.

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.

CI 22 SC 22.2.2.5 P 25 L 46 # 295  
KIM, YONG NIO

Comment Type TR Comment Status R PLCA

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.

## SuggestedRemedy

please fix it.

Response Response Status W

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.



## Management Parameters for 10 Mb/s Operation and Associated Power Delivery over a Single Balanced P

CI 22 SC 22.2.2.11 P 26 L 33 # 297  
KIM, YONG NIO

Comment Type TR Comment Status A PLCA

The proposed new paragraph has optional behavior that may or may not occur. This text does not belong in CL22.

## SuggestedRemedy

Please remove the proposed text, or if required, put appropriate missing text WRT its relevancy (actions, signals, etc).

Response Response Status W

ACCEPT IN PRINCIPLE.

This text has been deleted by changes marked #649 in Clause\_22\_r2p0\_resolution.pdf.

CI 22 SC 22.2.2.12 P 26 L 42 # 298  
KIM, YONG NIO

Comment Type TR Comment Status R PLCA

Similar to my comment on 22.2.11. The proposed new paragraph has optional behavior that may or may not occur. This text does not belong in CL22.

## SuggestedRemedy

Please remove the proposed text, or if required, put appropriate missing text WRT its relevancy (actions, signals, etc).

Response Response Status W

REJECT.

Actions and signals are described in clause 148.4.4.1.3, which is referenced by 22.2.2.11 as appropriate.

CI 30 SC 30.2.1 P 30 L 25 # 301  
KIM, YONG NIO

Comment Type TR Comment Status A Management

oPLCA 30.3.9 block is misplaced. It is mutually exclusive with oMACMergeEntity and oOMPEmulation and possibly others.

## SuggestedRemedy

Please fix it so that they are not mutually exclusive with compatible entities.

Response Response Status W

ACCEPT IN PRINCIPLE.

Move oPLCA under oPHYentity in Figure 30-3

Jon Lewis to implement change.

CI 30 SC 30.3.9.1.1 P 31 L 33 # 305  
KIM, YONG NIO

Comment Type TR Comment Status A Management

States "...A disabled PLCA utilizes Clause 22 reconciliation sublayer without modification.

An enabled PLCA modifies the behavior of the reconciliation sublayer per Clause 148" but Clause 22 is already proposed to be modified with PLCA states and signals. If the intention is to leave CL22 as-is, this draft should not make any modification to CL22 and make this statement. Or do what was intended. Current text does not work (not clear).

## SuggestedRemedy

Please fix it.

Response Response Status W

ACCEPT IN PRINCIPLE.

Replace "A disabled PLCA utilizes Clause 22 reconciliation sublayer without modification. An enabled PLCA modifies the behavior of the reconciliation sublayer per Clause 148."

with

"When PLCA is enabled, the reconciliation sublayer is as defined by Clause 148, otherwise, Clause 148 behavior is not enabled."

(note this should not say "clause 22 behavior is performed" because it needs also to apply to non-clause 22 and non-clause 148 situations...)

CI 30 SC 30.3.9.2.3 P 32 L 11 # 309  
KIM, YONG NIO

Comment Type TR Comment Status A Big Ticket Item PLCA

aPLCAMaxID -- does not have a range, so am I to read this as Max ID = <integer max value>? Is this max # of nodes consistent w/ PLCA clause, and is it get-set or just get? And why would this object be needed for each DTE?

## SuggestedRemedy

Please clarify (range) and justify (why needed for each DTE)

Response Response Status W

ACCEPT IN PRINCIPLE.

Change "INTEGER" at 32/16 to "INTEGER VALUE in the following range (inclusive): 0-255"

Change "INTEGER" at 32/27 to "Same as aPLCAMaxID"

Add the following value after "The value of aPLCALocalNodeID is assigned to define the ID of the local node on the PLCA network.",

"Value must be in the range of [0, aPLCAMaxID] (inclusive)."

## Management Parameters for 10 Mb/s Operation and Associated Power Delivery over a Single Balanced P

CI 30 SC 30.3.9.2.4 P 32 L 22 # 311  
KIM, YONG NIO

Comment Type TR Comment Status A Management

There is no description on how NodeID=0 is assigned (or elected). How each NodeID is assured to be unique. How duplicate NodeID (error condition) is handled.

## SuggestedRemedy

Please add details or references to these behaviors.

Response Response Status W

ACCEPT IN PRINCIPLE.

Accommodated by #598 which specifies locally unique NodeID within a collision domain.

Description or requirements of assignment of parameters in the management entity is beyond the scope of this standard.

CI 30 SC 30.5.1.1.4 P 33 L 47 # 313  
KIM, YONG NIO

Comment Type TR Comment Status R Big Ticket Item AUI

If 10BASE-T1S PHY supports CSMA/CD, then it should operate similarly to 10BASE5, etc WRT to MAU not available/available as stated in second paragraph.

## SuggestedRemedy

Please add appropriate references of media loopback. Current references are only to AUI

Response Response Status W

REJECT.

Consensus not to change. Refer to motion 9 from Unconfirmed\_minutes\_3cg\_0918.pdf

CI 148 SC 148.4.5.1 P 180 L 11 # 570  
Laubach, Mark Broadcom

Comment Type TR Comment Status A PLCA

"PLCA control variables". Where are these? Suggest xref'ing to the appropriate subclause, e.g. 148.4.5.2. The more significant problem is that there is I can't find the term "default" and/or "default value" for any variable in 148.4.5.2. Please indicate in 148.4.5.2 what the default value is for each variable or consider providing a table somewhere appropriate with specific variables and their corresponding appropriate default value to make this statement correct.

## SuggestedRemedy

Add the appropriate default value for each variable in 148.4.5.2 as referred to by the paragraph at line 11.

Response Response Status W

ACCEPT IN PRINCIPLE.

This text is not supposed to be normative, but rather a description of the normative state diagram in Fig 148-4 and 148-5.

Proposed resolution in Clause\_148\_r2p0\_resolution.pdf. Changes are marked with #comment number in the right boxes.

CI 148 SC 148.1 P 173 L 10 # 599  
KIM, YONG NIO

Comment Type TR Comment Status A PLCA

says "MII. are compatible with the gRS. ". The statement may become true if all appropriate changes to CL22 are made to ensure this statement to be true. CL22 conveys PLS signals to MII. CL148 performs medium access control. So they are not compatible prior to changes.. Also not clear is what is being conveyed as "compatible".

## SuggestedRemedy

Delete the sentence, and any other occurrence of similar statement. If this statement is kept (against this comment), clarify what is meant to be "compatible"

Response Response Status W

ACCEPT IN PRINCIPLE.

Proposed resolution in Clause\_148\_r2p0\_resolution.pdf. Changes are marked with #comment number in the right boxes.

## Management Parameters for 10 Mb/s Operation and Associated Power Delivery over a Single Balanced P

CI 148 SC 148.4.4.1.2 P 178 L 51 # 602  
KIM, YONG NIO

Comment Type TR Comment Status A PLCA

"thus request, the PHY shall assert the CRS..." has two problems. What PHY is "the PHY", and how does PHY assert CRS in accordance to CL148 state diagram

## SuggestedRemedy

Please fix it. If fixable.

Response Response Status W

ACCEPT IN PRINCIPLE.  
Solved by #603 and #649

CI 148 SC 148.4.4.1.2 P 178 L 51 # 603  
KIM, YONG NIO

Comment Type TR Comment Status A PLCA

"A Commit request shall not.. PHY. RX\_DV.." has two problems. What PHY is "the PHY", and how does the PHY know not to assert RX\_DV signal in accordance to CL148 state diagram.

## SuggestedRemedy

Please fix it. If fixable.

Response Response Status W

ACCEPT IN PRINCIPLE.

As stated in the same subclause "PHY specifications are free to map the COMMIT request to any suitable line coding as long as the requirement defined herein are met."

The purpose of this sentence is to ensure that whatever mapping is chosen in specific PHY clauses for the COMMIT request, this one is not interpreted as normal data (asserting RX\_DV).

Suggested resolution should clarify this better.

Proposed resolution in Clause\_148\_r2p0\_resolution.pdf. Changes are marked with #comment number in the right boxes.

NOTE: CRS assertion is not to be specified here (it's implicit in CRS definition). See resolution of #649

CI 148 SC 148.4.5.1 P 181 L 50 # 604  
KIM, YONG NIO

Comment Type TR Comment Status R ig Ticket Item PLCA\_SCOPE

PLCA Control state diagram (Fig 148-5) and related text seems to describe Token bus-like medium access control function (without details on how the token (BEACON) is initialized, how duplicate tokens are handled (duplicate nodeID=0), how lost token (null nodeID=0) is handled). This is NOT appropriate function for RS (CL22) layer that conveys (translates) signals between PLS and MII

## SuggestedRemedy

Move CL148 function so CL4 MAC Clause where it belongs. Make appropriate changes to CRD and objectives list, if deemed needed.

Response Response Status W

REJECT.

See comment #637 for rationale.

CI 148 SC 148.4.6.1 P 187 L 54 # 605  
KIM, YONG NIO

Comment Type TR Comment Status R t Item HALF\_DUPLEX\_802.1

PLCA Data state diagram (Fig 148-6) introduces a new behavior WRT media loopback when transmitting. Prior to CL148, CL4 half-duplex MAC reflects all TX packets back to RX (reflected by the half-duplex medium). CL4 full-duplex MAC does not reflect any TX back to RX. There is recognized inconsistency in 802.1 MAC Services definition (e.g. thought experiment -- how does broadcast frame transmitted by a bridge to a half-duplex medium behave as per std, and how does a system actually behave)? This statemachine introduces a new behavior for the half-duplex MAC, where the TX is not reflected back to RX. An EXISTING system that is not aware of 802.3cg behavior would IGNORE (with half-duplex MAC) RX when it is also TX, when in fact RX is independant transmission that must be received (otherwise packet was transmitted to the network and lost silently by being ignored (reflected)).

## SuggestedRemedy

While the 802.1 MAC services issues has nothing to do with 802.3cg scope, the 802 and 802.3 compatibility is IN scope, because by introducing a different behavior. Existing systems (MACs and Bridges) would potentially not process any RX that is coincidental with its own TX. Please fix it, if fixable. 802.1 MAC Services maintenance change may be required be reviewed together with this issue.

Response Response Status W

REJECT.

PLCA is compatible with the clause 4 MAC as specified in 802.3. Maintenance on clause 4 or other Standards is outside the scope of this project. The P802.3cg Task Force Chair will forward this comment to 802.3 Maintenance for consideration.

## Management Parameters for 10 Mb/s Operation and Associated Power Delivery over a Single Balanced P

CI 00 SC 0 P 0 L 0 # 632  
 Thompson, Geoff GraCaSI S.A.  
 Comment Type TR Comment Status R Big Ticket Item AUI  
 Draft does not conform to the model shown in Figure 22-1 in that there is no AUI specified.  
 SuggestedRemedy  
 Include the specification of an AUI to the specification in order to make this new PHY a fully-fledged and compatible member of the family of 10 Mb/s interfaces.  
 Response Response Status U  
 REJECT.  
 Consensus not to change. Refer to motion 9 from Unconfirmed\_minutes\_3cg\_0918.pdf

CI 45 SC 45.2.1.174c P 40 L 3 # 635  
 Thompson, Geoff GraCaSI S.A.  
 Comment Type TR Comment Status A Registers  
 THE TEXT: "The 3 default values for each bit should be chosen so that the initial state of the device upon power up or reset is a 4 normal operational state without management intervention." is an editorial note requiring further definition of the draft. It indicates that the draft was not complete and not qualified for WG ballot.  
 SuggestedRemedy  
 Complete definition of these default values as well as other incomplete items. This constitutes a lack of completeness of the draft, restart the initial WG Ballot.  
 Response Response Status U  
 ACCEPT IN PRINCIPLE.  
 No change to draft required.  
 Table 45-142c clearly shows that 0 0 0 for bits 1.2298.15:13 are Normal (non-test) operation. And 45.2.1.174c.1 clearly states, "The default value for bits 1.2298.15:13 is zero."

CI 147 SC 147.1 P L 22 # 637  
 Thompson, Geoff GraCaSI S.A.  
 Comment Type TR Comment Status R ig 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 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 Response Status U  
 REJECT.  
 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.  
 Y:25  
 N: 1  
 A: 5

CI 147 SC 147.1.1 P L 26 # 638  
 Thompson, Geoff GraCaSI S.A.  
 Comment Type TR Comment Status R Big Ticket Item AUI  
 The text and Fig 147-1 do not align to Fig 1-1 of the standard which is intended to comprehensively cover 802.3.  
 SuggestedRemedy  
 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 Response Status U  
 REJECT.  
 Consensus not to change. Refer to motion 9 from Unconfirmed\_minutes\_3cg\_0918.pdf

## Management Parameters for 10 Mb/s Operation and Associated Power Delivery over a Single Balanced P

CI 147 SC 147.2 P L 34 # 642  
Thompson, Geoff GraCaSI S.A.

Comment Type TR Comment Status R Big Ticket Item Primitives

The claim is that this PHY uses the MII, the reference to 40.2 is to the GMII

## SuggestedRemedy

Change the reference to an MII clause and use the same primitives as existing 10/100 PHYs without alteration.

Response Response Status U

REJECT.

The reference is identical to that in c96 100BASE-T1. This is a reference to "Service primitives and interfaces", not MII.

Straw poll to reject comment with the above rationale:

Y: 9

N: 0

A: 21

CI 147 SC 147.3.1 P L 3 # 643  
Thompson, Geoff GraCaSI S.A.

Comment Type TR Comment Status A EZ

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.

## SuggestedRemedy

Clarify

Response Response Status U

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.

====

## Management Parameters for 10 Mb/s Operation and Associated Power Delivery over a Single Balanced P

CI 147 SC 147.3.2.2 P L 44 # 645  
 Thompson, Geoff GraCaSI S.A.

Comment Type **TR** Comment Status **R** *ig Ticket Item PLCA\_SCOPE*  
 PLCA is out of scope for this project and a layer violation for a PHY project.

*SuggestedRemedy*  
 Remove this variable and its descriptive paragraph.

Response Response Status **U**  
 REJECT.

See comment #637 for rationale.

CI 147 SC 147.3.2.2 P L 50 # 646  
 Thompson, Geoff GraCaSI S.A.

Comment Type **TR** Comment Status **R** *ig Ticket Item PLCA\_SCOPE*  
 PLCA is out of scope for this project and a layer violation for a PHY project.

*SuggestedRemedy*  
 Remove the remainder of PCLA from this project draft.

Response Response Status **U**  
 REJECT.

See comment #637 for rationale.

CI 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

## Management Parameters for 10 Mb/s Operation and Associated Power Delivery over a Single Balanced P

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

Comment Type **TR** Comment Status **R** ig 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.

CI 148 SC 148 P 173 L 1 # 656  
 Thompson, Geoff GraCaSI S.A.

Comment Type **TR** Comment Status **R** ig 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.

CI 148 SC 148.1 P 173 L 14 # 657  
 Thompson, Geoff GraCaSI S.A.

Comment Type **TR** Comment Status **A** ig Ticket Item PLCA\_SCOPE  
 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.

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 at MAC Control or higher within the layer structure and have its own CFI.

Response Response Status **U**  
 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.

CI 22 SC 22 P 25 L 1 # 658  
 Thompson, Geoff GraCaSI S.A.

Comment Type **TR** Comment Status **R** Big Ticket Item PLCA  
 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"

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 at MAC Control or higher within the layer structure and have its own CFI.

Response Response Status **U**  
 REJECT. Group to discuss.

Straw Poll: Reject comment #658 because 1) PLCA is compatible and operates with the CSMA CD MAC, not as a MAC function and 2) PLCA operates as a reconciliation sublayer and does not change the PLS service primitives.

Y: 27  
 N: 2  
 A: 7



## Management Parameters for 10 Mb/s Operation and Associated Power Delivery over a Single Balanced P

Cl 147 SC 147 P 145 L 1 # 659  
 Thompson, Geoff GraCaSI S.A.

Comment Type **TR** Comment Status **R** Big Ticket Item AUI

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 c. 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.

*SuggestedRemedy*

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 Response Status **U**

REJECT.

Consensus not to change. Refer to motion 9 from Unconfirmed\_minutes\_3cg\_0918.pdf

Cl 00 SC 13 P L 3 # 661  
 Thompson, Geoff GraCaSI S.A.

Comment Type **TR** Comment Status **R** Big Ticket Item Repeaters

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.

*SuggestedRemedy*

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 Response Status **U**

REJECT.

Consensus not to change. Refer to motion 9 from Unconfirmed\_minutes\_3cg\_0918.pdf