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

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Cl **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.)"

Cl **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 for a complext 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/July2018/PLCA%20overview.pdf (slides 16 through 21), and 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).

TYPE: TR/technical required ER/editorial required GR/general required T/technical E/editorial G/general   *Comment ID* **198**   Page 1 of 16
COMMENT STATUS: D/dispatched A/accepted R/rejected   RESPONSE STATUS: O/open W/written C/closed U/unsatisfied Z/withdrawn   2/7/2019 8:32:19 AM
SORT ORDER: Comment ID

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

Comment Type **TR**   *Comment Status* **R**   ~~Big~~ *Big Ticket Item - Management*

PHY is NOT the same as Physcal 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 iin oMAC (not oPHY), and make other appropirate 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 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.

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

Comment Type **TR**   *Comment Status* **R**   ~~Big~~ *Big Ticket Item - Management*

PHY is NOT the same as Physcal 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.

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COMMENT STATUS: D/dispatched A/accepted R/rejected   RESPONSE STATUS: O/open W/written C/closed U/unsatisfied Z/withdrawn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

Comment ID **200**

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Cl **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 isseus. 1) name seem to indicate timer burst, but the definition says wait timer before terminating burst.   Should rename to reduce confustion.
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.

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

TYPE: TR/technical required ER/editorial required GR/general required T/technical E/editorial G/general   *Comment ID* **206**   Page 3 of 16
COMMENT STATUS: D/dispatched A/accepted R/rejected   RESPONSE STATUS: O/open W/written C/closed U/unsatisfied Z/withdrawn   2/7/2019 8:32:19 AM
SORT ORDER: Comment ID

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

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Cl **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, separatated from the PHY via xMII and PCS does not seem to have any existing interface to convery 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 converyed.

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)
Accomodated 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"

Cl **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 the10BASE-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 claied 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 objectivies as appropirate (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.

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

Comment ID **210**

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Cl **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 optinoal 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".

Cl **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 "collsions" not "physical collision" (I have a separate commnet 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"

Cl **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."

Cl **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, anway) 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.

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

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Cl **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 confustion. 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.

Cl **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. Physcal 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."

Cl **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 collsion: 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 collsion" or "local collision" are proper use of the word collsion. "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 coillsion" 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

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

Comment ID **223**

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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."

Cl **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 indeeed 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.

Cl **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. Unnessary 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)

Cl **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."

Cl **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.

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

Comment ID **242**

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Cl **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.

Cl **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 insuffcent 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 beahvior.

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"

Cl **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 funciton 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."

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

Comment ID **245**   Page 8 of 16
2/7/2019 8:32:19 AM

Cl **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.

Cl **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"

Cl **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 optinoal. If this is the intent, PLEASE explicltluy 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"

TYPE: TR/technical required ER/editorial required GR/general required T/technical E/editorial G/general   *Comment ID* **249**   Page 9 of 16
COMMENT STATUS: D/dispatched A/accepted R/rejected   RESPONSE STATUS: O/open W/written C/closed U/unsatisfied Z/withdrawn   2/7/2019 8:32:19 AM
SORT ORDER: Comment ID

Cl **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, sucn 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.

Cl **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."

TYPE: TR/technical required ER/editorial required GR/general required T/technical E/editorial G/general   *Comment ID* **254**   Page 10 of 16
COMMENT STATUS: D/dispatched A/accepted R/rejected   RESPONSE STATUS: O/open W/written C/closed U/unsatisfied Z/withdrawn   2/7/2019 8:32:19 AM
SORT ORDER: Comment ID

Cl **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."

Cl **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

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.

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

Comment ID **259**   Page 11 of 16
2/7/2019 8:32:19 AM

Cl **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"

Cl **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 presumablly 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.

TYPE: TR/technical required ER/editorial required GR/general required T/technical E/editorial G/general   *Comment ID* **262**   Page 12 of 16
COMMENT STATUS: D/dispatched A/accepted R/rejected   RESPONSE STATUS: O/open W/written C/closed U/unsatisfied Z/withdrawn   2/7/2019 8:32:19 AM
SORT ORDER: Comment ID

Cl **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

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

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"

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

Cl **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.

Cl **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.
Accomodated 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.
"

Cl **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 requiremetns for support of BEACON in PHY.

SuggestedRemedy

Provide a better referece 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.

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

Comment ID **267**   Page 13 of 16
2/7/2019 8:32:19 AM

Cl **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.

Cl **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 unnessary 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"

Cl **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 invidually 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
" and one of its possible use cases is described here
"http://www.ieee802.org/3/cg/public/Nov2018/xu_3cg_01b_1118.pdf"

TYPE: TR/technical required ER/editorial required GR/general required T/technical E/editorial G/general   *Comment ID* **273**   Page 14 of 16
COMMENT STATUS: D/dispatched A/accepted R/rejected   RESPONSE STATUS: O/open W/written C/closed U/unsatisfied Z/withdrawn   2/7/2019 8:32:19 AM
SORT ORDER: Comment ID

Cl **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 woud only be relevant if this function is implemented in PHY. If the
intent is support the function in the PHY sideof 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 statemachnies 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.

Cl **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.

Cl **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.

TYPE: TR/technical required ER/editorial required GR/general required T/technical E/editorial G/general   *Comment ID* **278**   Page 15 of 16
COMMENT STATUS: D/dispatched A/accepted R/rejected   RESPONSE STATUS: O/open W/written C/closed U/unsatisfied Z/withdrawn   2/7/2019 8:32:19 AM
SORT ORDER: Comment ID

Cl **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.

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."

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

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

Comment ID **322**　　　Page 16 of 16
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