Cl **28E**   *SC* **28.E.1**   *P* **9**   *L* **35**   **# 35**
Healey, Adam   Agere Systems

Comment Type   **T**   *Comment Status* **X**
""The Auto-Negotiation function also provides a Parallel Detection function to allow
1000BASE-KX and 10GBASE-KX4 compatible devices to be recognized.""
 Why isn't 10GBASE-KR listed?
 Is Auto-Negotiation mandatory for 10GBASE-KR?

Suggested Remedy
The Task Force needs to decide if auto-negotiation will be mandatory for 10GBASE-KR. If
it is not mandatory, then parallel detection of 10GBASE-KR port types should also be
considered.

Response   *Response Status* **O**

Cl **28E**   *SC* **28.E.8**   *P* **21**   *L* **49**   **# 42**

Healey, Adam   Agere Systems

Comment Type   **E**   *Comment Status* **X**
""Bring in the additional optional comment from clause 45."" This appears to be an editorial
instruction and should be removed from the clause text.

Suggested Remedy
Execute the requested action and remove this sentence.

Response   *Response Status* **O**

Cl **28E**   *SC* **28.E.10**   *P* **24**   *L* **1**   **# 45**

Healey, Adam   Agere Systems

Comment Type   **TR**   *Comment Status* **X**
No state diagram counter definitions.

Suggested Remedy
Add state diagram counter definitions. Also note that the section number is not correct. It
should be 28E.9.3.

Response   *Response Status* **O**

Cl **28E**   *SC* **28E.11**   *P* **24**   *L* **12**   **# 46**
Healey, Adam   Agere Systems

Comment Type   **E**   *Comment Status* **X**
Incorrect section number.

Suggested Remedy
Section number should be 28E.9.4.

Response   *Response Status* **O**

Cl **28E**   *SC* **28E.3**   *P* **10**   *L* **34**   **# 34**
Healey, Adam   Agere Systems

Comment Type   **E**   *Comment Status* **X**
Reference to ""PMA type"". A Backplane Ethernet PHY consists of a PCS, PMA, and PMD.
To refer to only a ""PMA type"" is not precise. This occurs throughout the clause.

Suggested Remedy
Replace all instances of ""PMA type"" with ""PHY type"".

Response   *Response Status* **O**

Cl **28E**   *SC* **28E.5.1**   *P* **11**   *L* **15**   **# 17**
boyd, graeme   pmc-sierra

Comment Type   **E**   *Comment Status* **X**
Unclear if the 1000Base-KX, 10GBase-KX4 have to support SSP or not, as text uses the
word ""can""

Suggested Remedy

Response   *Response Status* **O**

Cl **28E**   *SC* **28E.5.1**   *P* **11**   *L* **16**   **# 1**
Luke, Chang   Intel

Comment Type   **E**   *Comment Status* **X**
Original text: SSPs can be transmitted by devices operating in 1Gbps (1000BASE-KX) mode, 2.5Gbps (10GBASE-KX4) mode or 10Gbps (10GBASE-KR) mode. __The reference to 2.5Gbps mode should be made clear that it's 2.5Gbps per lane for 4 lanes.

Suggested Remedy
SSPs can be transmitted by devices operating in 1Gbps (1000BASE-KX) mode, 10Gbps over 4 lane (10GBASE-KX4) mode or 10Gbps over 1 lane (10GBASE-KR) mode. _

Response   *Response Status* **O**

Cl **28E**   *SC* **28E.5.1.1**   *P* **11**   *L* **28**   **# 36**
Healey, Adam   Agere Systems

Comment Type   **E**   *Comment Status* **X**
Reference to ""D21.5 symbols"". I believe ""code-groups"" is the correct nomenclature.

Suggested Remedy
Replace instances of ""symbols"" with ""code-groups"". Also, clean up references to ""symbol periods"", etc. to represent the correct nomenclature.

Response   *Response Status* **O**

Cl **28E**   *SC* **28E.5.1.1**   *P* **11**   *L* **33**   **# 4**
Luke, Chang   Intel

Comment Type   **T**   *Comment Status* **X**
Sub clause discusses transition to and from electrical Idle without defining what electrical Idle is. It should also make clear that transmitter should be in electrical Idle state when not transmitting SSP.

Suggested Remedy
Add text to define electrical Idle and make clear in between SSPs transmitter should be in electrical Idle.

Response   *Response Status* **O**

Cl **28E**   *SC* **28E.5.1.2**   *P* **11**   *L* **40**   **# 37**
Healey, Adam   Agere Systems

Comment Type   **E**   *Comment Status* **X**
Reference to ""D21.5 symbols"". I believe ""code-groups"" is the correct nomenclature.

Suggested Remedy
Replace instances of ""symbols"" with ""code-groups"". Also, clean up references to ""symbol periods"", etc. to represent the correct nomenclature.

Response   *Response Status* **O**

Cl **28E**   *SC* **28E.5.1.3**   *P* **12**   *L* **1**   **# 38**
Healey, Adam   Agere Systems

Comment Type   **T**   *Comment Status* **X**
Define SSP format for 10GBASE-KR.

Suggested Remedy
The commenter realizes that this contingent on the 10GBASE-KR signaling decision. This comment is to ensure that this definition is included when the signaling decision has been made.

Response   *Response Status* **O**

Cl **28E**   *SC* **28E.6**   *P* **15**   *L* **11**   **# 2**
Luke, Chang   Intel

Comment Type   **E**   *Comment Status* **X**
Original text: The base Link Code Word (base page) transmitted within a SSP Burst shall convey the encoding shown in_Figure 6.
Figure 6 should be changed to figure 28E-5.

Suggested Remedy
The base Link Code Word (base page) transmitted within a SSP Burst shall convey the encoding shown in Figure 28E-5.

Response   *Response Status* **O**

Cl **28E**   *SC* **28E.7.3**   *P* **18**   *L* **50**   **# 39**
Healey, Adam   Agere Systems

Comment Type   **E**   *Comment Status* **X**
""Auto-Negotiation state diagram"" should be ""Arbitration State Diagram"". Add appropriate cross-reference.

Suggested Remedy
Change text and add cross-reference accordingly.

Response   *Response Status* **O**

Cl **28E**   *SC* **28E.7.4**   *P* **19**   *L* **1**   **# 41**
Healey, Adam   Agere Systems

Comment Type   **TR**   *Comment Status* **X**
Where is the arbitration state diagram?

Suggested Remedy
The arbitration state diagram needs to be modified from what is presented in clause 28 (for example, link_status[x] = READY test uses x = TX, T4, NLP). Changes to the arbitration state diagram need to be enumerated, or the corrected version written into this clause for review. Cross references to the appropriate figure need to added as necessary.

Response   *Response Status* **O**

Cl **28E**   *SC* **28E.7.4.1**   *P* **19**   *L* **18**   **# 40**
Healey, Adam   Agere Systems

Comment Type   **TR**   *Comment Status* **X**
Broken linkages: ""link_status"" is not reported by any P802.3ap PHY and ""link_control"" does not control any P802.3ap PHY. The closest equivalent to link_status, per PHY, appears to be:__1000BASE-KX: sync_status_10GBASE-KX4: sync_status_10GBASE_KR: (!hi_ber)*(block_lock)__The arbitration state diagram currently has no means of enabling or disabling a P802.3ap PHY.

Suggested Remedy
Means of link_status detection and link_control assertion need to be defined. Methods that minimize the editing of clause 36, 48, and 49 are highly preferred, although, regarding the link_control aspect, it is currently not clear that this can be avoided.

Response   *Response Status* **O**

Cl **28E**   *SC* **28E.7.7.1**   *P* **21**   *L* **11**   **# 3**
Luke, Chang   Intel

Comment Type   **E**   *Comment Status* **X**
Original text:__The Next Page shall use the encoding shown in Figure 7 for the NP, Ack, MP, Ack2, and T bits.__The reference to Figure 7 should be changed to 28E-6.

Suggested Remedy
Change text to suggested.

Response   *Response Status* **O**

Cl **28E**   *SC* **28E.7.7.1**   *P* **21**   *L* **12**   **# 5**
Luke, Chang   Intel

Comment Type   **T**   *Comment Status* **X**
Original text:__The 11-bit field D10-D0 shall be encoded as a Message Code Field and D47-D16 shall be encoded as Unformated Code Field if the MP bit is logic one.__It should be:__The 11-bit field D10-D0 shall be encoded as a Message Code Field and D47-D16 shall be encoded as Message Code Field if the MP bit is logic one.

Suggested Remedy
Change the text to suggested.

Response   *Response Status* **O**

Cl **28E**   *SC* **28E.9.1**   *P* **23**   *L* **13**   **# 43**
Healey, Adam   Agere Systems

Comment Type   **TR**   *Comment Status* **X**
No state diagram variable definitions.

Suggested Remedy
Add state diagram variable definitions.

Response   *Response Status* **O**

Cl **28E**   *SC* **28E.9.2**   *P* **23**   *L* **22**   **# 44**

Healey, Adam   Agere Systems
Comment Type   **TR**   *Comment Status* **X**
No state diagram timer definitions.

Suggested Remedy
Add state diagram timer definitions.

Response   *Response Status* **O**

Cl **28E**   *SC* **28E.9.2**   *P* **23**   *L* **50**   **# 6**
Luke, Chang   Intel

Comment Type   **T**   *Comment Status* **X**
In table 28E-8, remove nlp_test_max timer and nlp_test_min_timer. Those have no relevance in 802.3ap specification.

Suggested Remedy
Remove these 2 entries in the table.

Response   *Response Status* **O**

Cl **28E**   *SC* **28E-8**   *P* **21**   *L* **48**   **# 11**
Marris, Arthur   Cadence

Comment Type   **T**   *Comment Status* **X**
Bring in the additional optional comment from Clause 45.

Suggested Remedy
Change ""shall be used for both"" to ""defines the""__Change ""Bring in the additional optional comment from Clause 45"" to ""The MDIO electrical interface is optional. Where no physical embodiment of the MDIO exists, provision of an equivalent mechanism to access the registers is recommended.""

Response   *Response Status* **O**

Cl **28E**   *SC* **Table 28E-1**   *P* **14**   *L* **32**   **# 47**
Healey, Adam   Agere Systems

Comment Type   **T**   *Comment Status* **X**
T4 - Pulses in a Burst (min) = 50. This should be 49, unless an all-zeros LCW is somehow prohibited.

Suggested Remedy
Change T4(min) to 49.

Response   *Response Status* **O**

Cl **28E**   *SC* **Table 28E-4**   *P* **16**   *L* **47**   **# 10**
Marris, Arthur   Cadence

Comment Type   **T**   *Comment Status* **X**
There is an entry for 'pause' in the table but no mention of it in the text.

Suggested Remedy
Why not go with the pause specification in Annex 28B of IEEE 802.3? This would require adding an extra bit to the table for asymmetric pause.

Response   *Response Status* **O**

Cl **45**   *SC* **45.2.1.10**   *P* **35**   *L* **12**   **# 32**
Dawe, Piers   Agilent

Comment Type   **TR**   *Comment Status* **X**
10GBASE-T has already taken bit 1.11.1 in the 10G PMA/PMD extended ability register. There is potential for more confusion because 10GBASE-LRM nearly took it too.

Suggested Remedy
Agree the changes to this table 45-11-10G PMA/PMD Extended Ability register bit definitions, with P802.3an and P802.3aq. My suggestion to minimise churn is as follows:_1.11.1 10GBASE-T_1.11.2 10GBASE-KR_1.11.3 10GBASE-LRM_1.11.4 10GBASE-KX4

Response   *Response Status* **O**

Cl **45**   *SC* **45.2.1.6.1**   *P* **34**   *L* **8**   **# 33**
Dawe, Piers   Agilent

Comment Type   **TR**   *Comment Status* **X**
10GBASE-T has already taken 1 0 0 0. There is potential for more confusion because 10GBASE-LRM nearly took it too. With the current projects, we will have a total of 12 PMDs to map into this register, so using 5 bits (32 possibilities) to keep to a reasonably logical mapping seems reasonably efficient. 'X4' PMA/PMDs end in 0 0, optical PMDs use the last two bits to represent wavelength. We then have to decide where 10GBASE-KR goes: I suggest in the '... 0 0' set as we don't know how many future EDC-enabled optical PMDs may appear. In the proposal below, bits 4 and 3 could be reversed.

Suggested Remedy
Agree the changes to this table 45-7-0G PMA/PMD control 2 register bit definitions, with P802.3an and P802.3aq. My suggestion to minimise churn is as follows:_1.7.15:5 Reserved_1.7.4:0   as below:_0 1 0 0 0 10GBASE-KX4 (or 10GBASE-T)_1 0 0 0 0 10GBASE-T (or 10GBASE-KX4)_1 1 0 0 0 ? 10GBASE-KR_0 1 1 1 0 10GBASE-LRM (or 1 0 1 1 0)_0 0 x x x   All used by 802.3ae and 802.3ak

Response   *Response Status* **O**

Cl **45**   *SC* **Table 45-2**   *P* **30**   *L* **28**   **# 48**
Healey, Adam   Agere Systems

Comment Type   **T**   *Comment Status* **X**
    Collision with P802.3an (10GBASE-T) register space. They are currently requesting 1.129-132 which overlaps with the 1.120-199 denoted as ""reserved for Backplane Ethernet"".

Suggested Remedy
    It is necessary to coordinate P802.3ap register use with other projects. Confer with P802.3an and P802.3aq and define non-overlapping regions of register space for each project.

Response   *Response Status* **O**

Cl **45**   *SC* **Table 45-3**   *P* **31**   *L* **28**   **# 12**
Marris, Arthur   Cadence
Comment Type   **T**   *Comment Status* **X**
    Delete xx1x line item
Suggested Remedy
    Delete xx1x line item
Response   *Response Status* **O**

Cl **69**   *SC* **69.2.3**   *P* **46**   *L* **27**   **# 7**
Marris, Arthur   Cadence
Comment Type   **E**   *Comment Status* **X**
    Missing word ""over""
Suggested Remedy
    Change ""operation two"" to ""operation over two""

Response   *Response Status* **O**

Cl **69**   *SC* **69.2.4**   *P* **47**   *L* **14**   **# 16**
Marris, Arthur   Cadence

Comment Type   **T**   *Comment Status* **X**
    Is auto-negotiation mandatory or optional?

Suggested Remedy
    If optional change ""Auto-Negotiation for Backplane Ethernet is defined in Annex 28E."" to ""Auto-Negotiation for Backplane Ethernet is optional and defined in Annex 28E."" if not then change to ""Auto-Negotiation for Backplane Ethernet is mandatory and defined in Annex 28E.""__If mandatory add a ""shall"" to the appropriate place in the document.

Response   *Response Status* **O**

Cl **70**   *SC* **70.2**   *P* **49**   *L* **39**   **# 8**
Marris, Arthur   Cadence
Comment Type   **E**   *Comment Status* **X**
    Style - change ""utilizes"" to ""uses""
Suggested Remedy
    Style - change ""utilizes"" to ""uses""
Response   *Response Status* **O**

Cl **70**   *SC* **70.5.2**   *P* **50**   *L* **44**   **# 13**
Marris, Arthur   Cadence
Comment Type   **T**   *Comment Status* **X**
    How do the the transmit electrical specifications in 39.3.1 relate to those in Table 70-3?
Suggested Remedy
    Are you sure that you want to refer to 39.3.1 here? Either explain the relationship between Table 39-2 and Table 70-3 or refer to a Clause 70 subclause. I'm confused.

Response   *Response Status* **O**

Cl **70**   *SC* **70.5.4**   *P* **51**   *L* **28**   *#* **9**
Marris, Arthur   Cadence

Comment Type   **E**   *Comment Status* **X**
        Delete redundant text ""NOTEû SIGNAL_DETECT may not activate with a continuous 1010à
        pattern, such as the high frequency pattern of_48A.1, but it will be activated by an IPG..""

Suggested Remedy
        ""NOTEû SIGNAL_DETECT may not activate with a continuous 1010à pattern, such as the
        high frequency pattern of_48A.1, but it will be activated by an IPG..."" is repeated twice. So
        delete the first instance of it.

Response   *Response Status* **O**

Cl **70**   *SC* **70.5.5**   *P* **52**   *L* **1**   *#* **20**
boyd, graeme   pmc-sierra

Comment Type   **T**   *Comment Status* **X**
        As editor points out, 1000Base-CX does not support ""PMD Transmit Disable Function"" and
        as 1000Base-KX is to based on CX, this feature should not be required

Suggested Remedy
        Delete section

Response   *Response Status* **O**

Cl **70**   *SC* **70.5.6**   *P* **52**   *L* **12**   *#* **21**
boyd, graeme   pmc-sierra

Comment Type   **T**   *Comment Status* **X**
        As editor points out, 1000Base-CX does not support ""Loopback Mode"" and as 1000Base-
        KX is to based on CX, this feature should not be required

Suggested Remedy
        delete section

Response   *Response Status* **O**

Cl **70**   *SC* **70.5.7**   *P* **52**   *L* **24**   *#* **22**
boyd, graeme   pmc-sierra

Comment Type   **T**   *Comment Status* **X**
        As editor points out, 1000Base-CX does not support ""PMD Transmit Fault Function"" and
        as 1000Base-KX is to based on CX, this feature should not be required

Suggested Remedy
        Delete section

Response   *Response Status* **O**

Cl **70**   *SC* **70.5.8**   *P* **52**   *L* **37**   *#* **23**
boyd, graeme   pmc-sierra

Comment Type   **T**   *Comment Status* **X**
        As editor points out, 1000Base-CX does not support ""PMD Receive Fault Function"" and
        as 1000Base-KX is to based on CX, this feature should not be required

Suggested Remedy
        Delete Section

Response   *Response Status* **O**

Cl **70**   *SC* **70.6.1**   *P* **53**   *L* **15**   *#* **24**
boyd, graeme   pmc-sierra

Comment Type   **T**   *Comment Status* **X**
        In table 70-3 gives differentail peak-to-peak output votlage as 800 to 1600mv, yet this is not
        compatable with 1000Base-CX (which has 1100-2000mV)

Suggested Remedy
        Change to values in table 39-2 of the 1000Base-CX clause

Response   *Response Status* **O**

Cl **70**   *SC* **70.6.1**   *P* **53**   *L* **17**   *#* **31**
boyd, graeme   pmc-sierra

Comment Type   **TR**   *Comment Status* **X**
        Has a spec of -0.4 to 1.2V for the common mode of the Tx in table 70-3. This is not
        compatible with (P)ECL type levels that were required for 1000Base-CX.

Suggested Remedy
        Change the upper limit to 3.3V

Response   *Response Status* **O**

Cl **70**   *SC* **70.6.1**   *P* **53**   *L* **21**   # **25**
boyd, graeme   pmc-sierra

Comment Type   **T**   *Comment Status* **X**
   Table 70-3 has DJ spec of 0.1UI, whereas 1000Base-CX has 0.12UI

Suggested Remedy
   Change to be same as 1000Base-CX (0.12UI)

Response   *Response Status* **O**

Cl **70**   *SC* **70.6.1.5**   *P* **55**   *L*   # **19**
boyd, graeme   pmc-sierra

Comment Type   **E**   *Comment Status* **X**
   Text states ""shall meet Equation ..."", yet figure 70-4 states ""Transmit differential output
   return loss (informative)"". Which is correct?

Suggested Remedy
   remove ""(informative)"" or changing ""shall""

Response   *Response Status* **O**

Cl **70**   *SC* **70.6.1.5**   *P* **55**   *L* **27**   # **18**
boyd, graeme   pmc-sierra

Comment Type   **E**   *Comment Status* **X**
   Very hard to understand return loss spec as condition (freq range) not on the same line as
    the limit.

Suggested Remedy
   Insure freq range is on the same line as the limit.

Response   *Response Status* **O**

Cl **70**   *SC* **70.6.2**   *P* **57**   *L* **19**   # **26**
boyd, graeme   pmc-sierra

Comment Type   **T**   *Comment Status* **X**
   Differential input peak-to-peak amplitude max. spec is 1600mV in table 70-5.

Suggested Remedy
   Needs to change to 2000mV as per the Tx upper limit for 1000Base-CX

Response   *Response Status* **O**

Cl **71**   *SC* **71.5.4**   *P* **63**   *L*   # **27**
boyd, graeme   pmc-sierra

Comment Type   **T**   *Comment Status* **X**
   This section is giveing analog limits for signal detect (execeeded 175mV, exceeded 50mV,
   below 50mV & 75mV), which are not part of XAUI.

Suggested Remedy
   Remove all analog limits, thus allowing for an all digital signal detect that is far better

Response   *Response Status* **O**

Cl **71**   *SC* **71.6.1**   *P* **67**   *L* **17**   # **28**
boyd, graeme   pmc-sierra

Comment Type   **T**   *Comment Status* **X**
   Has spec of common mode voltage, yet XAUI only spec's absolute voltage

Suggested Remedy
   Change to XAUI absolute voltage limits of -0.4 to 2.3V

Response   *Response Status* **O**

Cl **72**   *SC* **72.5.2**   *P* **77**   *L* **4**   # **15**
Marris, Arthur   Cadence

Comment Type   **T**   *Comment Status* **X**
   Delete the word ""optical""

Suggested Remedy
   Delete the word ""optical"" where-ever it appears in Clause 72.

Response   *Response Status* **O**

Cl **72**   *SC* **72.5.4**   *P* **77**   *L*   # **29**
boyd, graeme   pmc-sierra

Comment Type   **T**   *Comment Status* **X**
   Why is this section talking about ""optical power level""?__How can this section give
   analog signal detect levels when we have not yet come up with a signaling method yet
   (and better yet why not just go with digital signal detect which will give a much signal

Suggested Remedy
   remove all text & tables in this section. Leave blank untill signaling method is decided.

Response   *Response Status* **O**

Cl **72**   *SC* **72.5.5**   *P* **79**   *L*   **# 30**
boyd, graeme   pmc-sierra

Comment Type   **T**   *Comment Status* **X**
    Appears that this section (PMD Transmit Disable Function) is again referring to optical links
""When asserted, this function shall turn off the optical transmitter so that it meets the
requirements of the average launch power of OFF Transmitter in Table 52û7, Table 52û12,
or Table 52û16.""

Suggested Remedy
    remove all text & tables in this section. Leave blank untill signaling method is decided.

Response   *Response Status* **O**

Cl **72**   *SC* **Table 72-1**   *P* **75**   *L* **25**   **# 49**
Healey, Adam   Agere Systems

Comment Type   **E**   *Comment Status* **X**
    Clause 49 is the 10GBASE-R PCS, but not the PMA. Clause 51 is the PMA.

Suggested Remedy
    Change row to read: 49 - 10GBASE-R PCS_Add row to table: 51 - 10-Gigabit Serial PMA

Response   *Response Status* **O**

Cl **72**   *SC* **Table 72-1**   *P* **75**   *L* **33**   **# 14**
Marris, Arthur   Cadence

Comment Type   **T**   *Comment Status* **X**
    Isn't the associated PMA defined in Clause 51?

Suggested Remedy
    Add row for Clause 51 in Table 72-1.

Response   *Response Status* **O**