

Codeword Examples –

in support of Comment #107 on 802.3df D3.0

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Comment #107

<i>Cl</i> 172	<i>SC</i> 172.2.4	<i>P</i> 211	<i>L</i> 10	# I-107
Dawe, Piers J G		NVIDIA		
<i>Comment Type</i>	TR	<i>Comment Status</i>	D	<i>encoding example</i>

There is an informative Annex 119A, 200GBASE-R and 400GBASE-R PCS FEC codeword examples.

Suggested Remedy

As the Clause 172 PCS is subtly different to Clause 119, with partly different alignment markers and the block distribution and synchronised alignment marker groups of the two flow method, there are new opportunities for ambiguity and misunderstanding that 119A won't catch. So, please prepare a similar annex for Clause 172. Add text here and at the beginning of 172 and 169.2.3 mentioning it. Revise the amendment description on page 14.

Please prepare a plain-text file with the large tables for convenient reading into a program, and post it on the project web site for review with future drafts.

<i>Proposed Response</i>	<i>Response Status</i>
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PROPOSED REJECT.

A new annex as suggested would be an improvement to the draft. However, a contribution providing a complete proposal including values for the tables, start-up conditions, etc. is required.

Proposed solution: Adding Annex 172A for 800GBASE-R PCS FEC example codewords

- Language in Annex 119A can be mostly reused
- Use the same example payload (scrambled idles), Flow 0 seed and PRBS9 seed(s) as 119A
- Flow 0 is mostly the same as for 400G in Table 119A–2 and Table 119A–5
 - Parts of alignment markers and the parity differ – indicated for flow 0 only by red bars
- Per 119A, italics show alignment markers, bold shows padding for the alignment markers
- There are further processing steps, not illustrated: distribution and interleaving in 172, and 32:8 restricted bit-level multiplexing in 173
- Detailed Example payload and initial states:
 - Data sent: scrambled idle.
`tx_xcoded<0:256> = 007000000000000000780000000000000078000000000000007800000000000000`
 - Scrambler seeds were different for the two flows:
Flow 0: `S<0:57> = 24E 6959 D0FA 5DBD`
Flow 1: `S<0:57> = 1FB 5885 7D81 624F`
 - PRBS9 seeds for AM padding were the same for both flows, `P<0:8> = 0x100`.
 - `tx_am_sf<2:0> = {0,0,0}`, for both flows.

Example tx_scrambled with alignment marker group

Index <i:j>	tx_scrambled_am<i:j>, Flow 0
<0:256>	0B2ACAB2ACAB2ACAB2ACAB2ACAB2ACAB2ACAB2ACA9324C9324C9324C9324C9324
<257:513>	192649926499264991B421184592144D2F445014D517435064290242DA629AA6A
<514:770>	1374DD314C5354D5374D5314C5374CD356D5B56D5B56D5B56D5B56D5B56D
<771:1027>	0B6ADAB66E5BE6DDB26E5B76DDB46FDB46C9B86F5B36E1B6B7DA9F80678A8AD7B
<1028:1284>	1E4B2F2B80AF5D571B9B5D4DC72F7E7C03C57E49C8DC672476BEC37FD26FCBB9
<1285:1541>	1D7E1AA0BD3D8BA16DAAB83C86F1C6A4C3D959EA486540779A7535084CD868EA1
<1542:1798>	1F58A4A8646AAB03950E183FA3B0196372399DBC94932C982990B42604092B7A
<1799:2055>	06C1749E925544C3391E315A3C26A6100846139561BD37228569FB24B7E4D4CC0
<2056:2312>	08CCD177010357E8DAB65B6F9160968075341AC958CFC828D8372DC66242646D8
<2313:2569>	026FEEA09736E915DD54C5F7E600ECFCBD7D7C207941C5D7182D8B95FE412ED12
<2570:2826>	014CCE446415F10CDC7BBAFB1CC4B442EF5737AFB4F3BED48D240C9095F5FD3A6
<2827:3083>	10219FBE135EDE0B73C15238C150007886562E30A50CB27DF341954DB8CA1C564
<3084:3340>	16598EAD3C229838CB9BEE7F793139EE1F89FDAD9071687CBEDF89B4E527A03CD
<3341:3597>	1C2044F260A85EE6B506C25E7C1196298548B4B3576F1B084C83F2E3CB5FC5F6
<3598:3854>	1C9D40EF27471536FE9EB5E3BC3870D46755080EA6D29F09CF8FA697A738DD3EC
<3855:4111>	193FA8A7675CE03706A49019B93544E19DD66CE78E6A94EBDD7ECCAE7DF2076D
<4112:4368>	081919F234C00959E5AFFC9F83C909805378B5F3F2E4917F3E48B5DE4758CEA42
<4369:4625>	1D378C193CDD3D0F781ABC3529BF76A66B7C73A7230B517D96DAFF6A39F9EA9B6
<4626:4882>	05E852B6917E9D1410B6509E778629A516FB2BCEABA79F12241DBC94CAFFFF02
<4883:5139>	1D98F5991744C9FC5393EFD6299558CB4F28DF3BF3C8636DBA505E3A296C7BD2E
<5140:5396>	00FAACFBFDB1C29CED046C73C9AAAFE3DE8849ADAD16E864814846BB8CB889AD
<5397:5653>	04D11BFE0E8DEF5ECFDBE45D1EE4607B4B44DF874F8E976DD828FCFD38158A8FF
<5654:5910>	00EE28B635049BA9506024BA13862A1D6BAE22D0DB5DDB1F4DBE0F80E9EDBBCC6
<5911:6167>	1CD0769BC76446DA04136E7C6D19905DFB81AC3BFD931426901028D729E529F5A
<6168:6424>	14C3FF33243D7D2B5137B63359FD25B82CDE769D0F10D2E60A0386E60820BE8F4
<6425:6681>	1993F1FE2D6C60459F26A74BD0265C2959899E4C5B24196AFD51DB241CFCF9091
<6682:6938>	18EE61EA5A0D584DE8AC602618874BBA60A907115513BC960F6BE32C68F1F2458
<6939:7195>	042251FD6EF16662F5C99D9779B20B865B1401C96034C99550401BCB2792E5638
<7196:7452>	0CE3AE06476B769F33E5577CE4BA6D62071CABE3E9A561D6077FD23909568A25A
<7453:7709>	1BBC46AC3DF26A5BB0EA4FDBCFB42738A84007619C594E24AB396AFB5F05FBFF
<7710:7966>	076C96A407E106D494AA6B0C5168E1F335B812D7BC530CE8C6FC13F6C54EC2165
<7967:8223>	056CC06AFE2BD2A9894C4D1AD9E632F861208AD3894EFF0DE8B0291C486EA3281
<8224:8480>	094534A897031E6307E32C1906C85E99CD4696FC818D2B5EAF26A576DE149AE12
<8481:8737>	085AE9048EDDC5401827FAA937411FF35C10287236FFDC87E7E7E334B038EE3F9
<8738:8994>	014179E0E2359D3B961A1302FA4B7AC384F0564B15D7504DADBE3C65EE8F6F13A
<8995:9251>	08D40F4B092621CCA4919E81DOC15014204622D41814894DBE389C149E5E2257A
<9252:9508>	0E4772C6718DA5361ABFAAD60F5C32D304740DE671045CDAD6617125F4BBF457D
<9509:9765>	071A7D2B02B41F13971A22FE8A29F0A03C1CEC43CA0411D7872F18D12E0A2BD06
<9766:10022>	1344403844B360B4A61968D045941FF821511C2E95455C300EED811D314AD7018
<10023:10279>	0275A5C4A36F6B8B13AFAFFCFDFBD9B13F00488494886CDEB13B31FC9F7941CF

Index <i:j>	tx_scrambled_am<i:j>, Flow 1
<0:256>	0B2ACAB2ACAB2ACAB2ACAB2ACAB2ACAB2ACAB2ACA9324C9324C9324C9324C9324
<257:513>	192649926499264991B421184592144D2F445014D517435064290242DA629AA6A
<514:770>	1374DD314C5354D5374D5314C5374CD356D5B56D5B56D5B56D5B56D5B56D
<771:1027>	0B6ADAB66E5BE6DDB26E5B76DDB46FDB46C9B86F5B36E1B6B8196F7C588549274
<1028:1284>	063530AC615723489C7AA53238D08183FC3A81B6372398DB894132C802D903446
<1285:1541>	0181256F4EC1749EA25944C3B93E35583CE6961A47668087A67A36C8BCE467E9D
<1542:1798>	1EB8DCB663E54ACFC6AF1E7C05CAFE69C8DC662436B6CD367D66F4BD9FBF6D485
<1799:2055>	193E8B616DAABB3CC6E1CEA5C3D959E00846139561BD37228569FB24B7E4D4CC0
<2056:2312>	1F86712D0B9C5715BC0B73ECC6DD388DCC420940ACD6A761E9DBFD65F67A6F80
<2313:2569>	17D275B453FCD8EE9BBA9A4522014E8FA3612BD59F1561BF74F4DFA4BBB186627
<2570:2826>	08F114445112D312B36734B261D20AC5BA8E888DFF7AC7FBFDCC270294A477B
<2827:3083>	129C411094B7035E81B92A2390C3A5F42EEOFAFD8B4AB14E2F282A004EF203DF
<3084:3340>	1922CE80625B274A3BE4165602BE1AA5D500E9B5E42CA8A1ABF23428487DCC0
<3341:3597>	05283BE314346768BA691A9E03AD081BDE41FD90CDFE850CC9C6993D2632CE00
<3598:3854>	010D455AB1946A8AF1B27E7970F9C64099FE6DD0BF426CFDD965F0F62B29F497B
<3855:4111>	0A24DCC7CA2E026301236DF64D82DE1BA3C0782F57F00618A931EBD9CD53E5FDF
<4112:4368>	1FB0A3715E0D9FB90914C768F175C7CC935331B3C4575547B4C4C25B9ABCD8698
<4369:4625>	0C7BDEACF874C37E408742B8E1B1D1155793CD9A46DB62CED7FED0542B774E155
<4626:4882>	0FB5F72DEEF86145B1203BB9357A11B3DE41A6F68FF8EFA05764C7C8A310219
<4883:5139>	14E0EFA4D7E1D11276142A97DC986CC8AD33952EB7415501160BC907D27957D78
<5140:5396>	1ADD66B6629E510BDC1C913AB02C7BD575C4165BA1F57D71C1C67C129EDCD0885
<5397:5653>	09357A0D4F3A2EDE5040F70E722B367A0B5995F07EDB2DA93118CA44E4A95BD8C
<5654:5910>	1F87871D3792E369DC0EE28B3700C7B21256A342A41541C21760FA2A817EB1718
<5911:6167>	1A08EF85796CA9198F49380C6834D413CD1E6AB22AAF3826244FF2FAE786966CE
<6168:6424>	0C17672A70D318BD56B86CAD4E6B5F8CF307FDEC8331ECC71F7918F94245C3F62
<6425:6681>	19F56BAEFA5211C1272E4F9D16CA2CD6F63E731C1F67495BB02209956EB212FF2
<6682:6938>	04CE02FCA580E394CD4BBEEE49A2724E89FCFF76F58F6A5C9554C369DAF03EA38
<6939:7195>	0D7A7417F605A52B76F10EB7D784A8COD46CA4A46082E97C54682CCAD8128F4C8
<7196:7452>	1F062F513B79AA19647D271AECA27C172D10824306C524CF5A5AD1A882EC269C47
<7453:7709>	16464DB070D86EA6F6F2DCC17BF64C0439C0DCC6F5E080B7FA5CF0BC17D4941FE
<7710:7966>	1E570C5B95F6A1EF2568FBA6A3E2AA3E10F92CFC848B7DDDCOC229DA995EF3238
<7967:8223>	0B019680216F92EFC7A77F2D846BF50FB5571C8B0597EDD4444COD1ACD73ED0B2
<8224:8480>	0D4342D2956C0316F27A6CA376E43165DF6E0BF72B3B4B684DD48B5C1E497305
<8481:8737>	19D3C8BC33383FBF0B145F73B019C77C25F7EF62FE3A30D7BF87ACDE21F33AB65
<8738:8994>	1B21A3FA20EB18693BA928B8E8B1481F9C1B4CAA136A317E5575FEE62626B4689
<8995:9251>	0217E9C2B11E1B9B07184C9B7188D658F7703770D3DB76533A2A6AD850A9C01B3
<9252:9508>	1407CB283808020B5602DA0A14AC8761931FDB8BE807E7D3D7A6ED35A656B92F8
<9509:9765>	059FC0379557A8410F5AA2B5D7F4A506BA87443FF05C4F26D9B1B7625AA0AAD8A
<9766:10022>	11C1338632F6EE337BA90C50DB4CDEC64C758D8B5FAF5A880C5C3C62FBCE1A7BD
<10023:10279>	0581091408463FFB4FD2C97DE7105B4108FC7FCF460728BDA613FD80FA8608928

sk F

Thank you!