Test Vectors for 800GBASE-ER1 FEC and PMA (Comment I-316)

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Supporters

- Tom Williams, Cisco
- Tom Huber, Nokia
- Eugene Opsasnick, Broadcom
- Marco Mascitto, Nokia
- Paul Brooks, VIAVI
- Leon Bruckman, Nvidia
- Jose V. Galán, MaxLinear
- Xiang Hi, Huawei
- Atul Srivastava, NEL
- Scott Irwin, Adtran
- Viet Tran, Keysight
- Jean-Michel Caia, CICT
- Kapil Shrikhande, Upscaleai
- Jeffery Maki, HPE

Background

- In response to Comment #44 against D2.3, sluyski_3dj_01_2601 proposed a set of test vectors for the 800GBASE-ER1/ER1-20 FEC and PMA sublayer.
- During the January Interim meeting in Austin, it was agreed to to wait and resubmit the test vectors against D3.0, and to relabel the test vector reference points as VPn rather than TPn.
- This presentation is in response to Comment I-316 against D3.0, resubmits the test vectors from sluyski_3dj_01_2601 , renames TPn to VPn and provides proposed text for Annex 186A to describe the test vectors.
- The updated test vector files are posted here: https://www.ieee802.org/3/dj/public/26_05/nicholl_3dj_03_2605.7z
- These test vectors have been verified by several individuals

Background

Comment #44 against D2.3

Cl **186A** *SC* **186A** *P* **956** *L* **18** # 44

Brown, Matt — Alphawave Semi

Comment Type **TR** *Comment Status* **R** *Test vectors (L)*

Draft 2.2 comment #152 requested that test vectors be incorporated into the draft. The response pointed out that relevant test vectors are provided publicly by OIF but need some exceptions. During comment resolution, one participant offered to provide appropriate text vectors.

SuggestedRemedy

Provide text vectors for Clause 186 FEC or reference the OIF test vectors noting exceptions.

Response *Response Status* **C**

REJECT.

The following contribution was reviewed by the CRG:
https://www.ieee802.org/3/dj/public/26_01/sluyski_3dj_01_2601.pdf

Related test vectors are posted here:
https://www.ieee802.org/3/dj/public/26_01/sluyski_3dj_02_2601.7z

Discussion indicated it would be preferred to label the test points VPn rather than TPn.

Further evalaution to confirm the vectors is encouraged.

There is no consensus to make any changes to the draft at this time.

Comment I-316 against D3.0

Cl **186A** *SC* **186A** *P* **954** *L* **1** # I-316

Nicholl, Gary — Cisco Systems, Inc.

Comment Type **TR** *Comment Status* **X**

As noted in Draft 2.2 Comment #44 (https://www.ieee802.org/3/dj/comments/D2p3/8023dj_D2p3_comments_final_clause.pdf), test vectores are required to be provided for the 800GBASE-ER1 FEC and PMA.

SuggestedRemedy

Two contributions will be provided:
1) A contributution containing the test vectors. This will be based on the test vectors files provided against Draft 2.2 Comment #44 (https://www.ieee802.org/3/dj/comments/D2p3/8023dj_D2p3_comments_final_clause.pdf) and posted as https://www.ieee802.org/3/dj/public/26_01/sluyski_3dj_02_2601.7z.
2) A contribution containing the proposed text for Annex 186A.

Proposed Response *Response Status* **O**

Note: Comment I-316 incorrectly referenced comment #44 as being against D2.2 rather than D2.3

Proposed Text for Annex 186A

Annex 186A

(informative)

800GBASE-ER1 FEC and PMA test vectors

This annex provides test vectors of the 800GBASE-ER1 FEC transmit function, including data encoding, mapping, and FEC encoding defined in 186.2.3, and 800GBASE-ER1 PMA transmit function defined in 186.3.3.

Files containing the test vectors are available at https://standards.ieee.org/downloads/802.3/.

***Editor's note** (to be removed prior to publication): The test vectors are given as plain-text files, which can be found at the following link: https://www.ieee802.org/3/dj/public/26_05/nicholl_3dj_03_2605.7z. This file will be placed in the 802.3 downloads folder referenced above when this amendment is published.*

Test vectors are provided at test vector points VP1,VP2 and VP3 for the 800GBASE-ER1 FEC sublayer as shown Figure 186A–1. Test vectors are provided at test vector point VP4 for the 800GBASE-ER1 PMA sublayer as shown in Figure186A–2.

The test vectors at VP1 are at the input to the GMP mapper function defined in 186.2.3.3.

The test vectors at VP2 are at the output of 800GBASE-ER1 tributary frame overhead insertion function defined in 186.2.3.5.

The test vectors are VP3 are at the output of the 128-bit interleaving function defined in 186.2.3.6.

The test vectors are VP4 are at the output of the 800GBASE-ER1 PMA sublayer defined in 186.3.

Proposed Text for Annex 186A (cntd)

The test pattern is based on Ethernet packets encoded and transcoded per IEEE 802.3 Clauses 172.2.4.1 to 172.2.4.4 for the 800GBASE-R PCS. Idles have been added between packets to generate average IPG=12 and to diversify the cases for the 256B/257B transcoder.

These test vectors do not support the optional alignment marker location feature. Users of these vectors should assume that FEC status variable: FEC_alignment_marker_location_ability, and/or FEC control variable: FEC_alignment_marker_location_enable are configured to zero. Under these conditions, the value of the AML overhead is set to all-zeros

Proposed Text for Annex 186A (cntd)

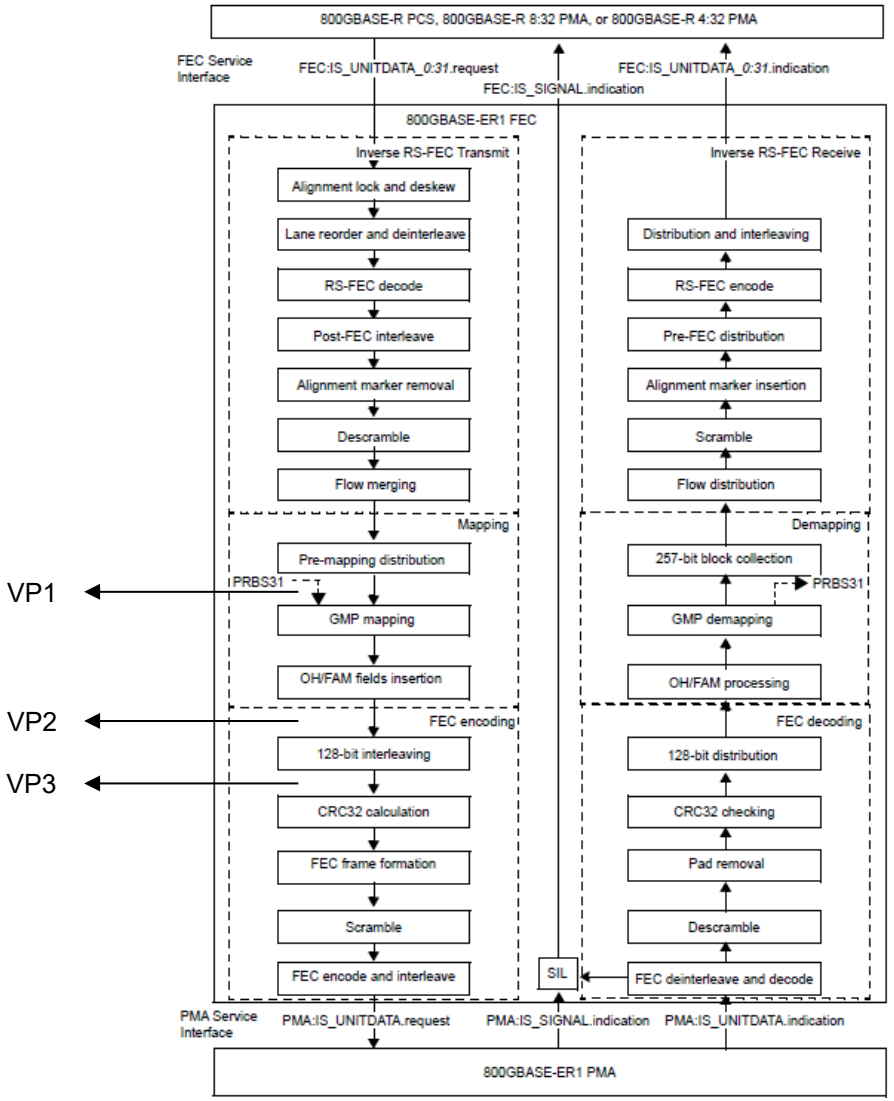

Figure 186A-1 Test vector points for 800GBASE-ER1 FEC

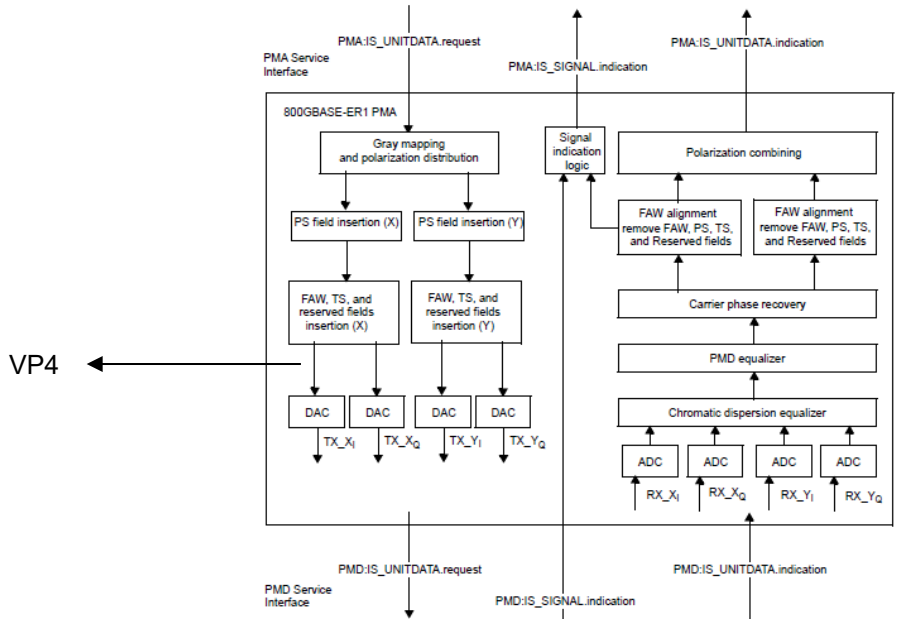

Figure 186A-2 Test vector points for 800GBASE-ER1 PMA

Thanks !