100GBASE-KR1/CR1 AN Direction

IEEE P802.3ck
Ad Hoc

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Introduction

> A dual FEC strategy was adopted for 100GBASE-CR1/KR1 at the November Plenary:

Move to adopt clause 82 as the PCS, a dual FEC strategy based on gustlin_3ck_01_0719 (but with CL91 as the default FEC and the remaining AN TBD), and clause 135 as the PMA for the 100GBASE-CR1 and 100GBASE-KR1 PHYs.

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> We now need to close on the AN strategy

AN High Level Operation

> Technology Ability bit A22 is made into FEC request (F4) bit for 100G-CR1/KR1

– Leaves A19,A20,A21 unused in BasePage

> F4 is then used negotiate between two operating modes

– FEC mode default is currently non interleaved (Clause 91)

– F4 is a request to use the non-default operating mode

FEC AN Resolution Options

➤ Default FEC is Clause 91 (non Interleaved)

➤ Options for negotiation (assuming no ability bit):

A. If either side requests Interleaved (clause 161), use interleaved FEC

- It is mandatory to implement Interleaved in both TX and RX directions
- Larger burden but most robust option

B. If both sides requests Interleaved (clause 161), use interleaved FEC

- Interleaved could be considered as optional to implement
- Least burden but less robust

C. If both sides requests Interleaved (clause 161), use interleaved FEC

- Interleaved is required to be implemented
- Larger burden and less robust option

D. FEC is decided by the RX per direction, request what you want for your RX

- We can have different FEC schemes per direction
- Each side must implement interleaved in the TX direction, RX is optional to implement interleaved
- Compromise on burden, asymmetric operational mode

FEC AN Resolution Options

Option	A	B	C	D
Mode – who determines Interleaved usage	Either	Both	Both	Each Receiver
FEC Robustness	Higher	Lower	Lower	Higher
Interleaved Implementation	TX + RX	Optional	TX + RX	TX
Symmetric operation	Yes	Yes	Yes	No
Implementation burden	Highest	Lowest	Highest	In between

Discuss options

➤ 4 options are shown, we need to agree on one as the implementation

Thanks!