Cl 73 AN baseline proposal for 802.3cd

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Supporters

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802.3cd Objectives for Copper Links

- 50GBASE-CR
- 50GBASE-KR
- 100GBASE-CR2
- 100GBASE-KR2
- 200GBASE-CR4
- 200GBASE-KR4

Clause 73 Auto-Negotiation Process

- Provides mechanism for links to negotiate to fastest rate both sides advertise they can run at.
- Useful for plug-and-play linking up
- Copper PHY type support only

Proposal

- Update Clause 73 AN to support new copper PHY types
- Follow the 802.3BY approach of not distinguishing between the Backplane and Copper Cable PHYs during AN.
  - The same SerDes generally supports both Direct Attach Copper (DAC) and Backplane (BP)
  - Implementations know if the Port is DAC or BP so they can take care of all the necessary SerDes setup before starting AN to configure the appropriate PMD operation
- FEC is non-negotiable for these PHYs

Table 73-4 Technology Ability Field Updates

Bit	Technology
A8	100GBASE-CR4
A9	25GBASE-KR-S or 25GBASE-CR-S
A10	25GBASE-KR or 25GBASE-CR
A11	2.5GBASE-KX[1]
A12	5GBASE-KR[1]
A13	50GBASE-KR or 50GBASE-CR
A14	100GBASE-KR2 or 100GBASE-CR2
A15	200GBASE-KR4 or 200GBASE-CR4
A16 through A22	Reserved for future technology

1. Added by 802.3cb

Table 73-5 Priority Resolution Updates

Priority	Technology	Capability
1	200GBASE-CR4 or 200GBASE-KR4	200Gb/s 4 lane, highest priority
2	100GBASE-CR2 or 100GBASE-KR2	100Gb/s 2 lane
3	100GBASE-CR4	100Gb/s 4 lane~~, highest priority~~
4	100GBASE-KR4	100Gb/s 4 lane
5	100GBASE-KP4	100Gb/s 4 lane
6	100GBASE-CR10	100Gb/s 10 lane
7	50GBASE-CR or 50GBASE-KR	50Gb/s 1 lane
8	40GBASE-CR4	40Gb/s 4 lane
9	40GBASE-KR4	40Gb/s 4 lane
10	25GBASE-CR or 25GBASE-KR	25Gb/s 1 lane
11	25GBASE-CR-S or 25GBASE-KR-S	25Gb/s 1 lane, short reach
…	Etc.	

Conclusion

- The previous two slides provide a baseline for how to update Cl 73 to support the new copper PHYs being defined in P802.3cd

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