Clause 45 Overlap

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January 27, 2005

Clause 45 Problem Areas

- Currently, 3 projects are simultaneously proposing modifications to the clause 45 register space.
- PMA/PMD Control 2 (1.7)
- 10G PMA/PMD Extended Ability Register (1.11)
- Register placement for Auto-Negotiation, Start-Up Protocol (1.110 and above)

PMA/PMD Control 2

Table 45–7—10G PMA/PMD control 2 register bit definitions

Bit(s)	Name	Description	R/W[a]
1.7.15:3	Reserved	Value always 0, writes ignored	R/W
1.7.2:0	PMA/PMD type selection	2 1 0 1 1 1= 10GBASE-SR PMA/PMD type 1 1 0= 10GBASE-LR PMA/PMD type 1 0 1= 10GBASE-ER PMA/PMD type 1 0 0= 10GBASE-LX4 PMA/PMD type 0 1 1= 10GBASE-SW PMA/PMD type 0 1 0= 10GBASE-LW PMA/PMD type 0 0 1= 10GBASE-EW PMA/PMD type 0 0 0= ~~Reserved~~ 10GBASE-CX4 PMA/PMD type	R/W

[a]R/W – Read/Write

Dawe suggested remedy (comment #33)

1.7.x					TYPE
4	3	2	1	0	
1	1	0	0	0	10GBASE-KR
1	0	0	0	0	10GBASE-KX4
0	1	1	1	0	10GBASE-LRM
0	1	0	0	0	10GBASE-T

Booth proposal (recommended)

1.7.x				TYPE
3	2	1	0	
1	0	1	1	10GBASE-KR
1	0	1	0	10GBASE-KX4
1	0	0	1	10GBASE-T
1	0	0	0	10GBASE-LRM

10G PMA/PMD Ext. Ability Register

Table 45–11—10G PMA/PMD Extended Ability register bit definitions

Bit(s)	Name	Description	R/W[a]
1.11.15:1	Reserved	Ignore on read	RO
1.11.0	10GBASE-CX4 ability	1 = PMA/PMD is able to perform 10GBASE-CX4 0 = PMA/PMD is not able to perform 10GBASE-CX4	RO

[a]RO = Read Only

Booth proposal (recommended)

1.11.4	**1 = PMA/PMD is able to perform 10GBASE-KR 0 = PMA/PMD is not able to perform 10GBASE-KR**	**1.11.2**
1.11.3	**1 = PMA/PMD is able to perform 10GBASE-KX4 0 = PMA/PMD is not able to perform 10GBASE-KX4**	**1.11.4**
1.11.2	**1 = PMA/PMD is able to perform 10GBASE-T 0 = PMA/PMD is not able to perform 10GBASE-T**	**1.11.1**
1.11.1	**1 = PMA/PMD is able to perform 10GBASE-LRM 0 = PMA/PMD is not able to perform 10GBASE-LRM**	**1.11.3**

Dawe suggested remedy (comment #32)

Allocation of Registers (1/2)

- IEEE P802.3ap will need to allocate registers in MMD 1 to support the 10GBASE-KR Start-Up Protocol and Auto-Negotiation.
  - Consider moving auto-negotiation to a separate MMD.
- IEEE P802.3an will also utilize register space in MMD 1.
- Non-overlapping regions should be allocated for use by the respective projects.

IEEE P802.3ap Draft 0.7, Table 45-2

Move to new AN MMD (recommended)

1.120 through 1.199	Backplane Ethernet Registers as defined in subclause 45.2.1.59
1.200 through 1.32 767	Reserved

IEEE P802.3an Draft 1.2, Table 45-3

1.110 through 1.128	Reserved
1.129	10GBASE-T status
1.130	10GBASE-T THP setting
1.132	10GBASE-T TX power level setting
1.133 through 1.32 767	Reserved

Allocation of Registers (2/2)

- 15 registers currently identified to support Backplane Ethernet Auto-Negotiation.
- Perhaps another 9 required to support 10GBASE-KR start-up.
- To support future expansion, allocate N registers in MMD 1 for Backplane Ethernet.
  - Block begins at register X.
- Consider transferring Auto-Negotiation to a separate MMD.
  - Claim reserved MMD 7 for this purpose?

AN MMD

- Open 28 to show bit mapping to 45
- New MMD (7) for AN
- Separate register spaces for .3an and .3ap for project specific registers