8802-3/802.3 REVISION REQUEST 1078

DATE: 8th July, 2001
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REQUESTED REVISION:
STANDARD: IEEE Std. 802.3-2000
CLAUSE NUMBER: 28.2.4.1.5, Table 28-5 and Table 28-8
CLAUSE TITLE: Auto-Negotiation expansion register (Register 6) and State diagram variable to MII register mapping

PROPOSED REVISION TEXT:

See IEEE P802.3aj draft.

RATIONALE FOR REVISION:
Clause 28.3 states, In the case of any ambiguity between stated requirements and the state diagrams, the state diagrams shall take precedence. This is a problem because Register 8 (AN link partner next page ability register) is never used by the state diagrams. The mr_page_rx variable defines that the received Link Code Word is written to mr_lp_adv_ability[16:1] and Table 28-8 State diagram variable to MII register mapping: states that mr_lp_adv_ability[16:1] maps to MII Register 5 (Auto-Negotiation link partner ability register).

Textual definition of Register 8 (28.2.4.1.7) states, Support for 100BASE-T2 and 1000BASE-T requires support for Next Page and the provision of an Auto-Negotiation Link Partner Next Page Ability register (register 8) to store Link Partner Next Pages. This text does not answer the dilemma that the use of register 8 is only for next pages used for 100BASE-T2 or 1000BASE-T PHYs, or that register 8 is used for the receipt of all next pages in all PHYs.

This is the rationale behind the proposal to allow all received next pages to be stored in either register 5 or register 8. This leads to defining two new MII register bits in register 6 (AN expansion register). The first bit (6.5 - Received Next Page Storage Location) is used to indicate which register is used to store received next pages. The second bit (6.6 - Receive Next Page Location Able) is used to indicate if the first new register bit (6.5) is supported or not.

This revision will also solve the problem of when mr_page_rx is indicated during reception of next pages, which register is checked by management. This will also solve the external MII transceiver problem where the user of an implementation does not have prior knowledge of how the implementation works.

IMPACT ON EXISTING NETWORKS:

None. Received Next Pages can still be stored in either register 5 or register 8. Two new optional bits (6.5 - Received Next Page Storage Location and 6.6 - Receive Next Page Location Able) are defined however in existing implementations, and implementation that chooses not to implement them, these two bits will both be set to zero. This will indicate, through the Receive Next Page Location Able bit (6.6) being zero, that an indication of the register used to store received Next Pages is not provided.

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