



# Clause 46 Breakout Report

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November 8, 2000

# Clause 46 Issues

- XGMII Electrical
- XGMII data stream sequences
  - Delimiter robustness
  - Starting sequence options
  - Generation of DATA\_COMPLETE
  - Generation of DATA\_NOT\_VALID
- Delay specifications

# Logic type/level

- There is no standard for HSTL at 1.8 volts
- TF only left other parameters TBD
- XGMII electrical application
  - Near term chip-to-chip
  - I/O available in FPGA and quick turn ASIC
  - Should be a standard I/O, not custom
- Class I, 1.5 volt HSTL added under editor's note

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# Electrical Work items

- XGMII Electrical Interface Options
  - Develop 1.8v specifications
  - Reference Class I, 1.5v HSTL & select options
  - Revert to SSTL per 802.3ae/D1.0
- Tasks
  - Logic parameters
  - Termination
  - Timing



# Motion 1

Move to select 1.5v HSTL for the XGMII electrical specification per EIA/JESD8-6.

M: Pannell, S: Dineen

Y:27, N: 0, A:10

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## Motion 2

Move to accept HSTL Class I per  
EIA/JESD8-6, Aug 1995.

M: Lynch, S: Dineen

Y: 37, N: 0, A: 2



## Motion 3

Move that XGMII to be source centered  
RXCLK on the RXD/RXC.

M: Porter, S: Dedrick

Y: 28, N: 13, A: 5



# Motion 4

Move that the XGMII revert back to the Draft 1.0 interface timing (i.e., source centered in both directions).

M: Porter, S: Baumer

Y: 25, N: 11, A: 12





**We have no XGMII  
timing  
specifications!**

# XGMII Sequence

- Delimiter robustness
  - Leave it to the PCS?
  - Add checking to XGMII?
    - Idle, Start; Terminate, Idle
- Preamble options
  - Optionally reject frame if:
    - Start not aligned to Lane 0
    - Preamble length
    - Preamble contents
    - SFD not aligned to Lane 3

# MAC Service Interface

- XGMII doesn't have RX\_DV equivalent
- DATA\_COMPLETE on:
  - Control character (current draft)
  - Control character not Error (fewer runt frames)
  - Terminate or Idle
  - Something else?

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# Voice Agreements

- PCS should enforce delimiter robustness (current draft expect RS to check).
- Preamble check should only be for data, not data pattern
- DATA\_COMPLETE will be signaled on any Control except Error



## 802.3ae Motion

Affirm motions 1 and 2 and the Voice  
votes of the Clause 46 Breakout  
Meeting.

M: Grow

Unanimous by voice