

Attendance:

Mr. Ziad Matni	Agere Systems
Mr. Bernhard Laschinsky	Agere Systems
Ms. Fei Xie	Agilent Technologies
Mr. Paul von Stamwitz	AMCC
Ms. David Freeman	Finisar
Mr. Barry Olawsky	Hewlett Packard Co.
Mr. Rob Elliott	Hewlett Packard Co.
Dr. Mark Seidel	Intel Corp.
Mr. Schelto van Doorn	Intel Corp
Mr. Harvey Newman	Infineon Technology
Mr. Praveen Viraraghavan	LSI Logic Corp
Mr. Gabriel Romero	LSI Logic Corp.
Mr. Wei Zhou	Marvell Semiconductor, Inc.
Mr. Hock Seow	NEC Electronics America, Inc
Mr. Amr Wassal	PMC-Sierra
Mr. Yuriy Greshishchev	PMC-Sierra
Mr. Robert Watson	PMC-Sierra
Mr. Alvin Cox	Seagate Technology
Ms. Judy Westby	Seagate Technology
Mr. Stephen Finch	STMicroelectronics
Mr. Doug Loree	Toshiba
Mr. Adrian Robinson	Vitesse Semiconductor
Mr. Kevin Witt	Vitesse Semiconductor

23 in attendance

Agenda:

1. Speed negotiation sequence: Long burst versus COMWAKE.

SAS-2 SNW-3 Definition (06-355) [Wassal & Watson]
<http://www.t10.org/ftp/t10/document.06/06-355r1.pdf>

SAS-2 Start-up training sequence [Newman]
<http://www.t10.org/ftp/t10/document.05/05-397r6.pdf>

A Look At COMWAKE For Use In SNW3 [Finch]
<http://www.t10.org/ftp/t10/document.06/06-365r1.pdf>

This proposal claims there is no timing issue when RCDT precedes the first COMWAKE. It did not include SSC in the uncertainty calculation in r0, but that analysis has been included in r1. The uncertainty concern was when there is a long idle time, but the additional analysis based on 32 bits shows no issue.

Harvey will analyze effects of SSC on the long burst version.

2. Review information transferred proposal by Rob.

SAS-2 SNW-3 bit definitions
<http://www.t10.org/ftp/t10/document.06/06-363r1.pdf>

After significant discussion the degraded bit was deleted.

Rob expressed a strong preference for only 32 bits including start bit and parity. This is a better number so there are not so many bits to deal with in the PHY tables and since it doesn't appear that the number of bits allowed by using COMWAKE in SNW3 are needed.

Auto-negotiation sequence for reducing PHY parameters per the priority table has been redefined as a new final SNW immediately following a failed SNW4 window. The reduction to be based on common capabilities so that a system that requires a particular feature (such as SSC) can load the capability table to maintain that particular feature. The reduced final SNW's will continue as many times as required/possible. This method eliminates issues that were identified when the sequence SNW3 window was retransmitted with a degraded feature set. New capabilities and their priorities can be stacked in the priority table and should not affect backwards compatibility.

It was decided to use single parity bit error assuming 30 bits of data + start + parity rather than CRC or some other method of error detection for the data transferred in SNW3. This will require defining what parity means. (Does it include the start bit, parity bit, etc?) A parity error will be treated as a PHY reset problem and let the system handle the error.

Amr to begin state machine changes.
Rob will update 06-363.

3. Final speed negotiation window details. (Not discussed)

Seed value?

A concern was raised that using the scrambler in the training sequence may involve the link layer. Seagate suggests that the 0 seed not be required with every window. Intel also expressed support.

Start of window:

Since the last interval in the configuration window is idle, the training data may start at the beginning of the final speed negotiation window, but shall start by the end of a defined RCDT (not necessarily the same length of time as the previous RCDT's). Input is needed on how long this RCDT should be.

Completion of window:

How is the final speed negotiation window completed? Should there be ALIGN0/ALIGN1 after TRAINdone is exchanged to verify dword sync?

Need to verify the impact to state machines to determine if the ALIGN exchange is needed.

Next conference call Aug 24, 2006

Agenda:

- COMWAKE versus long burst decision
- Data transferred during SNW3
- State machines review
- SNW4 format

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Webex information:

<https://seagate.webex.com/seagate>

Topic: SAS-2 PHY WG

Date: Thursday, Aug 24, 2006

Time: 10:00 am, Central Daylight Time (GMT -05:00, Chicago)

Meeting number: 826 515 680

Meeting password: 6gbpsSAS