# Summary of Comments on Serial Attached SCSI Standard

## Page: 14

Sequence number: 1
Author: George Penokie
Date: 4/8/2003 4:54:28 PM
Type: Strikeout

3.2 Symbols and abbreviations
This comment was and several like it were rejected however it is valid and should be reconsidered.
REJECT (since we don't say "primitive" after each one in the text, the reader might not realize some obscure string of capital letters is a primitive name.) The first instance of the primitive names is in the primitive table. That is the logical place for these to be defined.
3.2 Symbols and abbreviations
Primitives should not be listed in the abbreviations list. Remove all primitives from the list.

## Page: 47

Sequence number: 1
Author: George Penokie
Date: 4/8/2003 4:37:26 PM
Type: Note

Figure 27
This comment was rejected however it is valid and should be reconsidered.
REJECT (some of these have special meaning for STP) - Then only keep the relvent ones.
Figure 23
In general this is too detailed for a SAS standard. Reduce the details. At a minimum reduce or eliminate the SATA primitives. All that is needed are some  << SATA primitives >>  labels.

## Page: 50

Sequence number: 1
Author: George Penokie
Date: 4/8/2003 4:32:13 PM
Type: Note

4.3.4.1 Messages between phy layer and other layers
This comment was rejected however it is valid and should be reconsidered.
REJECT
4.3.3 Signals
Tables 9 through 22
There needs to be a better notation for the direction indication. the --> and <-- looks hookey.

## Page: 59

Sequence number: 1
Author: George Penokie
Date: 4/3/2003 4:26:50 PM -06'00'
Type: Highlight

4.5 I_T nexus loss
There needs to be an << or>> at the end of item b << Control mode page (see 10.2.6.2) expires; >>

Sequence number: 2

Author: George Penokie
Date: 4/3/2003 4:26:56 PM -06'00'
Type: Highlight
4.5 I_T nexus loss
This is not consistent with the description in section 8.2.2.3.4 << OPEN_REJECT (CONNECTION RATE
NOT SUPPORTED), >> it should be << OPEN_REJECT (PROTOCOL
NOT SUPPORTED)

# Page: 71

Sequence number: 1
Author: George Penokie
Date: 4/8/2003 4:22:10 PM
Type: Strikeout
4.6.7.5 Expander route index order
This comment was rejected however it is valid and should be reconsidered.
REJECT (the example is of a sequence of unknown length not a 3 level sequence)
4.6.9 Expander connection router interface
The <<, etc.>> should be deleted because the e.g. implies an etc. at the end of the list.

# Page: 78

Sequence number: 1
Author: George Penokie
Date: 4/8/2003 4:36:36 PM
Type: Highlight
5.2.1 SATA cables and connectors (informative)
This comment was rejected however it is valid and should be reconsidered.
REJECT (per SAS PHY WG
Reject IBM comment: Adds to the normative explanation of the SAS connection scheme by showing similarities.)
5.1 SATA cables and connectors (informative)
This section should be placed in a annex that describes any SATA specific functions.

# Page: 103

Sequence number: 1
Author: George Penokie
Date: 4/8/2003 4:12:12 PM
Type: Highlight
Table 47
This comment was rejected however it is valid and should be reconsidered.
The << Usage in SATA >> column should be deleted. As most there could be a  footnote  stating << For the  SATA usage of K28.3
and K28.5 characters see SATA. >>. At a mimimum the << (informative) >> needs to be deleted as it is meaningless.

# Page: 112

Sequence number: 1
Author: George Penokie
Date: 4/8/2003 4:04:07 PM
Type: Highlight
Table 53
This comment was rejected however it is valid and should be reconsidered.
The statement << OOBI is different than UI(OOB) defined in SATA; SAS has tighter clock tolerance. >> is meaningless in this
standard as there are lots of differences between SAS and SATA.  But if it stays it should be changed to << OOBI is different than
UI(OOB) defined in SATA (e.g., SAS has tighter clock tolerance). >>

# Page: 116

Sequence number: 1
Author: George Penokie
Date: 4/8/2003 3:54:57 PM
Type: Highlight

6.6.2 SATA phy reset sequence (informative)
This comment was rejected however it is valid and should be reconsidered.
REJECT (it is most useful in context, which is here.)
6.6.2 SATA phy reset sequence (informative)
This entire section should be deleted as it only described SATA functionality that is a duplicate of what is defined in the SATA document. If not deleted then it should be moved to a informative annex

# Page: 120

Sequence number: 1
Author: George Penokie
Date: 4/8/2003 3:53:17 PM
Type: Strikeout

6.6.4.2 SAS speed negotiation sequence
This comment was rejected however it is valid and should be reconsidered.
REJECT (highlights an important difference)
6.6.4.2 SAS speed negotiation sequence
The statement << like the SATA speed negotiation sequence. >> is not relevant to this standard and should be deleted.

# Page: 131

Sequence number: 1
Author: George Penokie
Date: 4/8/2003 3:43:45 PM
Type: Highlight

6.7.4.1.1 State description
Although this comment was rejected for a valid reason the comment now changes. It is not clear that the << idle >> in this section is not idel dwords. There should at least be a reference to where this idle is defined.
REJECT (this is DC idle not idle dwords)
6.8.3.1.1 State description
The statement << During this state idle shall be transmitted. >> should be changed to << This state shall request idle dwords be transmitted by repeatedly sending a Transmit Idle Dword parameter to
the SP transmitter (see 7.3). >>

Sequence number: 2
Author: George Penokie
Date: 4/8/2003 3:43:51 PM
Type: Highlight

6.7.4.2.1 State description
Although this comment was rejected for a valid reason the comment now changes. It is not clear that the << idle >> in this section is not idel dwords. There should at least be a reference to where this idle is defined.
REJECT (this is DC idle not idle dwords)
6.8.3.1.1 State description
The statement << During this state idle shall be transmitted. >> should be changed to << This state shall request idle dwords be transmitted by repeatedly sending a Transmit Idle Dword parameter to
the SP transmitter (see 7.3). >>

# Page: 134

Sequence number: 1

Author: George Penokie
Date: 4/8/2003 3:31:21 PM
Type: Strikeout
6.7.5 SATA host emulation states
This comment was rejected however it is valid and should be reconsidered.
REJECT (it's a good overview of what these states do)
The statement << During SATA host emulation, the phy transmits a COMWAKE and then waits to receive a COMWAKE. Once a COMWAKE is detected, the phy follows the speed negotiation sequence defined in SATA. >> should be deleted as the information in this statement is duplicate information. At most there should be a reference to the section that defines this behavior.

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Sequence number: 1
Author: George Penokie
Date: 4/8/2003 3:28:59 PM
Type: Highlight
6.7.5.7.1 State description
This comment was rejected however it is valid and should be reconsidered.
REJECT
6.8.4.7.1 State description
The statement << This state shall send a PhyReady (SATA) confirmation >> should be
<< Upon entering this state, this state shall send a PhyReady (SATA) confirmation >>

# Page: 159

Sequence number: 1
Author: George Penokie
Date: 4/8/2003 3:07:35 PM
Type: Highlight
7.2.5.9 NOTIFY
This comment was rejected however it is valid and should be reconsidered.
REJECT (Either ALIGN or NOTIFY fulfills the 2048 dwords.) This is not clearly stated.
7.1.4.9 NOTIFY
****
The way this is now it is possible that the receiver may not get an ALIGN within the 2048 dwords if a NOTIFY replaces an ALIGN. There needs to be a rule that when sending NOTIFYs the transmitter is still required to send ALIGNs at least once every 2048 dwords.

# Page: 161

Sequence number: 1
Author: George Penokie
Date: 4/3/2003 1:07:17 PM -06'00'
Type: Highlight
Table 76
The statement << request would
have to be routed to >> shoud be << request has to be routed to >>

Sequence number: 2
Author: George Penokie
Date: 4/3/2003 4:26:35 PM -06'00'
Type: Highlight
Table 76
Why is the connectin rate not supported in the no retry table when the description states it is retried?

# Page: 162

Sequence number: 1
Author: George Penokie
Date: 4/3/2003 12:58:12 PM -06'00'
Type: Highlight
Table 77
Change << would have to be >> to << has to be >>.

Sequence number: 2
Author: George Penokie
Date: 4/3/2003 4:26:09 PM -06'00'
Type: Highlight
Table 77
What does << Abandon connection >> mean?

Sequence number: 3
Author: George Penokie
Date: 4/3/2003 4:26:16 PM -06'00'
Type: Highlight
Table 77
What does << Abandon connection >> mean?

# Page: 185

Sequence number: 1
Author: George Penokie
Date: 4/8/2003 2:38:15 PM
Type: Highlight
7.9.5.3.4.2 Transition SL_IR_TIR3:Transmit_Hard_Reset to SL_IR_TIR4:Completed
This comment was rejected however it is valid and should be reconsidered.
REJECT (state description discusses receiving; simpler to base transition only on sending) The transitions are supposed to be accurate and not leave anything to the imangation.
7.8.6.1.4.2 Transition SL_IR_TIR3:Transmit_Hard_Reset to SL_IR_TIR3:Completed
The statement << This transition shall occur after sending a HARD_RESET Transmitted confirmation. >> should be << This transition shall occur after:
a) receiving a HARD_RESET Transmitted parameter; and
b) sending a HARD_RESET Transmitted confirmation to the management application layer. >>.

Sequence number: 2
Author: George Penokie
Date: 4/8/2003 3:07:09 PM
Type: Highlight
7.9.5.3.3.2 Transition SL_IR_TIR2:Transmit_Identify to SL_IR_TIR4:Completed
This comment was rejected however it is valid and should be reconsidered.
REJECT (the state description talks about receiving.  Just transition after doing the last thing is simpler) The transitions are supposed to be accurate and not leave anything to the imangation.
7.8.6.1.3.2 Transition SL_IR_TIR2:Transmit_Identify to SL_IR_TIR4:Completed
The statement << This transition shall occur after this state has sent an Identify Transmitted parameter. >> should be << This transition shall occur after:
a) receiving a IDENTIFY Transmitted parameter; and
b) sending an Identify Transmitted parameter to the IRC state machine. >>

# Page: 187

Sequence number: 1
Author: George Penokie
Date: 4/8/2003 2:26:37 PM
Type: Highlight
7.9.5.5.3.2 Transition SL_IR_IRC2:Wait to SL_IR_IRC3:Completed
The statement  << Identification Sequence Complete, and/or Phy Enabled confirmation. >> should be << Identification Sequence Complete, or Phy Enabled confirmation. >>. How can this list be both an and and an or. It cannot be both.

# Page: 189

Sequence number: 1
Author: George Penokie
Date: 4/3/2003 4:25:43 PM -06'00'
Type: Highlight
> 7.12.2.2 Connection responses
> This should << SAS target port >> should be << SAS device >> as the port does not handle speed changes.

# Page: 191

Sequence number: 1
Author: George Penokie
Date: 4/8/2003 2:19:37 PM
Type: Highlight
> 7.12.4.3 Partial Pathway Timeout timer
> This comment was rejected however it is valid and should be reconsidered.
> REJECT (this is a good use of must. It's not a shall; it's referring to the effects of a shall somewhere else.) There is no such thing as good use of the word must.
> 7.12.3 Arbitration fairness
> Note 22 states << of the time a device must wait after receiving OPEN_REJECT (PATHWAY BLOCKED) >>
> which has two problems one is the word must is used. If that is changed to a shall which seems logical then problem two occurs in that now you have a requirement in a note which is not allowed. This needs to be fixed.

# Page: 193

Sequence number: 1
Author: George Penokie
Date: 4/8/2003 1:59:33 PM
Type: Strikeout
> 7.12.6 Abandoning a connection request
> This comment was rejected however it is valid and should be reconsidered.
> The statement << transmitting BREAK, the source phy shall initialize a Break Timeout timer to 1 ms and start the Break Timeout timer. If the Break Timeout timer expires before a break response is received, the source phy may assume the physical link is unusable. >> should be deleted as it is duplicated in the state machine descriptions.

Sequence number: 2
Author: George Penokie
Date: 4/8/2003 2:06:11 PM
Type: Highlight
> 7.12.5.3 Fanout expander devices
> This comment was rejected however it is valid and should be reconsidered.
> In the statement << it shall compare >> should be << The fanout expander shall compare >>.

Sequence number: 3
Author: George Penokie
Date: 4/8/2003 2:06:58 PM
Type: Highlight
> 7.12.5.3 Fanout expander devices
> This comment was rejected however it is valid and should be reconsidered.
> In the statement << If it finds a match in one >> should be << If the fanout expander finds a match in one >>.

Sequence number: 4
Author: George Penokie
Date: 4/8/2003 2:07:50 PM
Type: Highlight
> 7.12.5.3 Fanout expander devices
> This comment was rejected however it is valid and should be reconsidered.
> In the statement << If it does not find a match, >> should be << If the fanout expander does not find a match >>.

Sequence number: 5
Author: George Penokie
Date: 4/8/2003 2:55:15 PM
Type: Highlight
   7.12.6 Abandoning a connection request
   REJECT (good use of will - it's not a shall, it's a reflection of some other shalls)
   This comment was rejected however it is valid and should be reconsidered.
   7.12.5 Abandoning a connection request
   The statement << that an open response will not occur. >> should be << that an open response shall not occur >>.

# Page: 195

Sequence number: 1
Author: George Penokie
Date: 4/8/2003 1:55:45 PM
Type: Highlight
   7.12.6 Abandoning a connection request
   REJECT - the title is "breaking a connection" GOP - No is is not.
   This comment was rejected however it is valid and should be reconsidered.
   7.12.5 Abandoning a connection request
   The statement << BREAK to break the connection. >> should be << BREAK to end the connection >>.

# Page: 196

Sequence number: 1
Author: George Penokie
Date: 4/8/2003 10:20:16 AM
Type: Strikeout
   7.13 Rate matching
   This comment was rejected however it is valid and should be reconsidered.
   REJECT (helps explain why we have this bizzare rotation)
   7.13 Rate matching
   The statement << to reduce EMI. >> should be deleted. As that information is not needed.

# Page: 212

Sequence number: 1
Author: George Penokie
Date: 4/8/2003 1:44:47 PM
Type: Highlight
   7.15.3.2 Transition XL0:Idle to XL1:Request_Path
   This comment was rejected however it is valid and should be reconsidered.
   REJECT
   7.15.3.2 Transition XL0:Idle to XL1:Request_Path
   The statement << shall occur when the following conditions are met: >> should be << shall occur if: >>.

# Page: 213

Sequence number: 1
Author: George Penokie
Date: 4/8/2003 1:44:26 PM
Type: Highlight
   7.15.3.3 Transition XL0:Idle to XL5:Forward_Open
   This comment was rejected however it is valid and should be reconsidered.
   REJECT

7.15.3.3 Transition XL0:Idle to XL1:Request_Path
The statement << shall occur when the following conditions are met: >> should be << shall occur if: >>.

# Page: 217

Sequence number: 1
Author: George Penokie
Date: 4/8/2003 1:43:38 PM
Type: Highlight
7.15.10.2 Transition  XL7:Connected to XL8:Close_Wait
This comment was rejected however it is valid and should be reconsidered.
The statement << when a Transmit Close indication is >> should be <<  after a Transmit Close indication is >> .

Sequence number: 2
Author: George Penokie
Date: 4/8/2003 1:28:27 PM
Type: Highlight
7.15.10.4 Transition XL7:Connected to XL10:Break_Wait
The statement << when a Transmit Close indication is >> should be <<  after a Transmit Close indication is >> .

Sequence number: 3
Author: George Penokie
Date: 4/8/2003 1:42:57 PM
Type: Highlight
7.15.11.1 State description
This comment was rejected however it is valid and should be reconsidered.
REJECT (just being in the state suffices)
The statement << This state shall send a Transmit >> gives no indication as to when this is supposed to occur. This needs to be fixed.

Sequence number: 4
Author: George Penokie
Date: 4/8/2003 1:42:47 PM
Type: Highlight
7.15.11.1 State description
This comment was rejected however it is valid and should be reconsidered.
The statement << This state shall send a Transmit >> gives no indication as to when this is supposed to occur. This needs to be fixed.

# Page: 223

Sequence number: 1
Author: George Penokie
Date: 4/8/2003 10:14:41 AM
Type: Strikeout
7.16.7.1 Overview
This comment was rejected however it is valid and should be reconsidered.
REJECT (fine for an overview)
The statement << from the SSP_D1:DONE_Wait state  >> should be deleted as the general rule is that we do not state where things come from in state diagrams.

Sequence number: 2
Author: George Penokie
Date: 4/8/2003 10:14:31 AM
Type: Strikeout
7.16.7.1 Overview
This comment was rejected however it is valid and should be reconsidered.
REJECT (fine for an overview)
The statement << from the SSP_D1:DONE_Wait state  >> should be deleted as the general rule is that we do not state where things come from in state diagrams.

# Page: 227

Sequence number: 1
Author: George Penokie
Date: 4/8/2003 9:23:59 AM
Type: Highlight

7.16.7.2 SSP transmitter and receiver
The term << Transmit Frame >> should be changed to << Transmit Frame (i.e., SOF/data/EOF); and >>

# Page: 266

Sequence number: 1
Author: George Penokie
Date: 4/8/2003 9:56:09 AM
Type: Highlight

9.2.1 SSP frame format
The following was rejected. I disagree and believe it should be changed as requested.
REJECT (semicolons join related sentences)
9.2.1 SSP frame format
The statement << SAM-3; the TAG field >> should be <<SAM-3. The TAG field >>.

Sequence number: 2
Author: George Penokie
Date: 4/8/2003 9:55:59 AM
Type: Highlight

9.2.1 SSP frame format
This comment was rejected. I do not agree with this reject and would like the group to discuss this.
REJECT (no improvement)
9.2.1 SSP frame format
The statement << The TAG field allows the SSP initiator port to establish a context for commands and task management functions. >> should be << The TAG field is an value assigned by the application client and sent to the  SSP initiator port in the  SCSI command information unit and the task management  information unit. The tag is used to establish a context between different commands and different task management functions.  >>

# Page: 267

Sequence number: 1
Author: George Penokie
Date: 4/8/2003 9:43:57 AM
Type: Strikeout

9.2.2.1 COMMAND information unit
This comment was rejected but I believe it is valid and should be changed.
The term <<  SCSI >> should be deleted as it is redundant with SPC-2.

# Page: 281

Sequence number: 1
Author: George Penokie
Date: 4/3/2003 4:25:23 PM -06'00'
Type: Strikeout

9.2.6.2.2.1 ST_ISF state machine overview
The statement  << from the ST_IFR state machine. >> should be deleted.

# Page: 282

Sequence number: 1
Author: George Penokie
Date: 4/3/2003 3:23:58 PM -06'00'
Type: Highlight
    9.2.6.2.2.2.1 State description
    There needs to be an <<or >> after item c <<terminate after sending the message; or >>.

# Page: 283

Sequence number: 1
Author: George Penokie
Date: 4/3/2003 4:24:40 PM -06'00'
Type: Highlight
    9.2.6.2.2.2.4 Transition ST_ISF1:Send_Frame to ST_ISF3:Prepare_Data_Out
    The statement in item b << receiving an XFER_RDY Arrived message followed by an ACK Transmitted Confirmation, if If the
    length of the XFER_RDY frame is 12 bytes and the write data length is correct; or >> has two << if >> in it. Also it should be
    changed to << receiving an XFER_RDY Arrived message followed by an ACK Transmitted Confirmation, if the XFER_RDY frame
    is valid (see 9.2.6.2.2.2.1). >>

Sequence number: 2
Author: George Penokie
Date: 4/3/2003 4:24:13 PM -06'00'
Type: Highlight
    9.2.6.2.2.2.4 Transition ST_ISF1:Send_Frame to ST_ISF3:Prepare_Data_Out
    There seem to be no restriction on making this transition if the XFER_RDY wrtite data length is used up. Unless the statement <<
    first burst size or the write data length. >> is supposed to be refering to the XFER_RDY write data length. If is then it should be <<
    first burst size or the write data length specified in the last XFER_RDY Arrived message. >>

# Page: 284

Sequence number: 1
Author: George Penokie
Date: 4/3/2003 2:44:21 PM -06'00'
Type: Highlight
    9.2.6.2.3 ST_IPD (initiator process data) state machine
    The statement <<If the length of the information unit is zero or >> is duplicated in two consecutive paragraphs. I think the second
    one should be deleted.

# Page: 290

Sequence number: 1
Author: George Penokie
Date: 4/4/2003 11:24:55 AM -06'00'
Type: Highlight
    9.2.6.3.3.3.1 State description
    The statement << (i.e.,
    received with a Data-Out Arrived message), >> is confusing because the Data-Out Arrived message is not used by this state. I
    think it should be deleted.

Sequence number: 2
Author: George Penokie
Date: 4/4/2003 11:25:39 AM -06'00'
Type: Highlight
    9.2.6.3.3.3.1 State description
    The statement << (i.e.,
    received with a Data-Out Arrived message), >> is confusing because the Data-Out Arrived message is not used by this state. I

think it should be deleted.


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Sequence number: 1
Author: George Penokie
Date: 4/3/2003 3:06:52 PM -06'00'
Type: Highlight
9.2.6.3.3.3.1 State description
There is no close ) for the e.g. item a.<< Delivery Subsystem Failure; and >>


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Sequence number: 1
Author: George Penokie
Date: 4/4/2003 11:33:46 AM -06'00'
Type: Highlight
9.2.6.3.3.5.1 State description
The statement << If this state was entered as the result of receiving a Data-Out Arrived message, then this state shall: >> is confusing. I think it should be << If this state machine was started as the result of receiving a Data-Out Arrived message, then this state is entered and shall: >>


# Page: 293

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Sequence number: 1
Author: George Penokie
Date: 4/4/2003 5:02:22 PM -06'00'
Type: Note
9.2.6.3.3.5.2 Transition ST_TTS4:Receive_Data_Out to ST_TTS5:Prepare_Xfer_Rdy
Seems like there should be a statement here about if the first burst is not enabled.
Make some words

Sequence number: 2
Author: George Penokie
Date: 4/3/2003 4:23:12 PM -06'00'
Type: Highlight
9.2.6.3.3.6.1 State description
The statement << This state shall adjust the write data length to reflect the amount of first burst data. >> should be << If first bust is enabled, this state shall adjust the write data length to reflect the amount of first burst data. >>

Sequence number: 3
Author: George Penokie
Date: 4/3/2003 4:44:14 PM -06'00'
Type: Highlight
9.2.6.3.3.5.1 State description
What happens if a Data-Out Arrived message never occurs?  There needs to be a escape here even it is vendor spedific.  A better solution would be to place an I_T nexus lost timer here. If it trips then send that information to the ULP and stop the machine.

Sequence number: 4
Author: George Penokie
Date: 4/3/2003 3:42:56 PM -06'00'
Type: Strikeout
9.2.6.3.3.5.1 State description
This should be deleted. <<from the ST_TFR state machine. >>


# Page: 323

Sequence number: 1
Author: George Penokie
Date: 4/8/2003 5:12:22 PM
Type: Highlight

10.2.8.1.1 SA_PC state machine overview
I still do not like this wording. It needs to be deleted or changed
REJECT - the fact that it is a superset is important
I still do not like this wording. It needs to be deleted or changed.
10.1.8 SCSI power condition states
The statement << The SA_PC
state machine is an enhanced version of the logical unit power condition state machines described in SPC-3, SBC-2, and RBC. >>
doesn't add anything to  SAS and should be deleted.