Minutes of SAS Protocol Teleconference - June 18, 2002

The teleconference was held from 10:00 am to 12:51 pm CDT. The following people were present on the call:

Name	S	Organization	Electronic Mail Address
Mr. Ron Roberts	P	Adaptec, Inc.	Ron_Roberts@adaptec.com
Mr. Don Allingham	V	Adaptec, Inc.	don_allingham@adaptec.com
Mr. Bill Galloway	P	BREA Technologies, Inc.	billg@breatech.com
Mr. Lafe Moon	V	Data Transit Corp.	lafe@data-transit.com
Mr. Rob Elliott	P	Hewlett Packard Co.	Elliott@hp.com
Mr. Jim Reif	V	Hewlett Packard Co.	jim.reif@hp.com
Mr. Matt Otto	V	I-TECH Corp.	matt_otto@i-tech.com
Mr. George O. Penokie	P	IBM / Tivoli Systems	gop@us.ibm.com
Mr. John Lohmeyer	P	LSI Logic Corp.	lohmeyer@t10.org
Mr. Brian Day	V	LSI Logic Corp.	brian.day@lsil.com
Mr. Tim Hoglund	V	LSI Logic Corp.	tim.hoglund@lsil.com
Mr. David Noeldner	V	LSI Logic Corp.	dave.noeldner@lsil.com
Mr. Mark Evans	P	Maxtor Corp.	mark_evans@maxtor.com
Mr. David Cressman	V	Maxtor Corp.	dave_cressman@maxtor.com
Mr. Edward A. Gardner	P	Ophidian Designs	eag@ophidian.com
Mr. Ting Li Chan	V	QLogic Corp.	ting.chan@qlogic.com
Mr. Arie Krantz	V	QLogic Corp.	l_krantz@qlc.com
Mr. Jim Coomes	V	Seagate Technology	jim_coomes@seagate.com
Mr. Scott Younger	V	Seagate Technology	Scott.T.Younger@seagate.com

19 People Present

Status Key: P   - Principal
             A,A# - Alternate
             AV   - Advisory Member
             L   - Liaison
             V   - Visitor

** Approval of Agenda

The agenda was:

        Approval of Agenda
        SAS Bit order for scrambling and CRC (02-219) [Coomes]
        CRC code sample [Coomes]
        AEN on SAS (02-196) [Penokie]
        What does it mean to ignore or discard a frame? [Galloway]
        SAS Identification State Machine (02-197) [Penokie]
        SAS Working Draft Review [Elliott]
        Scrambling code sample [Coomes]
        Transmitting a DONE primitive to close an SAS connection (02-201)
        [Steve Byan]
        Behaviour when receiving a BREAK primitive while in an SAS connection
        (02-205) [Steve Byan]
        Dealing with extra ACK and NAK primitives in SAS (02-204) [Steve Byan]
        SAS Credit Not Ready (02-215) [Galloway]
        SAS SMP transport layer state diagrams (02-216) [Penokie]
        SAS Port Control State Diagram Update (02-202) [Worden]

SSP transport layer state machines (02-230) [Mark Evans]
        Review of Recommendations to the Plenary
        Meeting Schedule

Items added at the meeting:

        none.

** SAS Bit order for scrambling and CRC (02-219) [Coomes]

Jim Coomes presented some C code for calculating scrambling and CRC. Jim
agreed to post the document on the web site.

** CRC code sample [Coomes]

Addressed under the above agenda item.

** AEN on SAS (02-196) [Penokie]

George Penokie described his concerns over the direction taken at the
Minneapolis meeting (an outstanding command that waits for an AEN event).
George was concerned that this approach consumes too many target resources.
He is returning to a broadcast AEN primitive that contains no source
information. He is also willing to accept the idea of no AEN support in SAS.

** What does it mean to ignore or discard a frame? [Galloway]

Bill Galloway asked for input regarding this topic. He plans to write up a
proposal for next week's meeting.

** SAS Identification State Machine (02-197) [Penokie]

George Penokie presented 02-197r1, SAS Identification State Machine. He
crashed and burned.

Later, after re-booting, George continued presenting 02-197r1. He received
input and agreed to revise his proposal. In absence of objections, the group
agreed that 02-197r2 (r1 as revised) be recommended for inclusion in the SAS
working draft.

** SAS Working Draft Review [Elliott]

Rob Elliott presented sas-r00b. He highlighted some of the changes. He noted
that Figure 4 includes UML conventions. He encouraged people to review rev
00b before next week's meeting.

** Scrambling code sample [Coomes]

Addressed under the first agenda item.

**** Transmitting a DONE primitive to close an SAS connection (02-201)
        [Steve Byan]**

Mark Evans presented 02-201r1. Mark agreed to prepare a revision of his proposal, using the words 'source' and 'destination'. He will also investigate the impacts on the state machines.

** Behaviour when receiving a BREAK primitive while in an SAS connection (02-205) [Steve Byan]

Mark Evans presented 02-205r1. Mark received input and agreed to prepare another revision.

** Dealing with extra ACK and NAK primitives in SAS (02-204) [Steve Byan]

Mark Evans presented 02-204r1. In absence of objections, the group agreed that 02-204r1 be recommended for inclusion in the SAS working draft.

** SAS Credit Not Ready (02-215) [Galloway]

Bill Galloway presented 02-215r0, SAS Credit Not Ready. He received input regarding adding a new CREDIT_BLOCKED primitive. There was discussion over how this proposal would affect the SAS SSP link layer state machine. Bill agreed to investigate ACK/NACK balance before sending CREDIT_BLOCKED.

** SAS SMP transport layer state diagrams (02-216) [Penokie]

Deferred.

** SAS Port Control State Diagram Update (02-202) [Worden]

Deferred.

** SSP transport layer state machines (02-230) [Mark Evans]

Mark Evans presented 02-230r0, SSP transport layer state machines. He received input and agreed to prepare another revision.

Rob Elliott suggested that in all the state diagrams, we eliminate the labels on transitions that stay on the same page. We will discuss the suggestion further next week.

** Review of Recommendations to the Plenary

John Lohmeyer noted that the following recommendations have been made to the T10 plenary:

Recommendations from the May 14, 2002 teleconference:
that 02-169r2 be accepted for inclusion in the SAS working draft.
that 02-170r1 be accepted for inclusion in the SAS working draft.

Recommendations from the May 21, 2002 teleconference:
none.

Recommendations from the June 5-7 meeting:
that 02-179r1 (r0 as revised) be recommended for inclusion in the SAS working draft.

02-211r1 (r0 as revised) be accepted for inclusion in the SAS working draft.
02-212r1 (r0 as revised) be accepted for inclusion in the SAS working draft.
02-218r0, which recommends that the SMP FER Loopback function be removed, be accepted and that the SAS technical editor be directed to remove the SMP FER Loopback function.
that 02-203r1 (r0 as revised) be recommended for inclusion in the SAS working draft.
that 02-217r0 be recommended for inclusion in the SAS working draft.
that 02-214r1 be recommended for inclusion in the SAS working draft.

Recommendations from the June 18, 2002 teleconference:
that 02-204r1 be recommended for inclusion in the SAS working draft.
that 02-197r2 (r1 as revised) be recommended for inclusion in the SAS working draft.

** Meeting Schedule

A SAS Protocol teleconference is scheduled for July 9, 2002:

Call information:
    Tuesday July 9, 2002
    11:00 am -- 2:00 pm EDT
    10:00 am -- 1:00 pm CDT
     9:00 am -- noon   MDT
     8:00 am -- 11:00 am PDT

    USA Toll Free Number: 877-417-9828
            Toll Number: +1-706-679-9028
         Conference Code: 719 533 7560

WebEx Session: http://seagate.webex.com/
 Meeting Name: SAS Protocol teleconference
     Password: to be announced on T10 reflector

Face-to-face SAS Protocol meetings are scheduled for:

June 24-26, 2002 in Denver, CO starting at 9:00 am on Monday and ending at noon on Wednesday. See http://www.t10.org/ftp/t10/sas0624.txt for meeting information. (No concurrent Physical meeting.)

July 15-16, 2002 in Colorado Springs, CO with T10. See http://www.t10.org/ftp/t10/announce/ann-m050.pdf for meeting information and http://www.t10.org/ftp/t10/mtg_map.txt for meeting times. There will also be a concurrent SAS Physical meeting.

August 21-23, 2002 in Shrewsbury, MA starting at 9:00 am on Wednesday and ending at noon on Friday. Mark Evans will post meeting information to the T10 reflector.