Draft Minutes
Automation/Drive Interface (ADI) Working Group
Ad Hoc Teleconference
T10/04-353r0
28 October 2004
7:30 AM – 9:30 AM PDT

1. Introductions: Group

   Paul Suhler called the meeting to order at 7:34 AM PDT. He thanked ADIC for hosting the meeting. A table of the attendees appears at the end of these minutes.

2. Approval of the agenda: Paul Suhler

   Paul Suhler discussed the order of the discussion items. No one requested additions or alterations.

   Rod Wideman made a motion for acceptance of the agenda. Michael Banther seconded the motion. In the absence of objections or abstentions, the group passed the motion unanimously.

3. Comments on previous meeting minutes: Paul Suhler

13 – 14 September 2004 meeting	04-304r0
7 October 2004 teleconference	04-334r0
14 October 2004 teleconference	04-336r0
18 October 2004 teleconference	04-338r0
21 October 2004 teleconference	04-347r0

   Paul Suhler requested comments for the minutes of the 13 – 14 September 2004 meeting and the teleconferences of 7 October, 14 October, 18 October, and 21 October 2004 – 04-304r0, 04-334r0, 04-336r0, 04-338r0, and 04-347r0 respectively. No comments were forthcoming.

4. Review of action items: Michael Banther

   a. Kevin Butt will investigate writing a proposal against ADT letter ballot 04-162r1, comment 27. *Carryover*

   b. Michael Banther will write a proposal to place all of the IU statements associated with entry into a state in the state description sub-clause and to remove such statements from the transition sub-clauses (remembering to rationalize incomplete statements). This proposal will also change the description of each state machine to clearly indicate what state it is in upon activation. He will produce this proposal for the September or November 2004 meeting. *Carryover*

   c. Kevin Butt will write a proposal against SPC-3 to add automation type MAM attributes (reference ADC letter ballot 04-197r1, comment IBM Roberts - 2). *Carryover*

d. Kevin Butt will bring in a proposal to add a Test IU to ADT (reference ADT letter ballot 04-162r1, comment IBM 122). *Carryover*

e. Matthew Bondurant will bring in a proposal for a Reset link service IU which causes a warm boot. *Carryover*

f. Michael Banther will investigate the need for ADT letter ballot 04-162r1, comment HPQ 101. *Carryover*

5. Discussion items:

a. Add more error handling to ADT encapsulated SCSI protocol (04-348r0) [Entzel].

Paul Entzel walked the group through the body of the proposal.

Regarding the SCSI Command IU, Paul Entzel pointed out the use of "may" in the SAS text that he followed and his supposition that it should be a "shall". Kevin Butt asked if the use of "may" may have to do with the fact an upper layer actually deals with the condition. Paul stated that SAM may place a requirement on this behaviour. A search of SAM-2 revealed that it requires all transport layers to state whether their Task Manager can detect overlapped conditions. If a Task Manager can detect an overlapped condition, SAM-2 requires the Task Manager to return CHECK CONDITION status. Paul modified his proposal to incorporate the SAM-2 text.

Michael Banther complained about limiting the size-type criteria to "too short" for SCSI Task Management IU's. Rod Wideman and Matthew Bondurant agreed. Kevin Butt asked if the group has rejected George Penokie's letter ballot comment on using revision fields in the Port Login IU. Matthew responded that he believes we have rejected it. Kevin asked why SAS chose to limit their criteria to "too short". Michael suggested that perhaps SAS uses a variable length Task information unit. Paul Entzel replied that it's fixed in SAS at 28 bytes. Paul agreed to change the SCSI Task Management IU size-type criteria to exactly 4 bytes.

Paul Entzel moved on to consider the detection of overlapped exchanges with a SCSI Task Management IU. The group agreed that a TMF doesn't have its own tag. The group then spent some time debating what Exchange ID a TMF should have. Kevin Butt pointed out that SAM-3 allows a transport to overlap a task tag with the "tag" used by a TMF. Michael Banther suggested requiring that overlap, but Paul disagreed. He pointed out that if we allow any overlapping, an application client cannot distinguish between the response to a TMF and the response to the task being managed.

The group moved into a debate about including the PROTOCOL field and the X_ORIGIN bit in the SCSI task tag. Much debate ensued. After some time, the group agreed that Paul Entzel will investigate overlapped exchange ID's, especially the way FCP handles this situation. He noted that the use of "tag" in the TMF text will probably change to "EXCHANGE ID".

Regarding incorrect length SCSI Transfer Ready IU's received by an initiator port; Matthew Bondurant and Michael Banther questioned whether discarding the frame included sending an ACK IU. Paul Entzel agreed to add text that requires the receiver to send an ACK IU and then discard the frame. Kevin Butt objected to the option given to an initiator port receiving a bad SCSI Transfer Ready IU to abort the command. He wants a more specific text. Paul resisted stating that he doesn't want to place a requirement on the initiator. After much debate, Rod Wideman asked if the current text

causes an interoperability problem. Eventually the group decided to solve this problem by ignoring it.

The group moved on to considering an incorrect length SCSI Transfer Ready IU received by a target port. Surprisingly, we all agreed that having the target port send a CHECK CONDITION status and generate sense data, even though it crosses entity boundaries in the SCSI architecture, is the right thing to do. However Kevin Butt objected to using the term “terminate” in “terminate the command”. He prefers “abort the command” citing the fact that the sense key is set to ABORTED COMMAND. Kevin stated that he doesn’t want the target port to simply drop the task without responding to the application client. Michael Banther pointed out that some SPC-3 usage of “aborted” includes statements that the device server doesn’t respond to the application client. After much debate, we agreed to keep “terminated”.

A brief consideration of the paragraph dealing with an initiator port receiving a SCSI Transfer Ready IU for a command with no write data revealed that the initiator port cannot know whether a command has write data or not without inspecting the CDB. We agreed to strike it. The next paragraph, dealing with an initiator port receiving Transfer Ready for too much write data, has the same problem and received the same fate.

The group agreed to strike the paragraph about receiving a SCSI Transfer Ready IU requesting zero bytes.

The debate moved on to an initiator or target port receiving a SCSI Transfer Ready IU with an unexpected offset. Kevin Butt reminded the group that IBM entered a letter ballot comment to let the upper layer deal with this condition. Paul Entzel pointed out that ADT already contains text requiring the receiving port to NAK the IU. He will remove it the existing ADT text as part of this proposal.

Kevin Butt asked for consistency between the requirements placed on the application client. We have both “may” and “shall” statements depending on the type of error. Rod Wideman pointed out that the “may” clause is on an ill-formed SCSI Transfer Ready IU while the others are not. Michael Banther backed Kevin in his call for consistency as did Matthew Bondurant. Paul Entzel agreed to change all remaining cases for receipt of a SCSI Transfer Ready IU by the initiator port to permit the aborting of the command but not require it.

Moving on to error conditions for SCSI Data IU’s, a quick consideration of the first paragraph showed that subject is already covered in ADT. Paul Entzel agreed to strike the paragraph.

Consideration of the case of no SCSI Transfer Ready outstanding led to much debate, with Kevin Butt holding out for terminating the command with CHECK CONDITION status. Eventually he won his point.

The cases of a SCSI Data IU with an incorrect offset or more write data than expected raised no objections.

While considering the case of a SCSI Data IU with zero length, Kevin Butt requested that the proposal add in similar text for a SCSI Transfer Ready IU with zero length. Rod Wideman and Paul Suhler voiced support for Kevin’s position. Paul Entzel agreed to add in two paragraphs, one allowing an initiator port to terminate the command and one requiring a target port to send CHECK CONDITION status upon receiving a SCSI Transfer Ready IU with zero length.

Returning to SCSI Data IU's, everyone accepted the proposed text for an IU with zero length.

Kevin Butt noted that the last three paragraphs, though dealing with an initiator port, include a "shall" clause. Michael Banther and Rod Wideman agreed that they should change to "may" clauses in line with our earlier convention. Paul Entzel agreed to make the change.

Kevin Butt objected to the final sentence in each of the last paragraphs. He argued for clarifying the text and eventually won.

Paul Entzel will make the changes agreed and bring in a revised proposal.

b. ADT Guidance on state machines (04-350r0) [Banther].

Michael Banther walked the group through the beginning of the document. It contains eight problems with the existing ADT state machine text. Michael's asking for guidance on each of the eight problems.

For the first problem, the case of conditional sending of information units, Paul Entzel asked Michael Banther if he preferred one solution over the other. Michael replied that he preferred the option (e) which seeks to move the conditional portion of the existing statements to the Current State description and the unconditional portion to the Next State description. The group agreed to explore this option.

Rod Wideman stated a concern about splitting the information about sending an information unit into several different locations. Michael Banther replied that splitting the information this way does have that downside; however the reader of the text can easily discern exactly what each state has to accomplish using this approach. Rod and Michael explored how a reader might gain an overall understanding of the sending of an information unit due to a state transition and concluded that reading the Current State description, the Transition description, and the Next State description provides all of the necessary information.

Paul Entzel raised a concern about the example proposed text stating that a port in N0: Idle state that receives a Port Login IU with ACCEPT set to zero and acceptable parameters may respond with the same parameters and ACCEPT set to one. Rod Wideman pointed out that Paul's concern doesn't directly address the guidance that Michael is seeking. Paul agreed to consider the issue and raise it again later.

Kevin Butt asked about the use of "if" statements in the next state description and Michael explained that, even in the best circumstance, he cannot remove all conditionality from statements in the Next State description about sending information units.

The group reached consensus that Michael should use option (e) in the re-working of the text for sending information units.

Due to lack of time, Michael agreed to defer the remainder of this discussion to the next teleconference.

c. ADT Letter Ballot comment resolution (04-162r1) [Entzel].

The group did not resolve any letter ballot comments due to lack of time.

6. Unscheduled business:

No one raised unscheduled business.

7. Next meeting requirements: Paul Suhler

   The group will hold a teleconference on Monday, 1 November 2004, beginning at 8:00 AM and concluding at 10:00 AM PST. IBM will host the teleconference.

   The group will hold a meeting 8 November 2004 during T10 plenary week in Austin, Texas beginning at 9:00 AM and concluding at 7:00 PM.

8. Review new action items: Michael Banther

   No new action items were assigned.

9. Adjournment: Group

   Rod Wideman made a motion for adjournment. Paul Suhler seconded the motion. The group passed the motion unanimously. Paul Suhler adjourned the group at 9:33 AM PDT.

Attendees:

Name	Organization	E-mail
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