

Draft Minutes
Automation/Drive Interface (ADI) Working Group
Ad Hoc Teleconference
T10/03-341r0
20 October 2003
8:00 AM – 10:00 AM PDT

Conference Call Information:

Hosted by: Certance
Toll Free: 866-828-0531
International: 309-229-0103
Pass code: 6412485

1. Introductions: Group

Paul Suhler called the meeting to order at 8:05 AM PDT. He thanked Certance for hosting the meeting. A table of the attendees appears at the end of these minutes.

2. Approval of the agenda: 03-340r0 Paul Suhler

Paul Suhler discussed the order of the discussion items. Paul Suhler asked Rod Wideman to provide a brief status on ADC comment resolution.

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

3. Approval of previous meeting minutes: Paul Suhler

8-9 September 2003 meeting 03-295r0

22 September 2003 teleconference 03-327r0

Paul Suhler requested comments for the minutes of the 8-9 September 2003 meeting or the 22 September 2003 teleconference, 03-295r0 and 03-327r0 respectively. No one provided comments.

4. Review of action items: Michael Banther

- a. Paul Entzel will write an appendix to ADT to describe an example login. *Carryover*
- b. Paul Suhler will write a proposal to add the Pending Recovery port state. *Closed*
- c. Paul Suhler will provide a proposal to positively acknowledge and discard a Transfer Ready IU received under a variety of conditions: before sending a SCSI Response IU when the target has no more data to send, after sending the SCSI Response IU but before receiving the subsequent acknowledgement, and after both sending the SCSI Response IU and receiving the subsequent acknowledgement. *Closed*
- d. Michael Banther will provide a proposal to define when exchanges open and when they close. *Carryover*, Paul Suhler has incorporated some of this work into 03-319r0.

- e. Susan Gray will provide state diagrams for the Port states (4.3) and the Link Negotiation states (4.4) as a proposal. *Carryover*
- f. Paul Entzel will incorporate the proposals documented in discussion item (a) of 03-327r0 into ADT. *Carryover*
- g. Susan Gray will write a proposal to correct that existing problem with errors that the link level can detect but not correct (see discussion item [a] of 03-327r0). *Closed*
- h. Paul Entzel will revise 03-322 based on discussion item (b) of 03-327r0. *Closed*
- i. Paul Entzel will add a definition for the Bridging Manager in ADT. *Carryover*
- j. Kevin Butt will bring in a proposal to write the example containing figure 3 in ADT without the figure. *Carryover*

5. Discussion items:

- a. ADC comment resolution status Rod Wideman

Rod Wideman gave a brief update. He has gone through the comment document provided by John Lohmeyer. In the original document posted on the web site, some of the comments from IBM have been truncated. Rod has received the full IBM comments from John and George Penokie.

Rod hopes to collate all comments into a spreadsheet before the Austin meeting. He does not expect to need time at the Austin meeting for comment resolution.

- b. Transport protocol service extensions for ADT 03-322r1 Paul Entzel

Paul Entzel stated his expectation of little controversy over the changes he has made but perhaps more discussion on the things he did not include.

Paul reviewed the first missing item and his justification for leaving it out: he believes that the existing text covers the concern, i.e., 'An application client should invoke the Send Data-Out transport protocol service after receiving the Data-Out Delivered indication if there is more data to be sent to the device server.'

Kevin Butt asked about using 'should' statements for the application client. Paul Entzel stated his willingness to convert these to 'shall' clauses, but he pointed out that some people do not like the use of 'shall' statements on application clients. Paul Suhler looked up precedence in SAM and found 'shall' clauses on application clients. All agreed to changing the 'should' clauses to 'shall'.

Paul Entzel reviewed the second missing item: the request for a picture showing the sequencing of commands. He stated that he and Susan Gray could not find a diagram of a sequence in SAM. Michael Banther acknowledged that he initially made the request, and he described what he wanted. Susan Gray stated that she will provide the diagrams now that she knows what is desired. Rod pointed out that 02-479 provides a guide for state machine diagrams.

Paul Entzel asked if anyone had other comments.

Rod Wideman pointed out the use of 'removable medium device' in the 2nd paragraph of 4.9. He requested a change to 'data transfer device'.

Rod also asked about describing the bridging manager as an application client. Paul Entzel already has an action item to provide a definition.

Paul Suhler asked about the use of an acknowledgement of a SCSI Transfer Ready IU as the trigger for the Data-In Received confirmation in the last row of Table 26. He stated that receipt of a SCSI Data IU might be better. Paul Entzel proposed changing the text to use the acknowledgement of the last SCSI Data IU associated with the Receive Data-In SCSI Transfer Ready IU.

Michael Banther pointed out the need for similar 'last data' text for the Data-Out Delivered indication. Much discussion followed about the original proposal, 03-286r1, the content of Table 26, and the need or lack thereof for a diagram.

Kevin Butt asked, 'how does the transport report an abort to the application client?' In SAS an abort comes up as a confirmation with a non-good status. Paul Entzel stated that SAM should cover this ground.

Kevin compared the ADT table with a similar table in SAS and found differences that concerned him. He believes that the Receive Data-In should be a request and the Data-Out Delivered should be a confirmation. Paul Entzel agreed to make these changes.

Kevin pointed out that 03-286r1 contains a similar problem. Paul Entzel stated that, since 03-286r1 has been incorporated, we need an additional proposal to make any changes there.

Michael Banther asked about the text in 8.2.11. Does it apply to bi-directional commands? Paul Entzel stated that doesn't; rather the text is a cut-and-paste error. We discussed including text covering bi-directional commands and agreed to postpone any new text covering them until ADT-2.

We discussed placing ADT into letter ballot phase. We agreed that we should seek to have the document ready on or near the November meeting. However Paul Entzel's actual request to John Lohmeyer may not occur until January to avoid the loss of two or three weeks of review time due to the November and December holidays.

Paul Entzel made a motion for incorporation of 03-322r1 as revised into ADT. Kevin Butt seconded the motion. In the absence of objections or abstentions, the group passed the motion unanimously.

- c. ADT Pending Recovery Port State 03-318r0 Paul Suhler

Paul Suhler described the problem and his proposal to solve it.

Susan Gray asked whether every NAK causes the transition into the new state. Paul Suhler stated that the state applies to every NAK. Susan asked, how we return to state P2: Active. Michael Banther pointed out that 4.7.2.3 list item (c) specifies the return to state P2. Susan pointed out that this didn't cover NAK's that do not generate an Initiate Recovery IU and asked about those. Should they cause a transition to P3 and, if so, how does the port get back to P2? Paul Entzel agreed that a problem appears here. He asked if Susan's proposal, 03-355r0, covers this ground.

We agreed to postpone further discussion until a review of 03-355r0 – see discussion item (d).

After the review of 03-355r0, Susan Gray asked if we want to provide a way to exit the new P3 state without receiving an Initiate Recovery IU.

Paul Suhler will revise 03-318 in conjunction with Susan Gray's revision of 03-355. The revision will include a new column in Table 15 that indicates which error codes expect a retry.

- d. ADT Section 4.7.1.3 03-355r0 Susan Gray

Susan Gray described the problem and her proposed solution. Susan stated her concern that she cannot discover all of the errors that a port could retry. The group broadly agreed that we need an explicit statement of the errors that must be retried. Susan proposed that we split Table 15 not into upper and lower level errors but rather into recoverable and non-recoverable errors.

We debated how to modify Table 15, NAK Frame Status Code Values. Paul Entzel suggested narrowing the field by one bit and using the high-order bit to indicate that recovery is expected. Hence bit 7 set implies that the sending port will enter the new P3: Pending Recovery – see discussion item (c). Paul Entzel stated that all of the existing lower-level errors (00h through 6Fh) should expect recovery except for code 08h. Paul Suhler and Susan Gray agreed.

Susan Gray will revise 03-355 in conjunction with Paul Suhler's revision to 03-318. The revision will include changes to 4.7.1.3 to describe what a port does for an error that can be retried and what a port does for an error that cannot be retried.

- e. ADT Transfer Ready IU / Response IU Race Condition 03-319r0 Paul Suhler

Paul Suhler described his proposal.

Paul Entzel asked if we wanted to respond with a NAK rather than an ACK. Paul Suhler replied that he wanted to avoid entering recovery, a point that Susan Gray supported. Michael Banther pointed out that we now had non-recoverable NAK's; hence using one of them is an option. Paul Entzel suggested using an Invalid Exchange ID error code. Paul Suhler checked and this error code doesn't currently exist.

Paul Suhler read through the proposed text for the new sub-clause 6.5.9. Paul Entzel raised an objection to the text that starts an exchange. The current text starts a new exchange on every Port Login IU with Accept equal zero. Susan Gray suggested that if the port is not already in an exchange, than receipt of a Port Login IU with Accept equal zero will start a new exchange.

Kevin Butt questioned the Port Logout, Pause, and NOP IU text. Michael Banther pointed out that these exchanges should last through the associated acknowledgement. Paul Suhler agreed.

Paul Suhler read through the proposed text for the new sub-clause 7.1.6. Paul Entzel raised a concern about the task management functions that may optionally be implemented. They agreed that some text is missing.

We agreed that we need a definition of I_T Nexus Loss.

Paul Suhler will revise 03-319 based on the comments received.

6. Unscheduled business:

- a. Revision of ADT Paul Entzel

Paul Suhler asked if Paul Entzel has enough change to issue a new revision of ADT. Paul Entzel agreed to provide a revision for the November T10 meeting in Austin.

7. Next meeting requirements:

Paul Suhler

The group will hold a meeting 3-4 November 2003 during T10 plenary week in Austin, TX. The meeting will begin on the 3rd at 9:00 AM CST and conclude at 7:00 PM CST. The meeting time on the 4th will occupy the morning, starting at 9:00 AM CST and concluding at 11:00 AM CST.

8. Review new action items:

Michael Banther

- a. Susan Gray will propose diagrams showing specific instances of the new transport protocol service requests in the form of SAM3r09 figures 26, 28, and 30.
- b. Paul Suhler will revise 03-318r0 per discussion item (c).
- c. Susan Gray will revise 03-355r0 per discussion item (d).
- d. Paul Suhler will revise 03-319r0 per discussion item (e).
- e. Kevin Butt will propose a definition of I_T Nexus Loss.

9. Adjournment:

Group

Susan Gray made a motion for adjournment. Kevin Butt seconded the motion. The group passed the motion unanimously. Paul Suhler adjourned the group at 10:03 AM PDT.

Attendees:

Name	Organization	E-mail
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