Draft Minutes
Automation/Drive Interface (ADI) Working Group
Ad Hoc Meeting
T10/08-223r0
5 May 2008
1:55 pm – 09:58am PDT

1 Introductions:

Paul Suhler called the meeting to order at 1:55 PM PDT. He thanked Nvidia for hosting the meeting.

2 Call for secretary [Suhler]:

Paul Suhler noted that ADI remains without a permanent secretary. He asked if anyone wished to volunteer to fill this role. No one volunteered, so Paul encouraged participants to consider taking up the role. Curtis Ballard agreed to serve as secretary for this meeting.

3 Approval of the agenda:

Paul Suhler reviewed the agenda with the group.

Paul Suhler proposed adding a new action item for new task management functions.

Item 9.1 was deferred

Items 10.1 and 10.2 were moved ahead of 9.2

Kevin Butt made a motion for acceptance of the agenda as modified. Geoffrey Barton seconded the motion. The group approved the motion unanimously.

4 Attendance and Membership:

Paul Suhler discussed the attendance, membership, and voting rules for this meeting.

The listing below captures the attendance at this meeting:

Name	S	Organization
Mr. Curtis Ballard	A	Hewlett Packard Co.
Mr. Kevin Butt	P	IBM Corp.
Mr. Robert Payne	P	Iomega Corp.
Mr. Geoffrey Barton	V	Overland Storage
Mr. Paul Stone	A	Quantum Corp.
Dr. Paul Suhler	P	Quantum Corp.
Mr. Rod Wideman	A	Quantum Corp.
Mr. Georg Boasson	V	Tandberg Storage

8 People Present

Status Key: P - Principal
A - Alternate

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AV   -  Advisory Member
E    -  Emeritus
L    -  Liaison
V    -  Visitor
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5 INCITS Patent Policy:

Paul Suhler presented the INCITS patent policy slides. Paul Suhler also reviewed the rules around avoidance of anti-trust issues.

6 Approval of previous meeting minutes:

10 March 2008 meeting	08-151r1
16 April 2008, teleconference	08-196r1

Paul Suhler requested comments for the minutes of the 10 March 2008 meeting, 08-151r1 and the 16 April teleconference 08-196r1. No one provided comments or corrections. Rod Wideman moved the meetings minutes as revised be accepted, Kevin Butt seconded. The motion was approved unanimously.

7 Review of action items:

08-006 Rod Wideman will revise 08-021r0 per Old Business item 8.3 of 08-104r0. *Carryover*

08-007 Paul Stone to revise ADT-2r05 to change the receiver error state machine names as per business item 9.4. *Complete* ADT-2r05b

08-009 Paul Stone to incorporate 07-438r1 into ADT-2. *Complete* ADT-2r05b

08-010 Paul Stone to modify ADC-3 per new business item 9.1 in 08-196r0 to correct the use of RELATIVE TARGET PORT field to be PRIMARY PORT INDEX field. *Complete ADC3r00b*

9 Old business:

9.1 ADC-3 Automation Device Serial Number subpage (08-021r0) [Wideman]

This item was deferred at the author's request.

9.2 ADT-2: Internet ADT (iADT) (07-469r3) [Suhler]

Paul Suhler gave an update on where he felt we were with iADT

- ACK timeout may still be useful for invalid frame type
- Is a TCP connection equivalent to an I_T nexus
  - No because TCP is bi-directional and each direction is a different I_T nexus so you must include at least the Xorigin
- Can iADT run over UDP
  - Rod Wideman stated that he felt iADT could be specified without reference to TCP or UDP but rather just an Ethernet connection. Kevin Butt stated that he felt that ADT couldn't be run directly over Ethernet and changes specific to TCP or UDP would be required. Rod felt that the reuse would be better if we didn't make transport specific changes. The group discussed whether ADT should be run over TCP or whether ADT should be modified to take advantage of the TCP recovery. Rod stated that he felt ADT could be run as it was on top of

TCP, Kevin stated that he felt it would required significant changes, Curtis Ballard reported that HP had an intern write a test utility running ADT over an Ethernet to serial converter and it was possible to run ADT on TCP but that timeouts were a problem. Paul Suhler reported that UDP did not guarantee in order delivery of packets. The group discussed whether out of order delivery would be a problem and agreed that it would if the ACK offset was greater than 1.

- Standardized connector with all signals
  - Kevin Butt reported that IBM's official stance was that having a single standardized connector with all signals present as part of iADT was not a good thing.
  - Curtis Ballard reported that HP wanted the standard to indicate which connections were provided but did not require a standardized connector with specific locations for those connections.
  - Paul Suhler agreed to drop the section specifying a standard connector.
  - Paul asked whether reset, LED_{active}, and LED_{signal}, should be required or optional. The group agreed with leaving those signals optional.

Paul resumed review of the proposal with a review of the technical issues not addressed. Nobody objected with leaving those issues not addressed.

The group discussed whether a connection loss should map to an I_T nexus loss. Kevin Butt indicated that it sounded like it should. Curtis Ballard reported that HP's position was that it should and that keepalives should be used to detect a connection loss. Paul Suhler asked Curtis to send a pointer to documentation on keepalives.

The group discussed whether the ACK timeout was required. Curtis said that he felt it was required as a packet could fail to be acknowledged if the device at the other end of the connection had gone away. Paul brought up rfc793 for TCP and the group reviewed the TCP open call which stated that the default timeout (in 1981) was 5 minutes. Rod Wideman pointed out that a 5 minute timeout was much larger than the timeouts we need in iADT.

Curtis Ballard pointed out that the open command indicated the port to open and indicated that his contact had told him that when a long lived Ethernet connection was opened that it needed moved to another port to free up the listener port. Robert Payne said that an application he had worked on in the past had that behavior and moved the connection to another port. Paul Suhler indicated he would look into the question.

Paul reviewed the send service request with the working group. Paul indicated that the error responses copied from TCP may not all be necessary.

Paul reviewed the receive service request with the working group. Paul stated that it was somewhat ambiguous if the receive should report the number of bytes received. Paul brought up the rfc and found that byte count is specified and that the proposal needed modified to add that.

The close service request was reviewed without comment.

Paul reviewed the proposed service confirmations.

Paul introduced the TCP connections requirements where he proposed that auto-negotiation be required and indicated that was in response to an agreement in an earlier meeting. The

working group agreed. Curtis Ballard commented that the group had also asked whether we wanted to specify whether the port should be capable of detecting crossover cables. Paul said he would look into the proper naming for that. Kevin Butt indicated that we needed to review what was required to implement that function and determine if it is appropriate for a drive.

Paul asked for input on reestablishing connections on a connection close. Paul recommended that if a connection is closed we should have the DTD device responsible for reestablishing the connection. Rod Wideman said that would require the library to be a target but libraries not doing bridging may not support target functionality.

Rod Wideman brought up the point that it was difficult discussing these service requests and service responses without any point of reference. He indicated that he felt that we perform the same functions with the RS422 link but we don't have the service requests and responses defined. Rod indicated that we needed to define those for the RS422 link so that we had a baseline for mapping to TCP. Paul Suhler said that he would take a look at whether we could define some service requests and responses for the existing RS422 link.

9.3 ADI: Features for ADC-3 and ADT-3 (08-147r0) [Suhler]

The working group started to discuss this item then was notified that the room needed to be reconfigured and we needed to wrap up so discussion was terminated.

10 New Business

10.1 iADT Service Discovery using UPnP (08-198r0) [Suhler]

Paul Suhler gave a quick overview of his proposal for UPnP discovery. Curtis Ballard indicated that his team has requested that if we define this further that they would like to see several specific fields from the inquiry data copied into the response data. Paul Suhler requested that Curtis send him a list of values they would like to see for consideration in a future revision.

10.2 ADC-3 Host Reported Error Details (08-195r1) [Ballard]

The group discussed whether the ordering of the log page requirements was correct and recommended that the Tape Diagnostic Data log page be made optional with a footnote that it is mandatory if the TDECC bit is supported.

Rod Wideman pointed out that this proposal consumed one of the 2 remaining bits leaving no more room for further expansion without expanding into another page. The group discussed whether there were methods to return more data if there is a future need for another bit. The group determined that there were suitable methods for providing more data in the future.

Curtis Ballard moved for incorporation of 08-195r1 as modified into ADC-3, Kevin Butt seconded. The motion passed unanimously

10.3 ADC-3 Clarifications for automation encryption control (08-200r0) [Ballard]

Curtis Ballard presented 08-200r0 which contains several minor clarifications to automation encryption control.

The first modification was an attempt to clarify the use of the PARAMETERS REQUEST SEQUENCE IDENTIFIER when only a key management error is set. New text was proposed to require that the field be ignored if the KME bit is set to one and all other bits are set to zero.

The group pointed out that this case was very similar to the previously defined case in the existing text. The conclusion was to strike the existing text and replace it with the new text.

The second proposed was to provide an e.g. statement on the completion page "No Results" result code to indicate that this value should be reported when the library is clearing an abort. The group consensus was to add a statement "(e.g., the automation application client has set the CABT bit to one)".

The next proposed change was to correct a Check Condition value that had been set incorrectly to invalid field in CDB when the field referenced was in the parameter list. The group agreed that the error code was incorrect.

The final proposal was adding guidance on where to set the field pointer when a policy change is rejected. Rod Wideman pointed out that he was uncomfortable with the restrictions on changing a policy type and may bring a proposal to change that. Rod also pointed out that the following paragraph stated that parameters should be cleared when they had to be cleared before you could get to this point so that statement was unnecessary. Curtis agreed to bring that paragraph into his proposal and strike the words "then the DT device shall clear the set of data encryption parameters associated with this I_T nexus, and".

Curtis moved for incorporation of 08-200r0 as modified into ADC-3 , Kevin Butt seconded. The motion passed unanimously.

10.4 New Task Management Functions for ADT-2

Paul Suhler presented a proposal introducing Query Task Set and Query Unit Attention task management functions into ADT-2. The working group noted that Query Unit Attention has been renamed to Query Asynchronous Event. After some discussion the working group concluded that neither task management function was useful with the currently defined transport but that Query Task Set may be with iADT and should be reconsidered when that proposal is more complete. Paul agreed to keep the proposal open for future consideration.

11 Next meeting requirements:

Subject to approval by the T10 Plenary, the group will hold a meeting on 5 May 2008 during T10 plenary week in Anchorage, Alaska beginning when the SMC-3 working group adjourns and concluding at 6:30 PM PDT.

The group will hold two teleconferences 4 June 2008 at 8:00 AM PDT until 10 AM PDT and 18 June 2008 at 8:00 AM PDT until 10 AM PDT.

12 Review new action items:

08-011 Curtis Ballard to revise and post 08-195r0 per new business item 10.2 of 08-223r0.

08-012 Paul Stone to incorporate 08-195r1 into ADC-3

08-013 Curtis Ballard to revise and post 08-200r0 per new business item 10.3 of 08-223r0

08-014 Paul Stone to incorporate 08-200r1 into ADC-3

08-015 Paul Suhler to revise and post 07-469r3 per old business item 9.2 of 08-223r0

13 Adjournment:

Rod Wideman made a motion for adjournment. Curtis Ballard seconded the motion. The group passed the motion unanimously. Paul Suhler adjourned the group at 6:36 PM PDT.