Draft Minutes
Automation/Drive Interface (ADI) Working Group
November 5, 2002 – Huntington Beach, CA
T10/02-411r0
9:07am – 6:15pm PST

Call to Order:

Paul Suhler called the meeting to order at 9:07am. Attendees are listed at the end of these minutes. Paul Suhler thanked QLogic for hosting the meeting. The group went around the room and introduced themselves.

No one volunteered to act as permanent secretary. Rod Wideman volunteered to be acting secretary for this meeting.

Approval of Agenda:

The agenda was modified to adjust to those in attendance as follows:

1.	ADP into ADT		All
2.	New editors		All
3.	ADC VHF log page	02-xxx	Rod Wideman
4.	ADC sequence diagram	02-xxx	Rod Wideman
5.	ADC recovery procedures	02-xxx	Lee Jesionowski
6.	Proposed frame format for ADT	02-329r1	Paul Entzel
7.	Decision on start of frame characters		Paul Entzel
8.	Port Disable		Paul Suhler
9.	Connector selection approach		All
10.	Standardizing connectors		Paul Suhler
11.	Changes to schedule		All

Approval of Previous Meeting Minutes:

1. 09/10/2002 meeting minutes   02-328r0

2. 10/03/2002 conference call minutes   02-401r0

The meeting minutes were approved.

Action Item Review:

1. Find a permanent secretary for this committee. *Carryover*
2. Paul Entzel will post a message to the reflector to request start of frame characters. *Carryover*
3. Bob Griswold to include existing proposals and updates noted in these minutes in ADC document by one week before next meeting. *Carryover*
4. Michael Banther to produce a proposal for device server interaction section in ADC document. *Carryover*
5. Paul Suhler to update section 4.2.1 of the ADC document. *Carryover*
6. Each of us to investigate possibility of participation in joint development of an emulation/test tool. *Carryover*

7. Rod Wideman to create proposal to update ADC VHF log page, clean up Status Valid meaning, add "leaving state" bit per discussion of 02-257r1. *Carryover*
8. Rod Wideman to create proposal to include sequence diagram in ADC for state transition table, verify adequate definition of terms. *Carryover*
9. Lee Jesionowski to explore standardization of recommended recovery procedures (load/unload), possibly associate with state transitions. *Closed*
10. Rod Wideman to create possible VPD page that describes supported states and transitions. *Carryover*
11. Everyone to consider providing integration or recovery guides for their drive to Lee Jesionowski to facilitate identifying standard recovery procedures. *Closed*
12. Paul Suhler to report on how to specify an existing vendor's connector in a standard. *Closed*
13. Everyone think about connector selection issue (single connector, multiple connectors, "superset" connector) and derive position statement. *Closed*
14. Michael Banther to add Sense(target) back to table in 02-358r1. *Carryover*
15. Paul Entzel to incorporate suggested changes by Michael Banther (T10/02-351r1) and Paul Suhler (9/30/2002 e-mail) into a new revision of 02-253 and submit to Bob Griswold for inclusion in ADC. *Closed; changes made directly by editor.*
16. Kevin Butt to create a proposal against ADC for FC descriptor for ADC device specific mode page (T10/02-315r0). *Carryover*

Agenda Items:

1. ADP into ADT   All

Discussed combining ADP and ADT into single spec. Need to reflect change in project proposals by canceling one, updating the other. Need to provide to T10 at least 2 weeks ahead of next plenary, need passage by $2/3^{rd}$ vote. Downside of combining is loss of flexibility to run ADP across different interface, but if anything were to change, one document would change anyway.

Paul Suhler moved that we modify the ADT project proposal to include the scope of the original ADP project proposal and cancel the ADP project. Kevin Butt seconded.

No discussion, motion approved by acclamation.

2. New Editors   All

Paul Suhler moved that Rod Wideman assume duties of editor of ADC and that Paul Entzel assume duties of editor of ADT. Lee Jesionowski seconded. Passed by acclamation.

On behalf of the group, Paul Suhler expressed thanks to Bob Griswold for his efforts in editorship.

3. ADC VHF log page   02-xxx   Rod Wideman

Draft version of the ADC VHF change proposal was presented. Suggestion made to break out bytes 8-11 as separate structure with name to facilitate reference from ADT. Will give each byte a name in addition to names for the individual fields within the bytes. MAM ACCESSIBLE will move to byte 8.

STATUS VALID will be removed since can rely on DRIVE INITIALIZED and TapeAlert flags to indicate issues. Values returned will reflect last known state. Reference usage sequence to include looking at DRIVE INITIALIZED first, and when stable look at TapeAlert flag indication. If set, look at TapeAlert flags before processing other VHF fields.

Will add field to indicate IN TRANSITION to apply to other state bits. Will change TAPEALERT FLAGS CHANGED to TAPEALERT FLAGS SET. Will add a RECOVERY REQUESTED field to byte 11. Will strike last sentence in COMPRESS description. References to "frame" will be replaced by "page" instead.

Discussed adding a UNIT ATTENTION PENDING field to last byte, but consensus was information was adequately available through other means, and that any pending Unit Attentions could just be discarded by devices not wanting them.

4. ADC sequence diagram   02-xxx   Rod Wideman

Discussed the benefit of adding transition bit column to table and the need to add appropriate narrative to table for use within ADC. Will do both.

5. ADC recovery procedures   02-xxx   Lee Jesionowski

Discussed defining a log page that will list a structure of recovery actions suggested by the drive. The contents are to be based on standard enumerated actions defined by ADI group. Order of actions set by the drive. Allows the drive to use either dynamic or static approaches (or none) as desired.

Lee will generate a list of possible actions that will be included in his proposal. We will also add a recovery requested field to the VHF structure.

6. Proposed frame format for ADT   02-329r1   Paul Entzel

Discussed again the possibility of combining FRAME NUMBER and EXCHANGE ID into a single byte, with a nybble each. Reviewed one more time that the interface is point-to-point, and that a different protocol layer would need to be proposed for anything else.

Conclusion was to make current X_ORIGIN bit reserved, move it to bit 7 of byte 1. Bits 4-6 are EXCHANGE_ID, bits 0-2 are FRAME NUMBER, and bit 3 is reserved. (All are in byte 1).

Reviewed the Error Recovery section. Clarify that frame transmission does not need to terminate upon receipt of a Port Login or Logout frame (it can if it wants to but is not required). Current frame transmission can complete before acknowledging these frames.

Clarify "out of order" frames to be "non-sequential" instead.

There was much discussion on scenarios involving missing frame numbers, out of sync frame numbers. Wording to be reviewed to ensure accounted for. ACKs without Good status must be sent for the frame number not received. Ladder diagrams needed to aid clarification.

Timeout value calculation needs period (time) instead of rate (frequency).

Discussed ways to get out of receiver side loop that is waiting to complete recovery. Conclusion was it seemed to be covered by prior text.

Discussed ACK codes further. Proposal to create NAK link service with one-byte payload for status and have ACK link service frame have zero length payload.

Clarification needed on ACK (to be NAK) status code meanings.

Discussed whether we are making implementation recommendations for checking frames as they arrive (payload size, checksum, EOF, etc.) Check all characteristics, or some? Frames can be NAKed at any point during receipt, no particular implementations recommended.

Returned frame number must be expected frame number for error scenarios. Need to create status for discarded frames (that indicate awaiting recovery).

Discussed AER frames. Support is optional for drives. Question as to wether we should add option to just return the complete polling frame directly instead of just an indication. Decision was to just use the VHF frame as is, both to communicate a reporting mask or filter back to the drive, as well as the response or frame to send with AER. One type used for all purposes.

No other polling frames will be defined at this time. High Frequency and Control frame contents to be retrieved via encapsulated SCSI only.

7. Decision on start of frame characters   Paul Entzel

Paul will post message to reflector asking what characters perferred, which to avoid.

8. Port Disable   Paul Suhler

Paul reviewed his previous e-mail from the reflector to discuss the options for when a previously enabled port is now disabled. Consensus is that this is not a "pause" such that activity outstanding on the port being disabled should be saved. Disabling is effectively an abort, or port reset.

9. Connector selection approach   All

Reviewed HP connector and pin allocation. Discussed Attention signal in 02-358r1 regarding only using it to indicate when drive wants to leave pause, or that we need it at all. Deferred until Michael Banther is available to discuss and Lee Jesionowski is able to research need for wrap. Need to reach agreement on signals before picking final connector.

10. Standardizing connectors   Paul Suhler

The non-preferred way (but simplest) is to specify a manufacturer and part number. The preferred way is to reference a standards document. SFF might be a possibility. Paul Suhler is continuing to investigate.

11. Changes to schedule   All

Original target date was November 2002 (this meeting). Need letter ballot, resolve comments, approval of resolution by T10, produce draft that reflects comment resolution document. Question as to what the international requirements are. Plenary vote is needed to approve to forward to letter ballot.

Estimate time to complete initial draft as six months, ready for vote two weeks prior to May plenary. Estimate time from letter ballot to start of comment resolution as two months. Estimate time from start of comment resolution to resolution complete as four months.

Consensus is new target date for ADC and ADT initial public review is November 2003.

Unscheduled Business:

Paul Suhler clarified that WWNs should be Node_Name and Port_Name (per e-mail he sent). These terms are defined in FC-FS.

General discussion took place regarding emulation/test tool. Open source is attractive, but concerns over IP ownership (code could be used by vendors on products). Consensus was to continue investigating, as interest still exists. Bob Griswold will contact SNIA BWG.

Brief discussion of anticipating request to add time sync capability. Will wait for actual request or proposal.

Brief discussion as to which document will be the home of surrogate SCSI. May need mention of it in model section of ADC, since enabling it takes place via ADC. Will resolve at future date. Discussion as to where task management, true initiator knowledge remains – within drive or library. How much does drive pass along to library?

Next Meeting Requirements:

Propose conference call as next meeting on Wednesday, November 20th, 8:30am PST

We will require the usual 9:00am to 5:00pm slot at the January T10 Plenary Week.

Carryover Action Items:

1. Find a permanent secretary for this committee.
2. Paul Entzel will post a message to the reflector to request start of frame characters.
3. Bob Griswold to include existing proposals and updates noted in these minutes in ADC document by one week before next meeting.
4. Michael Banther to produce a proposal for device server interaction section in ADC document.
5. Paul Suhler to update section 4.2.1 of the ADC document.
6. Each of us to investigate possibility of participation in joint development of an emulation/test tool.
7. Rod Wideman to create proposal to update ADC VHF log page, clean up Status Valid meaning, add "leaving state" bit per discussion of 02-257r1.
8. Rod Wideman to create proposal to include sequence diagram in ADC for state transition table, verify adequate definition of terms.
9. Rod Wideman to create possible VPD page that describes supported states and transitions.
10. Michael Banther to add Sense(target) back to table in 02-358r1.
11. Kevin Butt to create a proposal against ADC for FC descriptor for ADC device specific mode page (T10/02-315r0).

New Action Items:

1. Bob Griswold to talk with SNIA Backup Working Group regarding process of developing an open test/emulation tool for ADI use.
2. Bob Griswold to modify the ADT proposal to include scope of ADP and cancel ADP project by two weeks prior to next T10 plenary.
3. Lee Jesionowski to create a proposal for method to convey Interface Status changed.
4. Bob Griswold to send Rod Wideman ADC source, send Paul Entzel ADP and ADT source.
5. Paul Entzel to create 02-329r2 to reflect changes discussed in this meeting and make available prior to next conference call.
6. Paul Suhler to write text for ADC to explain what happens when a port is disabled that was previously enabled.
7. Paul Suhler to discuss the ADC and ADT schedules with John Lohmeyer and send e-mail with the revised target date for initial public review for both standards.
8. Lee Jesionowski to work within IBM to find possible resolution for signal conflict on connector regarding wrap plug.
9. Paul Suhler to post message to reflector for conference call meeting.

Adjournment:

The meeting was adjourned at 6:15pm PST

Attendees:

Name	Organization	email
Rod Wideman	ADIC	rod.wideman@adic.com
Bob Griswold	Crossroads	rgriswold@crossroads.com
Kevin Butt	IBM	kdbutt@us.ibm.com
Lee Jesionowski	IBM	ljesion@us.ibm.com
Paul Entzel	Quantum	paul.entzel@quantum.com
Alfred Missbrenner	Quantum	alfred.missbrenner@quantum.com
Steve Hellwege	Quantum	steve.hellwege@quantum.com
Paul Suhler	Seagate Technology	paul.a.suhler@seagate.com
Tuong Vu	Sony	tuong.vu@am.sony.com