

Draft Minutes  
Automation/Drive Interface (ADI) Working Group  
Ad Hoc Meeting  
T10/06-228r0  
8 May 2006  
9:00 AM – 1:00 PM PDT  
San Jose, California

**1 Introductions:**

Paul Suhler called the meeting to order at 9:02 AM PDT. He thanked Nvidia for hosting the meeting. A table of the attendees appears at the end of these minutes.

**2 Approval of the agenda:**

Paul Suhler reviewed the order of the discussion items. Paul Suhler added a discussion of an ADT-2 typographical error. Michael Banther requested addition of [06-235r0](#). Noud Snelder requested addition of [06-226r0](#).

Kevin Butt made a motion for acceptance of the agenda as modified. Rod Wideman seconded the motion. In the absence of objections or abstentions, the group approved the modified agenda unanimously.

**3 Approval of previous meeting minutes:**

6 March 2006 meeting [06-118r0](#)

Paul Suhler requested corrections for the minutes of the 6 March 2006 meeting, [06-118r0](#). No one provided corrections.

Michael Banther made a motion for acceptance of the minutes as written. Rod Wideman seconded the motion. In the absence of objections or abstentions, the group approved the minutes unanimously.

**4 Review of action items:**

- 06-001 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.*
- 06-006 Michael Banther will revise [05-265r0](#) per discussion item 5.8 of [05-408r1](#) and discussion item 5.5 of [06-031r1](#). *Carryover.*
- 06-013 Michael Banther will revise [05-377r0](#) per comments received in discussion item 5.4. of [06-031r1](#). *Carryover.*
- 06-017 Rod Wideman will bring in a proposal to sort out the two bridging models per discussion item 5.1 of [06-118r0](#) including addressing Paul Entzel's observation about reservations. *Carryover.*

- 06-018 Michael Banther will revise [05-310r3](#) per discussion item 5.1 of [06-118r0](#). *Closed*, [05-310r4](#).
- 06-019 Paul Entzel will incorporate [05-310r3](#) as revised into ADC-2. *Closed*.
- 06-020 Michael Banther will bring in a proposal to clarify the conditions that set the INXTN bit to zero per discussion item 5.5 of [06-118r0](#). *Closed*, [06-218r0](#).
- 06-021 Kevin Butt will revise [06-047r0](#) per discussion item 5.6 of [06-118r0](#). *Closed*.
- 06-022 Paul Entzel will incorporate [06-047r0](#) as revised into ADC-2. *Closed*.
- 06-023 Paul Entzel will incorporate alternative (a) of [06-089r0](#) into ADC-2. *Closed*.
- 06-024 Paul Suhler will revise [06-061r0](#) per discussion item 5.7 of [06-118r0](#). *Closed*, [06-061r1](#).

## 5 Discussion items:

### 5.1 **ADC-2 Working List for ISV feedback (SMC/SSC/ADC/SPC) ([05-315r2](#)) [Butt]**

At the author's request, the group deferred discussion of this proposal until July, 2006.

### 5.2 **ADT-2 Negotiable Time-Outs ([05-377r0](#)) [Banther]**

At the author's request, the group deferred discussion of this proposal until July, 2006.

### 5.3 **ADT-2 Smaller Connector ([05-265r0](#)) [Banther]**

At the author's request, the group deferred discussion of this proposal until July, 2006.

### 5.4 **ADC-2 Model for Devices with No ADT Ports ([06-061r0](#)) [Suhler]**

Paul Suhler walked the group through the revised proposal.

Various individuals provided comments of a largely editorial nature.

The group also debated the architectural impact on the existing text of this proposal, in particular whether the existing text in 4.2.2 that describes the relationship between ports and logical units. Eventually the group settled on some modified text.

Kevin Butt asked if Paul Suhler had performed a global search and replace on the phrase 'ADT port.' Rod Wideman noted that several instances of 'ADT port' exist in the current text and will need modification to 'automation port.'

After some discussion, the group agreed to modify the existing figure 3 to show the optional ADT/automation ports instead of introducing a new figure showing devices without automation ports.

We moved on to a discussion of the phrase 'automation port.' Eventually Paul Suhler decided to change the name to 'ADI port.'

Paul Suhler will bring back a revision based on comments received.

### 5.5 **ADI ADC-2 Target Device Serial Number subpage ([05-155r4](#)) [Widemen]**

Rod Wideman explained why this, previously approved, proposal was back for discussion. Discussion in the SSC-3 working group has caused normative changes, specifically in the addition of a sentence in 6.3.2, Manufacturer-assigned serial number VPD page. The

sentence mandates the use of the product serial number when building the T10 vendor ID descriptor.

Paul Entzel asked if Rod Wideman really wants to force both the RMC and ADC device servers to report the same T10 vendor ID VPD descriptor. After much debate we agreed that a problem exists. SPC-x recommends that the device server build the T10 vendor ID VPD descriptor using the serial number from VPD page 80h. The approved revision of 05-155 requires the ADC device server to alter the value of the serial number in VPD page 80h in both the RMC and ADC device servers and to make them the same value if it processes the Target Device Serial Number sub-page.

To solve this problem, the group debated the addition of a new sub-clause in 6.3 that places additional restrictions on the T10 vendor ID descriptor reported by an ADC device server. Led by Rod Wideman, the group crafted some proposed text.

Rod Wideman made a motion for incorporation of [05-155r4](#) as revised into ADC-2. Kevin Butt seconded the motion. In the absence of objections or abstentions, the motion passed unanimously.

#### **5.6 *ADC-2: Reporting Microcode download in progress thru DT Activity and other fixes (06-180r0) [Tudosa, Hernandez and Marks]***

Kevin Marks introduced the proposal to the group.

Kevin Butt pointed out that, during the discussion of his previous proposal [06-047r0](#), the group decided that sufficient information exists to indicate that a firmware upgrade tape has been loaded. Kevin Marks replied that he's interested in having a device activity value that covers firmware upgrades by any means, whether using a tape or not.

The proposal also includes the addition of a reason code to the ADT Port Logout IU to allow an Automation ADI port to know when a DT Device ADI port has shut down the link due to a firmware upgrade.

Kevin Marks described changes to the SAS Port Status page and the SAS descriptor parameter. Paul Entzel objected to a conflict between the proposed text and the existing text regarding the PORT IDENTIFIER field when the MPI field equals 00h. Eventually, Kevin agreed to Paul's change.

Noud Snelder questioned the benefit of adding a new DT Device Activity value for firmware upgrade.

Kevin Marks made a motion for incorporation of [06-180r0](#) as revised into ADC-2 and ADT-2. Paul Entzel seconded the motion. In the absence of objections or abstentions, the motion passed unanimously.

#### **5.7 *ADC-2: Device Statistics log page parameter updates (06-183r0) [Marks]***

Kevin Marks walked the group through the proposal. He asked if ADC-2 could reference SSC-3 log pages. The group gave him guidance to reference the definition of the log page in SSC-3 and to remove sub-clause 6.1.5.

Kevin Marks will revise the proposal based on comments received.

**5.8 ADC-2 Clarification of MOUNTED ([06-218r0](#)) [Banther]**

Michael Banther introduced the proposal to the group. The group debated the perennial problem of the meaning of mounted.

Michael Banther will revise based on comments received.

**5.9 ADC-2 Add supported operation codes to caching ([06-222r0](#)) [Banther]**

Michael Banther walked the group through the proposal. He received various comments for improvement.

Michael Banther will revise the proposal based on comments received.

**5.10 ADC-2, SPC-4, and SSC-3 Vendor-specific Service Actions for MAINTENANCE IN and MAINTENANCE OUT ([06-223r0](#)) [Banther]**

Michael Banther introduced the proposal and noted that this group needs to consider it only if CAP does not approve option #1.

**5.11 ADI: Features for ADC-2 and ADT-2 ([06-060r0](#)) [Suhler]**

Paul Suhler walked the group through the list of work items. We added one and closed several.

Paul Suhler will revise the feature list based on the discussion.

**6 Unscheduled business:****6.1 ADT-2 Typo "N2: Negotiating" in Clause 4.3.3.2 (E-Mail 4/27/2006) [Rose]**

Paul Suhler walked the group through Roger Rose's e-mail. Paul Entzel requested that we review the current text. The group did so and concluded that Roger correctly concluded that 'N2: Negotiating' should be 'N1: Negotiating.' Paul Entzel will revise ADT-2 appropriately.

**6.2 ADC-2, SSC-3 Align clean notification names ([06-235r0](#)) [Banther]**

Michael Banther walked the group through the proposal.

Paul Suhler suggested changing 'clean' to 'cleaning.' Michael Banther agreed to make the change.

Michael Banther made a motion for incorporation of the ADC-2 portion of [06-235r0](#) as revised into ADC-2. Noud Snelder seconded the motion. In the absence of objections or abstentions, the motion passed unanimously.

**6.3 ADC-2 Add encrypting field in VHF data ([06-226r0](#)) [Snelder]**

Noud Snelder introduced the proposal. BDT would like to display on the operator control panel of a media changer device if a DT device is reading or writing encrypted data. Kevin Butt raised a concern that automation devices will likely want to display more information about encryption than just a binary indication. Paul Entzel pointed out that encryption is usually performed on an I\_T nexus. Hence when is the bit set to one?

The group discussed several alternative possibilities. Noud Snelder agreed to change the meaning of the ENCRP bit to Encryption Changed (ENCCHD). The device server will set the bit to one when something changes related to encryption status. Paul Entzel discussed the need for a

log page that the automation application client can read to acquire the encryption status. The mode page in the RMC device server is not usable because the RMC device server maintains it on an I\_T nexus basis. Rod Wideman suggested adding parameters to the DT Device Status log page.

Noud Snelder will revise the proposal based on comments received.

#### **6.4 ADC-2 Adding SAS protocol-specific port and logical unit page parameters to SAS descriptors (e-mail) [Banther]**

Rod Wideman asked if Michael Banther would like a response to his e-mail. Paul Entzel pulled up the SAS-2 mode page 18h and 19h for review. Curtis Ballard stated that HP has seen cases where they wish to hard select a particular speed. Kevin Butt concurred stating that some customers always wish to force certain speeds. The group stated that any concerns in this area can wait until the industry demands greater configurability.

#### **7 Next meeting requirements:**

Subject to approval by the T10 Plenary, the group will hold a meeting 10 July 2006 during T10 plenary week in Colorado Springs, Colorado beginning at 9:00 AM and concluding at an unspecified time.

#### **8 Review new action items:**

- 06-25 Paul Suhler will revise [06-061r0](#) per discussion item 5.4.
- 06-26 Rod Wideman will revise [05-155r4](#) per discussion item 5.5.
- 06-27 Paul Entzel will incorporate [05-155r4](#) as revised into ADC-2.
- 06-28 Kevin Marks will revise [06-183r0](#) per discussion item 5.7.
- 06-29 Kevin Marks will revise [06-180r0](#) per discussion item 5.6.
- 06-30 Paul Entzel will incorporate [06-180r0](#) as revised into ADC-2.
- 06-31 Paul Entzel will incorporate [06-180r0](#) as revised into ADT-2.
- 06-32 Michael Banther will revise [06-218r0](#) per discussion item 5.8.
- 06-33 Michael Banther will revise [06-222r0](#) per discussion item 5.9.
- 06-34 Michael Banther will revise [06-235r0](#) per unscheduled business item 6.2.
- 06-35 Paul Entzel will incorporate the ADC-2 portion of [06-235r0](#) as revised into ADC-2.
- 06-36 Paul Entzel will revise ADT-2, 4.3.3.2 per unscheduled business item 6.1.
- 06-37 Noud Snelder will revise [06-226r0](#) per unscheduled business item 6.3.
- 06-38 Paul Entzel will bring in a proposal to fix the reservation problem in 4.2.3.2 in ADC-2.
- 06-39 Paul Suhler will revise [06-060r0](#) per discussion item 5.11.

#### **9 Adjournment:**

Kevin Butt made a motion for adjournment. Rod Wideman seconded the motion. The group passed the motion unanimously. Paul Suhler adjourned the group at 3:22 PM PDT.

## Attendees:

Name	Status	Organization
Mr. Rod Wideman	V	ADIC
Mr. Noud Snelder	V	BDT
Mr. Curtis Ballard	V	Hewlett Packard Co.
Mr. Michael Banther	V	Hewlett Packard Co.
Mr. Kevin Butt	A	IBM Corp.
Mr. Robert Payne	P	Iomega Corp.
Dr. Paul Suhler	A	Quantum Corp.
Mr. Paul Entzel	P	Quantum Corp.

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