

To: T10 SAS Protocol working group  
From: Bill Martin Emulex  
Subject: SAS2r14 late letter ballot comment on resetting of AWT

## Revision 0:

### Problem:

In 7.13.3, in discussing the resetting of the AWT timer, note 66 states that “connection responses that are only from or may be from expander phys are not included.”; however, 8.2.2.3.2 states:

If this state creates a pending Tx Open message from one of the following:

- a) a Transmit Frame request;
  - b) a Retry Open (No Destination) message;
  - c) a Retry Open (Open Timeout Occurred) message; or
  - d) if the CONTINUE AWT bit is set to zero in the Protocol-specific Port mode page (see 10.2.7.4), then a Retry Open (Retry) message,
- then this state shall:
- a) set the pathway blocked count argument in the Tx Open message to zero; and
  - b) set the arbitration wait time argument in the Tx Open message to zero or a vendor-specific value less than 8000h (see 7.13.3).

These two clauses contradict each other. I believe that item b and c from above should be added to the following list in 8.2.2.3.2:

If a pending Tx Open message was created as the result of this state receiving one of the following:

- a) a Retry Open (Opened By Destination) message;
  - b) a Retry Open (Opened By Other) message;
  - c) a Retry Open (Collided) message;
  - d) a Retry Open (Pathway Blocked) message; or
  - e) if the CONTINUE AWT bit is set to one in the Protocol-specific Port mode page (see 10.2.7.4), then a Retry Open (Retry) message,
- then this state shall set the arbitration wait time argument in the Tx Open message to be the value from the Arbitration Wait Time timer created as a result of the Retry Open message.

### Solution:

Change the wording in 7.13.3 to:

A SAS port shall stop the Arbitration Wait Time timer and set the Arbitration Wait Time timer to zero when it receives one of the following connection responses:

- a) OPEN\_ACCEPT;
- b) OPEN\_REJECT (NO DESTINATION);
- c) OPEN\_REJECT (PROTOCOL NOT SUPPORTED);
- d) OPEN\_REJECT (ZONE VIOLATION);
- e) OPEN\_REJECT (RESERVED ABANDON 1);
- f) OPEN\_REJECT (RESERVED ABANDON 2);
- g) OPEN\_REJECT (RESERVED ABANDON 3);
- h) OPEN\_REJECT (RESERVED INITIALIZE 0);
- i) OPEN\_REJECT (RESERVED INITIALIZE 1);
- j) OPEN\_REJECT (STP RESOURCES BUSY); ~~or~~
- k) OPEN\_REJECT (WRONG DESTINATION); or
- l) Open Timeout.

~~NOTE 66—Connection responses that are conclusively from the destination phy (see table 126 and table 127 in 7.2.6.10) are included in the list. Except for OPEN\_REJECT (RETRY), connection responses that are only from or may be from expander phys are not included.~~

When an OPEN\_REJECT (RETRY), OPEN\_REJECT (RESERVED CONTINUE 0), or OPEN\_REJECT (RESERVED CONTINUE 1) is received:

- a) if the CONTINUE AWT bit is set to one in the Protocol-Specific Port mode page (see 10.2.7.4), then a connection response of OPEN\_REJECT (RETRY) shall not stop the Arbitration Wait Time timer and shall not set the Arbitration Wait Time timer to zero; or
- b) If the CONTINUE AWT bit is set to zero, then a SAS port shall stop the Arbitration Wait Time timer and set the Arbitration Wait Time timer to zero.

A SAS port should not stop the Arbitration Wait Time timer and set the Arbitration Wait Time timer to zero when it receives an incoming OPEN address frame that has priority over the outgoing OPEN address frame according to table 146, regardless of whether it replies with an OPEN\_ACCEPT or an OPEN\_REJECT.