To: T10 Technical Committee
From: Timothy Hoglund, LSI Logic
Date: 17-January-2005
Subject: T10/05-040r0 SAS-1.1 Break_Wait handling

Revision History
Revision 0 (initial draft 17-January-2005)

Related Documents
sas1r07 – Serial Attached SCSI-1.1 revision 0.7

Overview

This proposal is offered to address a scenario in the XL10:Break_Wait state whereby a BREAK primitive sequence and OPEN_REJECT(n) cross on the wire. Because XL10:Break_Wait looks only at Break received and the state of it's Break timeout timer, the potential exists to toggle back and forth between open timeouts and break timeouts as illustrated in Figure 1 below. Note that this situation can also happen with end devices, i.e. SL_CC5:Break_Wait state has similar problem which needs fixing.
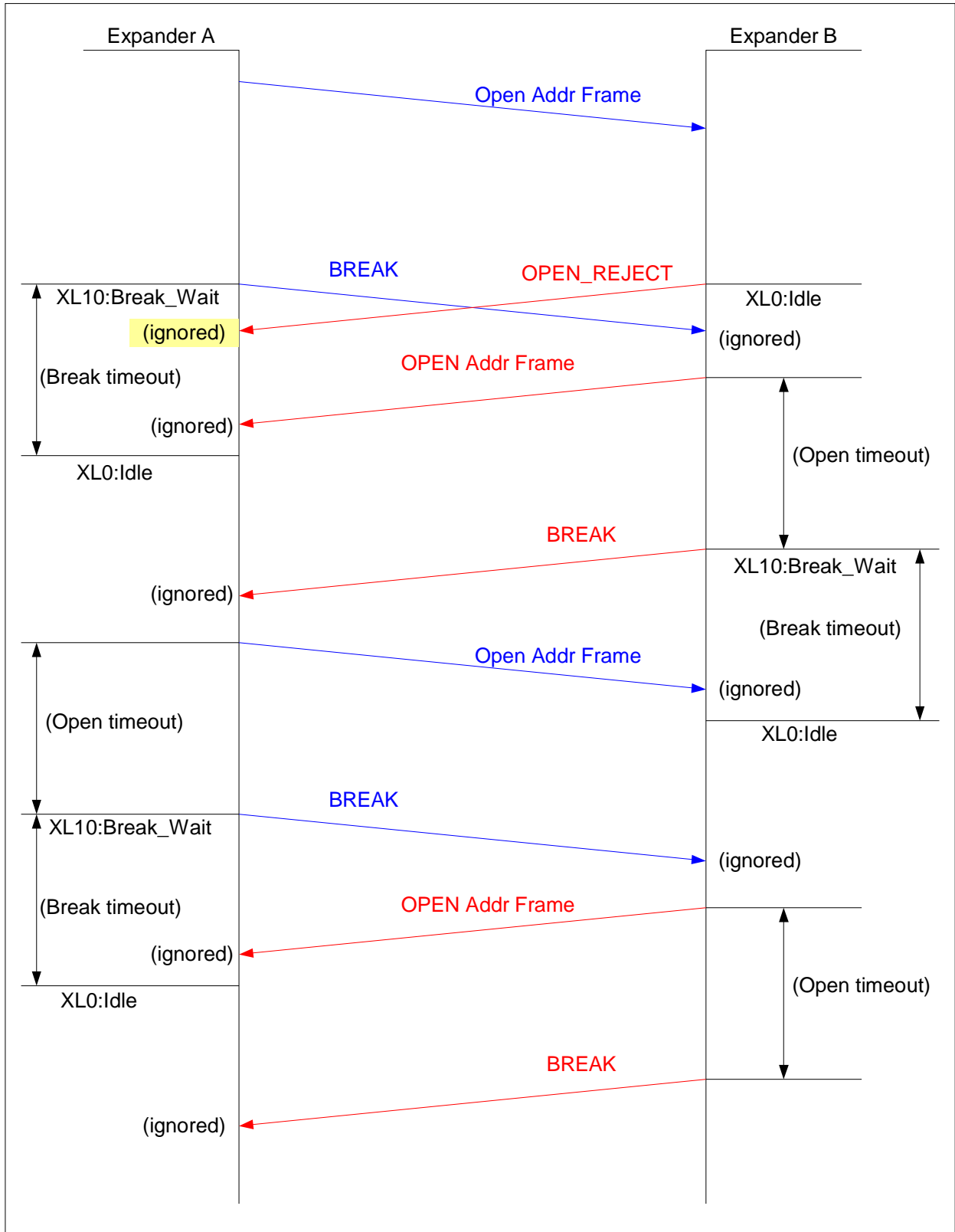
Figure 1

Proposal

Add OPEN_REJECT received to XL10:Break_Wait and SL_CC5:Break_Wait states as a condition to transition to XL0:Idle and SL_CC0:Idle.

Details

7.15.13.2 Transition XL10:Break_Wait to XL0:Idle

~~This transition shall occur after a BREAK Received message is received or after the Break Timeout timer expires.~~

This transition shall occur after:
 a)   a BREAK Received message is received;
 b)   the Break Timeout timer expires; or
 c)   an OPEN REJECT message is received.

7.14.4.7.2 Transition SL_CC5:BreakWait to SL_CC0:Idle

~~This transition shall occur after receiving a BREAK Received message or if the Break Timeout timer expires. If a BREAK Received message is not received before the Break Timeout timer expires, this state shall send a Connection Closed (Break Timeout) confirmation to the port layer before making this transition.~~

This transition shall occur after:
 a)   a BREAK Received message is received;
 b)   the Break Timeout timer expires; or
 c)   an OPEN REJECT message is received.

If a BREAK Received message is not received before the Break Timeout timer expires, this state shall send a Connection Closed (Break Timeout) confirmation to the port layer before making this transition.