To: T10 Technical Committee
From: Tim Symons, PMC-Sierra (Tim_Symons@pmc-sierra.com)
Date: 11 July 2006
Subject: 06-289r3 SAS-2 SMP ZONE LOCK RELEASE

Revision Information

- Revision 0: First draft.
- Revision 1: Renamed function. Added request codes and moved lock definitions into proposal 06-286.
- Revision 2: Text edits – CRC, Function priority.
- Revision 3: Moved activate Broadcast to this function. Removed time-out references as these belong in the time-out proposal 06-326.

Referenced Document

Sas2r04 Serial Attached SCSI – 2 (SAS-2) r4
06-286r0 SAS-2 Zone Management lock functions (Tim Symons, PMC-Sierra).
06-288r0 SAS-2 SMP ACTIVATE ZONE UPDATE functions (Tim Symons, PMC-Sierra)
06-304r0 SAS 2.0 SMP Function Result Priority (Zenta Darnell, Vitesse)
06-326r0 SAS-2 SMP Zone Lock Timer (Tim Symons, PMC-Sierra)

Overview

This proposal is for an SMP zone lock release function associated with the zone management client procedure; lock, load, activate and release. When zoning expander devices in a ZPSDS are locked, the zone management client shall unlock the zoning expander devices when:

a) all zone configuration tasks are complete and acknowledged; or
b) an error result is received from an expander device.

When a zoning expander device receives an SMP ZONE LOCK RELEASE function then it shall set the ZONE LOCKED bit to zero.

[Suggested addition to SAS-2 existing text (included in black), new additional text (included in blue) and changes between revisions shown in red]

10.4.3.1 SMP function request frame format

Table 196 – SMP functions (FUNCTION **field)**

Code	SMP function	Description	Reference
		…	
86h	ZONE LOCK RELEASE	The zoning expander device shall set the zone lock bit to zero and originate Broadcast (Change) (see 10.4.3.xx).	10.4.3.xx
		…	

10.4.3.2 SMP function response frame format

Table 198 – FUNCTION RESULT field

Code	Name	SMP function(s)	Description
		...	
20h	SMP ZONE VIOLATION	CONFIGURE GENERAL, ZONED BROADCAST, PHY CONTROL, PHY TEST FUNCTION, CONFIGURE PHY EVENT INFORMATION, ZONE LOCK, ACTIVATE ZONE LOCKED UPDATE, ZONE LOCK RELEASE	The SMP target port supports the function, but zoning is enabled and the SMP initiator port does not have access to a necessary zone group according to the zone permission table (see 4.8.3.2).
21h	ZONE LOCK VIOLATION	CONFIGURE PHY ZONE, CONFIGURE ZONE PERMISSION, ZONE LOCK, ACTIVATE ZONE LOCKED UPDATE, ZONE LOCK RELEASE	A zoning expander device that is zone locked, receives an SMP zone locked request function from a source that is not the active zone management client, or when the zoning expander device is not locked.
		...	

…

Table xx - Function result priority per SMP Function

SMP Function (per table 197)	SMP Function Result Priority
	...
ZONE LOCK RELEASE	1) INVALID REQUEST FRAME LENGTH 2) SMP ZONE VIOLATION 3) ZONE LOCK VIOLATION 4) SMP FUNCTION FAILED 5) SMP FUNCTION ACCEPTED
	...

…

10.4.3.xx ZONE LOCK RELEASE function

This function shall be supported by all zone management client devices and all zoning expander devices. A ZONE LOCK RELEASE request shall only be originated by the active zone management client.

The ZONE LOCK RELEASE function is used by a zone management client to unlock each zoning expander device, and by each locked zoning expander device to originate a Broadcast (Change) event for any changes.

When a locked zoning expander device receives a ZONE LOCK RELEASE request and there is a change to any zone group then:

   a)   if the phy has zone group access permission to zone group 3 then the zoning expander device shall originate a BROADCAST (Change) on each expander port that has access permission to the expander phy before the change, and after the change based on the zone permission table including the phy with that changed; or

   b)   if the phy does not have zone group access permission to zone group 3 then the zoning expander device shall originate a BROADCAST (Change) with access to zone group 1 on all ports.

Table 1 defines the ZONE LOCK RELEASE request format.

Table 1 – ZONE LOCK RELEASE request

Byte\Bit	7	6	5	4	3	2	1	0
0	SMP FRAME TYPE (40h)							
1	FUNCTION (86h)							
2	Reserved							
3	REQUEST LENGTH (00h)							
4	(MSB)							
7	CRC							(LSB)

The SMP FRAME TYPE field shall be set to 40h.

The FUNCTION field shall be set to 86h.

The REQUEST LENGTH field shall be set to (00h).

The CRC field is defined in 10.4.3.1.

The ZONE LOCK RELEASE response format is defined in Table 2.

Table 2 – ZONE LOCK RELEASE response

Byte\Bit	7	6	5	4	3	2	1	0
0	SMP FRAME TYPE (41h)							
1	FUNCTION (86h)							
2	FUNCTION RESULT							
3	RESPONSE LENGTH (00h)							
4	(MSB)							
7	CRC							(LSB)

The SMP FRAME TYPE field shall be set to 41h.

The FUNCTION field shall be set to 86h.

The FUNCTION RESULT field is defined in 10.4.3.2

The RESPONSE LENGTH field shall be set to 00h.

The CRC field is defined in 10.4.3.1.