

Accredited Standards Committee*
International Committee for Information Technology Standards (INCITS)

Doc. No.: T10/ 05-250r0

Date: June 20, 2005

Reply to: Heng Liao

To: T10 Membership
From: Heng Liao
Subject: Minutes of T10 SAS2 Zoning Conference Call June 16, 2005

Attendees:

Pat Thaler
Ed D'Avignon
Greg Elkins
Kevin Marks
Phillip Roberts
Steve Grorshe
George Penokie
Ron Roberts
Bob Sheffield
Gerry Houlder
John Lohmeyer
Ken Hirata
Steve Johnson

Meeting Notes:

1) 05-144r3, Heng Liao

Heng Liao presented 05-144r3, which is the latest revision of the SAS Zoning proposal document. This version incorporates the new concept of “Supervising Allowed” expander attribute to control which zoning expander can be a candidate for “Supervising Expander” election. This revision also incorporates editorial changes recommended by the committee from last meeting.

The supervising allowed attribute allows an expander to control the “supervising expander” election process. There were some initial group discussions on what the attribute means. But after the concept was explained, most people agreed that there is a need for controlling which expander can be a candidate for “supervising expander”.

The group suggested that expanding the “supervising allowed” single bit attribute to a mult-bit “supervising priority” field. This field specifies the preference among the

supervising expander candidates and is used (concatenated with the SAS address) during the election process as the key for comparison.

There was discussion on whether the “supervising allowed” attribute default state and whether the proposal should allow non-volatile state to be kept by the zoning expanders. There were arguments for it and against it. After much discussion, it was recognized that the “supervising allowed” attribute is just one small part of the zoning expander configuration state that also includes permission table, the Phy zone configuration. If this attribute may be allowed to be non-volatile, then other configuration also need to be non-volatile to gain the real benefit. Further more, making “zoning configuration non-volatile” is dangerous because if an expander is redeployed in a different SAS domain, the stale non-volatile configuration could cause inconsistent configuration in the new SAS domain. Hence the proposal will not be changed to specify “non-volatile” zoning configuration, and the group agreed that the default for “supervising allowed” attribute should be set to 0 in a expander with volatile configuration state.

The group suggested the following editorial comments:

A) Go through all numbered items in the document and ensure that the SAS editing rules on ordered list and non-ordered list is maintained.

B) Change “fabric” to “service delivery subsystem”

C) Reference to PHY_RDY state should be modified to use messages or state defined in SAS 1.1 PHY layer state machine.

D) Any time a device changes group, broadcast message should be sent to all the affected groups (global, or at minimal, both the original SGID and the new SGID)

E) Rather than describing how to calculate the expander change counter and Phy change counter, just have a clear definition on the counter values and who is allowed to see them.

F) Expander “supervising status” to 3 or 4 bits to provide reserved values. Also need to specific which code point to use for a supervising expander that has not received any update yet.

G) In the CONFIGURE ZONE PERMISSION command, the OPERATION field should be expanded to 4 bits with reserved code points.

H) Remove the description on “all trusted Phy shall be assigned to group 127”.

I) Use tables for definition of the code points of a multi-bit fields

J) All Ignored in the new commands shall be changed to reserved. Do not use ignored fields defined in SAS1.1

K) Check whether the SGID field can be located in space marked as “compatible features”.

2) 05-235r1, Ed D'Avignon

Ed presented the concept of “zoning aware” device. The ideal to allow a device to receive zoning information in Open frames, and zone dependent broadcast frames, but the device can not be made trusted (i.e. the expander shall replace the SGID in the OPEN or broadcast frames received from such a device). Ed said this provides flexibility to SAS zoning system with support for more intelligent end devices.

There was discussions surrounding the usage model of such an enhancement, because making an end device trusted can allow an zoning aware device to participate in zoning operations. The enhancement offers the capability for an untrusted device to do zoning depending processing. The group encourages Ed to find an application that can utilize such an enhancement – defining a good usage model would help to move this proposal forward. The concern was if we design a future-proof feature without a clear usage model in mind, the mechanism might not be enough/optimal when a real future application does come along.

Actions:

- 1) Heng Liao to revise the document to incorporate the suggested changes and present to July T10 SAS protocol WG meeting
- 2) Heng Liao to present the status of the SAS zoning subgroup effort to the July T10 SAS protocol WG meeting
- 3) Ed D'Avignon to rework 05-235r0 by identify and describing the usage model and the benefits with interested parties and present a revised proposal to T10 SAS Protocol WG
- 4) Subsequent SAS zoning conference call meetings will be arranged after the July T10 meeting