

ENDL TEXAS

Date: 17 June 2001
 To: T10 Technical Committee
 From: Ralph O. Weber
 Subject: Replacing Task Identifiers in SAM-2

The 30 April SAM-2 editing meeting reached the conclusion that the term 'task identifier' could be replaced with I_T_L_x Nexus, I_T_L_Q Nexus, or I_T_L Nexus, depending on the context. It was further noted that the usage of 'task identifier' was for the most part confined to subclause 4.9, further suggesting that using a more familiar term (e.g., Nexus) would clarify the description. However, these changes were not made for two reasons. They were thought to go slightly beyond the bounds of editorial changes and it was felt that careful research was needed to ensure that the change was implemented properly. This proposal details the changes needed to change the usage of 'task identifier' to some form of I_T_L_x Nexus.

Strikethrough indicates text to be removed and underline indicates text to be added. All PDF page number references are to sam2r18.pdf.

Change 1: Subclause 3.1.56 PDF page 30

Modify the definition of 'linked command' as indicated:

linked command: One in a series of SCSI commands processed by a single task that collectively make up a discrete I/O operation. In such a series, each command has the same ~~task identifier~~ I_T_L_x nexus, and all, except the last, have the LINK bit in the CDB CONTROL byte set to one.

Change 2: Subclause 3.4 PDF page 36

Modify the description of callable procedure conventions as indicated:

For instance, ~~Task Identifier~~ Sense Data is the name of an argument in the **Execute Command** procedure call.

Note that this sentence needs to be modified regardless of the disposition of this proposal because Task Identifier no longer is an argument in the **Execute Command** procedure call.

Change 3: Subclause 4.9 PDF pages 51 & 52

The changes required in subclause 4.9 are so extensive that the entire subclause is presented here as a single unit with modifications marked throughout. Note that editor's note 3 should be deleted although that is not shown and that all text marked for deletion in SAM-2 revision 18 is assumed to be deleted in this proposal.

4.9 Tasks

4.9.1 The task object

The task object represents either a tagged task or an untagged task. The composition of a task includes a definition of the work to be performed by the logical unit in the form of a command or a group of linked commands. A tagged task is composed of a definition of the work to be performed by the logical unit, ~~a tagged task identifier (see 4.9.3)~~, a task attribute (see 7.6), and an I_T_L_Q nexus (see 4.10). An untagged task is composed of

a definition of the work to be performed by the logical unit, a ~~task identifier (see 4.9.3)~~, an I_T_L nexus (see 4.10), and implicitly a SIMPLE task attribute (see 7.6). ~~Task identifier (see 4.9.3) refers to either a tagged task identifier or an untagged task identifier.~~

A tagged task includes a tag (see 4.9.2) in its ~~tagged task identifier~~ I_T_L_Q nexus that allows many uniquely identified tagged tasks to be present concurrently in a single task set. A tagged task also includes one of the task attributes described in 7.6 that allows the initiator to specify processing relationships between various tagged tasks. An untagged task does not include a tag in any of its component definitions, thus restricting the number of concurrent untagged tasks in a single task set to one per initiator. Also, an untagged task is assumed to have a SIMPLE task attribute, leaving the initiator no control over its relationship to other tasks in the task set.

Every SCSI protocol shall support tagged and untagged tasks. Support for tagged tasks by a logical unit is optional.

~~A task identifier I_T_L_x nexus that is in use shall be unique as seen by the initiator originating the command and the logical unit to which the command was addressed. A task identifier I_T_L_x nexus is in use over the interval bounded by the events specified in 5.5). A task identifier I_T_L_x nexus is unique if one or more of its components is unique within the scope specified above specified time interval.~~ By implication, therefore, an initiator shall not cause the creation of more than one untagged task having identical values for the target identifier and logical unit number. ~~Conversely~~ However, an initiator may create more than one task with the same tag value, provided at least one of the remaining ~~task identifier I_T_L_x nexus~~ components is unique.

4.9.2 Task tags

A tag is a field containing up to 64 bits that is a component of a ~~tagged task identifier~~ I_T_L_Q nexus. An initiator assigns tag values in each ~~tagged task identifier~~ I_T_L_Q nexus in a way that ensures that the ~~identifier nexus~~ uniqueness requirements stated in 4-9 4.9.1 are met.

4.9.3 Identification of tasks

~~A device server identifies a task with a task identifier. The task identifier object represents either a tagged task identifier or an untagged task identifier. A tagged task identifier is composed of an initiator identifier (see 4.7.1), a logical unit number (see 4.8) and a tag (see 4.9.2). An untagged task identifier is composed of an initiator identifier and a logical unit number.~~

No other changes are required in SAM-2. SPC-2 has been scanned for uses of 'task identifier' and only one was found, in the **Execute Command** routine prototype. This is a error because it fails to match the existing SAM-2 notation and will be identified for correction in the next revision of SPC-2.