



Date: 18 August 1999  
To: T10 Technical Committee  
From: Ralph Weber, LSI Logic Alternate Member of T10  
Subj: EXTENDED COPY and Abort Task Management Functions

The ABORT TASK, ABORT TASK SET, and CLEAR TASK SET task management functions may cause an EXTENDED COPY command to be terminated prematurely. When this occurs as a result of a persistent reservations PREEMPT AND ABORT service action it is critical that the copy manager cease all data transfers as part of completing the ABORT TASK SET operation described in list entry b) in 5.3.2.5.3 (SPC-2 rev 11).

Two alternatives are proposed for instantiating this requirement in SPC-2. Two alternatives are necessary because task management functions have less than perfectly defined completion notification requirements, and the completion notification of the ABORT TASK SET task management function is a key concept in one of the alternatives.

**Alternative I**

Since initiators using the ABORT TASK SET, et. al. task management functions to prematurely terminate an EXTENDED COPY command probably desire the same behavior as required by persistent reservations, alternative I proposes to state the requirement as a requirement on the copy manager for task management function support. This would be accomplished by adding a new clause to the EXTENDED COPY command definition.

Pros

This alternative places the requirement text in the definition of the EXTENDED COPY command, which is where developers of copy manager functions are most likely to look for special requirements for their software.

Cons

The mechanism by which an ABORT TASK SET task management function indicates its completion had a weak definition, especially for some SCSI protocols. Thus, the statement '... before allowing the device server to complete the task management function' is more open to interpretation than might be desirable.

Specific Proposal

Add the following as clause 7.4.3 and renumber subsequent clauses as necessary.

### 7.4.3 Abort task management functions

When a device server processes an ABORT TASK, ABORT TASK SET, or CLEAR TASK SET task management function that terminates an EXTENDED COPY command, the copy manager shall ensure that all commands it has issued pursuant to the EXTENDED COPY command have been terminated and are no longer transferring data before allowing the device server to complete the task management function. This requirement shall also apply to the processing the PREEMPT AND ABORT service action on the PERSISTENT RESERVE OUT command as described in 5.3.2.5.3.

#### **Alternative II**

State the requirement directly in the 5.3.2.5.3 description of the PREEMPT AND ABORT service action.

#### Pros

This alternative leaves no confusion as to the requirements for the PREEMPT AND ABORT service action.

#### Cons

The defined behavior for the ABORT TASK SET, et. al. task management functions is ambiguous, although no worse so than for the COPY command today. Developers focused on the definition of the EXTENDED COPY command may miss the requirement.

#### Specific Proposal

Modify list b) in clause 5.3.2.5.3 to read as follows (new text underlined):

- b) Every task from all preempted initiators shall be terminated as if an ABORT TASK SET task management function had been performed by each of the preempted initiators. If a terminated task is a COPY or EXTENDED COPY command, all commands and data transfers generated by the command shall be terminated before the ABORT TASK SET task management function is considered completed. After the ABORT TASK SET function has completed, all new tasks are subject to the persistent reservation restrictions established by the preempting initiator;