To: X3T10 Committee (SCSI)

From: George Penokie (IBM)

Subject: Clarification of Sleep Mode

The following concerns regarding sleep mode have been brought up.

The SBC draft Rev 1 states ...

"The lowest power consumption occurs in the Sleep condition. When in sleep condition a unit needs a bus reset to be activated"

- SBC rev 1, section 5.1.4

"If the START/STOP UNIT command is issued with the Power Conditions field set to 1, 2, 3, or 5 <note: 5 is sleep mode> the logical unit shall:

a) change power conditions only on receipt of another START/STOP UNIT command or hard reset

b) suspend any Power Condition timers that are active on receipt of the START/STOP UNIT command until another START/STOP UNIT command is received which returns control of the power condition to the logical unit or a hard reset occurs

c) terminate any command received which requires more power than allowed by the START/STOP UNIT commands *most recent* power condition setting with a CHECK CONDITION status. The sense key shall be set to ILLEGAL REQUEST and the additional sense code shall be set to LOW POWER CONDITION ACTIVE"

- SBC Rev 1, section 6.1.17

"In the sleep condition the device server shall only respond to a bus reset condition."

- SBC Rev 1, section 6.1.17

In the second excerpt, it sounds as if a device can be changed from sleep mode to another mode on receipt of another start/stop command. Additionally, it sounds like a command issued to a target in sleep mode should return a check condition status. In the other excerpts, it sounds as if once a target is in sleep mode, only a bus reset can bring it out. And they do not address whether or not a check condition should be returned and status generated, while the second excerpt seems to say that it should. The spec does include sense codes and ASQs for a logical unit in standby and idle mode, but not for sleep mode.

The way sleep mode is described today could lead to an improper implementation. I propose the following EDITORIAL change be made to the SBC draft to correct this problem:

In section 5.1.4 change:

"If the START/STOP UNIT command is issued with the Power Conditions field set to 1, 2, 3, or 5 the logical unit shall:"

to:

"If the START/STOP UNIT command is issued with the Power Conditions field set to 1, 2, or 3 the logical unit shall:"

and add the following after the first abc list:

"If the START/STOP UNIT command is issued with the Power Conditions field set to 5 the logical unit shall:

a) suspend any Power Condition timers that are active on receipt of the START/STOP UNIT command until a hard reset occurs

b) not respond to a selection service until a hard reset occurs.

On receipt of a hard reset any previously active power conditions timers shall be restored to those values indicated by the saved power condition mode page parameters."