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FROM: Peter Johansson  
 TO: T10 SCSI-3 *ad hoc* Working Group  
 DATE: October 7, 1997  
 RE: SPC-2 Changes for new RBC device type

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After the productive discussion on Wednesday, September 10, in Nashua, and subsequent review in Irvine on October 7, here are the changes to SPC-2 recommended by the RBC *ad hoc* working group.

**New peripheral device type**

Add a definition of peripheral device type 0Eh with a document acronym of RBC and a description of "Simplified direct-access device (e.g., magnetic disk)" to the "Peripheral device type" table under INQUIRY data. The corresponding title for the document associated with revised T10 Project 1240D would be SCSI Reduced Block Commands (RBC). Also add the acronym to the glossary.

**Command optionality**

In the table "Commands for all device types" change the type designations of REQUEST SENSE and SEND DIAGNOSTIC from mandatory (M) to optional (O).

A note should be added to the table or the accompanying text as follows:

[2] The necessity for the REQUEST SENSE command is tied to the transport protocol, FCP, SBP-2 or SIP. If REQUEST SENSE is optional, the transport protocol shall specify equivalent mandatory functionality, e.g., autosense.

The RBC *ad hoc* working group favors this change over device type specific (Z) since editorial revisions of existing command set documents would be necessary if their device types were implemented on newer transports such as SBP-2. The modification suggested above localizes the editorial changes to the transport protocol documents.

In addition, the specification of SEND DIAGNOSTIC requires minor edits:

The SEND DIAGNOSTIC command requests the device server to perform diagnostic operations on the target, on the logical unit, or on both. ~~The only mandatory implementation of this command is~~ Targets that support this command shall implement, at a minimum, the self-test feature with a parameter list length of zero. Except when the SelfTest bit is one, this command is usually followed by a RECEIVE DIAGNOSTIC RESULTS command.

**Optionality of changeable mode pages**

Just as the optionality of saved page parameters is explicitly specified, the description of changeable page parameters should be modified as follows:

A PC field value of 01b requests that the device server return a mask denoting those mode parameters that are changeable. Implementation of changeable page parameters is optional. In the mask, the fields of the mode

parameters that are changeable shall be set to all one bits and the fields of the mode parameters that are non-changeable (*i.e.*, defined by the target) shall be set to all zero bits.

### Equivalence of current and saved mode pages

Under the description of MODE SENSE the working group proposes an additional note to follow the "Page control field" table:

NOTE *m* Some devices implement no distinction between current and saved mode parameters and report identical values in response to a page control field of either 00b or 11b. See also the description of the save pages (SP) bit in the MODE SELECT command.

We would add complementary text to the MODE SELECT command and modify the description of the save pages bit (and split the current paragraph into two for readability):

A save pages (SP) bit of zero indicates the device server shall perform the specified MODE SELECT operation, and shall not save any pages. If the target implements no distinction between current and saved pages and the SP bit is zero, the command shall be terminated with CHECK CONDITION status. The sense key shall be set to ILLEGAL REQUEST, and the additional sense code set to INVALID FIELD IN CDB.

An SP bit of one indicates that the device server shall perform the specified MODE SELECT operation, and shall save to a non-volatile vendor-specific location all the savable pages including any sent in the Data-Out Buffer. The SP bit is optional, even when mode pages are supported by the target. Pages that are saved are identified by the parameter savable bit that is returned in the page header by the MODE SENSE command (see 8.3). If the PS bit is set in the MODE SENSE data then the page shall be savable by issuing a MODE SELECT command with the SP bit set. If the target does not implement saved pages and the SP bit is set to one, the command shall be terminated with CHECK CONDITION status. The sense key shall be set to ILLEGAL REQUEST, and the additional sense code set to INVALID FIELD IN CDB.

### Move START/STOP UNIT into SPC-2

This command has generic applicability for more device types than disks and it is coupled to a useful description of power states. The RBC *ad hoc* working group suggests that this command be transplanted from SBC (with suitable edits to remove references to rotating medium) and be placed in SPC-2 as an optional (O) command. At the time this work is done, the editor and the working group should harmonize the MMC-2, RBC and SBC models of power states.