X3T9.2/92-218R1

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Subject: Global Logging Target Save Disable Bit

        The Log facilities of SCSI-2 account for the capability of a target to provide an implicit saving
operation for saving log parameters. The definition of 7.3.2 also infers that the saving can be turned off by
the initiator setting the TSD bit of the log parameter to a one.

        There are certainly circumstances in which the initiator would benefit from turning off the saving of
parameters. However a rich logging design could have a humongous number of parameter pages. If it
did, it could represent a considerable chore for the initiator to sequence through all the pages setting a
humongous number of TSD bits to one. Seagate is providing a vendor distinctive method to turn off
saving of all logging pages in one quick swoop.

        They have no desire to keep this capability out of the standard, consequently I have the following
proposal for SCSI-3 to standardize this capability.

        For the benefit of those that will refer to SCSI-2 Rev 10H without benefit of those items already
accepted for SCSI-3, I have included some changes which are already in SCSI-3. However this proposal
is only adding the Global Logging Target Save Disable function. Items unchanged from SCSI-2 Rev 10H
are shown in plain text. Items already accepted in SCSI-3 are shown in italics. New portions of this
proposal are shown underlined.

Global Logging Target Save Disable

7.2.6. LOG SELECT Command
(Non pertinent text and tables left out of the proposal)

A save parameters (SP) bit of one indicates that after performing the specified LOG SELECT operation
the target shall save to non-volatile memory all parameters identified as savable by the DS bit in the log
page (see 7.3.2). A SP bit of zero specifies that parameters shall not be saved.

Saving of log parameters is optional and indicated for each log parameter by the DS bit in the page. Log
parameters may also be saved at vendor-specific times subject to the TSD bit (see 7.3.2) in the log
parameter and the GLTSD bit (see 7.3.3.1) in the Control Mode Page. If the target does not implement
saved parameters for any log parameter 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.

It is not an error to set the SP bit to one and to set the DS bit of a log parameter to one. In this case, the
parameter value for that log parameter is not saved.

7.3.2 Log Parameters
(Non pertinent text and tables left out of the proposal)

A target save disable (TSD) bit of zero indicates that the target provides a target-defined method for saving log parameters. This implicit saving operation shall be done frequently enough to insure that the cumulative parameter values retain statistical significance (i.e., across power cycles). A TSD bit of one indicates that either the target does not provide a target-defined method for saving log parameters or the target-defined method has <u>individually</u> been disabled by the initiator <u>setting the TSD bit to one. The initiator may disable the target-defined method for saving all log parameters without changing any TSD bits. See the GLTSD bit in 7.3.3.1 Control Mode Page.</u>

7.3.3.1 Control Mode Page

The control mode page (Table 96) provides controls over several SCSI-2 features which are applicable to all device types such as tagged queuing, extended contingent allegiance, asynchronous event notification, and error logging.

Table 96: Control Mode Page

```
===============================================================================
  Bit|   7    |   6    |   5    |   4    |   3    |   2    |   1    |   0    |
Byte |        |        |        |        |        |        |        |        |
===============================================================================
  0  |   PS   |Reserved|          Page Code (0Ah)                           |
-----|-----------------------------------------------------------------------|
  1  |                          Page Length (0Ah)                            |
-----|-----------------------------------------------------------------------|
  2  |                        Reserved                      | GLTSD  | RLEC  |
-----|-----------------------------------------------------------------------|
  3  |    Queue Algorithm Modifier     |    Reserved    | QErr   | DQue  |
-----|-----------------------------------------------------------------------|
  4  | EECA  |  RAC   |       Reserved         | RAENP  | UAAENP | EAENP |
-----|-----------------------------------------------------------------------|
  5  |                        Reserved                                       |
-----|-----------------------------------------------------------------------|
  6  |                                                                       |
-----|---              Ready AEN Holdoff Period                          ---|
  7  |                                                                       |
-----|-----------------------------------------------------------------------|
  8  |                                                                       |
-----|---              Busy Timeout Period                               ---|
  9  |                                                                       |
-----|-----------------------------------------------------------------------|
  10 |                        Reserved                                       |
-----|-----------------------------------------------------------------------|
  11 |                        Reserved                                       |
===============================================================================
```

Saving of log parameters is optional and indicated for each log parameter by the DS bit in the page. Log parameters may be saved at vendor-specific times subject to the TSD bit (see 7.3.2) in the log parameter. If the target does not implement saved parameters for any log parameter 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.

A Global logging target save disable (GLTSD) bit of zero allows the target to provide a target-defined method for saving log parameters. A GLTSD bit of one indicates that either the target has disabled the target-defined method for saving log parameters or when set by the initiator specifies that the target-defined method shall be disabled.

A report log exception condition (RLEC) bit of one specifies that the target shall report log exception conditions as described in 7.3.2. A RLEC bit of zero specifies that the target shall not report log exception conditions.

The Report a Check (RAC) bit provides control of reporting long busy conditions or CHECK CONDITION status. A RAC bit of one specifies that a CHECK CONDITION status should be reported rather than a long busy condition (e.g. longer than the Busy Timeout Period). A RAC bit of zero specifies that long busy conditions (e.g. busy condition during extended contingence allegiance) may be reported.

The Busy Timeout Period field specifies the maximum time, in 100 millisecond increments, that the initiator allows for the target to remain busy for unanticipated conditions which are not a routine part of commands from the initiator. This value may be rounded down as defined in 6.5.4. A 0000h value in this field is undefined by this specification. An FFFFh value in this field is defined as an unlimited period.

G.E. Milligan