1. Introduction

1.1 Author Information

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1.2 Change History

1.2.1 Revision 0

• Initial Proposal

1.3 Purpose

The Explicit and Implicit Block Address models for SSC-2 are described in T10-00-318 revision 2 with exceptions as noted in the December 6 SSC-2 meeting minutes. In the December 6 SSC-2 meeting, it was noted that T10/00-318 revision 2 is unsatisfactory relative to SPACE and LOCATE command behavior for the Explicit Block Address model. Also, the excessive changes to LOCATE (16) to accommodate the Explicit Block Address model were deemed unacceptable. The purpose of this document is to address those concerns, expressing the SPACE function in such a way that it can work appropriate to an Explicit Block Address model. A compromise with the SPACE command is made such that the device driver has to issue a READ POSITION command in order to get the necessary position information.

2. LOCATE command changes

The LOCATE(16) command proposed below is for use with both the Explicit and Implicit Block Address models. It meets all the criteria for use with the Explicit Block Address model while still necessary in the Implicit Block Address model because of usage history from the SSC command set.

2.1 LOCATE(16) command text

The LOCATE (16) command ... *add in text here just as it appears in 5.3.1 LOCATE (16) Command*

Table 1 - LOCATE (16) command

Bit Byte	7	6	5	4	3	2	1	0
0	OPERATION CODE							
1	RESERVED			DEST_TYPE		CP	BT	IMMED
2	LOGICAL ELEMENT ADDRESS							
9								
10	RESERVED							
13								
14	PARTITION							
15	CONTROL							

Add the following text for the BOUND *field:*

The DEST_TYPE field is used in conjunction with the LOGICAL ELEMENT ADDRESS field to locate to the appropriate place on tape. The DEST_TYPE field specifies whether the location specified is a logical block address, logical file address or logical set address that is being located to. The meaning of this field is defined in the table below:

Table 2 -

Dest Type	Description	Support
00b	Block	Mandatory
01b	Filemark	Mandatory (Explicit Address Model) Optional (Implicit Address Model)
10b	Setmark	Optional
11b	Reserved	N/A

Also, the LOGICAL ELEMENT ADDRESS *field is a new name replacing* LOGICAL BLOCK ADDRESS. *Text should be updated where appropriate. Also, text should be added explaining that the meaning of this field depends on the value of the* DEST_TYPE *field.*

SPACE and LOCATE in the Explicit Block Model

3. SPACE Command Changes

Add the following text to the SPACE command:

The SPACE command is allowed in the Explicit Block Address model but is problematic in that when the function is complete the position on tape is unknown. To continue, a follow-up READ POSITION is required to synchronize current position information.

3.1 SPACE (16) Command Text

The SPACE(16) command proposed below is for use with both the Explicit and Implicit Block Address models. It meets all the criteria for use with the Explicit Block Address model while still necessary in the Implicit Block Address model because of usage history from the SSC command set.

At the completion of a SPACE command, Initiators using the Explicit Block Address model will need to issue a READ POSITION command to determine positioning for continued motion operations using that model.

The SPACE (16) command is identical to the SPACE (6) command except it has a larger COUNT field, up to eight bytes in length, and it has parameter data out with which one can specify the logical block address on tape from which to apply the command. This function was added only for the Explicit Block Address model and is mandatory for that model. Parameter data is prohibited while operating in the Implicit Block Address model.

Table 3 - SPACE (16) command

Bit Byte	7	6	5	4	3	2	1	0
0	OPERATION CODE							
1	RESERVED					CODE		
2	COUNT							
9								
10	RESERVED							
12								
13	ALLOCATION LENGTH							
14								
15	CONTROL							

Add the following text for the ALLOCATION LENGTH *field:*

The ALLOCATION LENGTH field is used to send parameter data space positioning information giving the position on tape from which to start the SPACE command function. This field shall be 0 if the device is running the Implicit Block Address model and shall be 16 if the device is running the Explicit Block Address model. When set to any other value, the device shall respond with

CHECK CONDITION status, with sense data sense key of ILLEGAL REQUEST and additional sense data of INVALID FIELD IN CDB.

Add the following description of parameter data for the SPACE command:

Space positioning information is described below:

Table 4 - SPACE POSITIONING INFORMATION

Bit Byte	7	6	5	4	3	2	1	0
0	RESERVED							
1								
2	LOGICAL BLOCK ADDRESS							
9								
10	PARTITION NUMBER							
13								
14	RESERVED							
15								

The LOGICAL BLOCK ADDRESS specifies which block at which to start the SPACE function specified in the CDB. The PARTITION NUMBER field specifies which partiion to star the SPACE function specified in the CDB. If the current position of the device does not match the position specified by the space positioning information, a locate to that position is first done before the space is executed.