

Company	#	E/T	S	Rev	Pg	Reference	Comment/Suggestion
HP	86	T	R		25	4.2.2.1.2 Local SMC device server operation	Access Controls and Alias commands also require initiator identifier knowledge. Asymmetric access (target port groups) and Extended Copy may also present problems
HP	87	T	C	6b	25	4.2.2.1.2 Local SMC device server operation	How does the local SMC device server handle INQUIRY VPD data requesting page 83h - namely the relative target port identifier and target port identifier/name (association = 1). Are they provided with respect to the local device server in the DTD or the remote device server in the automation device? Which protocol identifier field gets filled in? If the primary interface is iSCSI, the INQUIRY data is going to have to change length.
HP	88	T	R		25	4.2.2.1.2 Local SMC device server operation	How does the local SMC device server handle INQUIRY for page 83h with association = 2 (target device)? Does it report about the DTD or the automation device
HP	92	T	P	6b	26	4.2.2.1.2 Local SMC device server operation	"The remote SMC device server shall not report any protocol-specific mode pages." This can only be true when accessing it over ADT, assuming ADT doesn't define any such pages. Over the primary port, it might have to. Note there could also be protocol-specific log pages.
HP	97	T	C	6b	26	4.2.2.1.4 Caching SMC data and status	This seems risky; there needs to be a very explicit list of exactly what is subject to caching and what is not. The automation application client then knows exactly when to send the command, and the local SMC device server knows what exactly to cache.
IBM Penokie	94	E	C	6b	26	4.2.2.1.3 Bridging manager operation, 2nd paragraph (global)	The term << ready status >> is not defined and not used in other SCSI standards. There either needs to be defined in the definitions section or changed to state << NOT READY sense key >>. So in the statement here would read << This shall have no effect on the cached NOT READY sense keys, as described in 4.2.2.1.4. >>.
IBM Penokie	106	E	C	6b	26	4.2.2.1.4 Caching SMC data and status, 4th paragraph	The statement <<Ready status indicates>> should be << A cached NOT READY sense key indicates >>

reject, these commands are not supported by SMC.

added verbiage to clarify

ADC-2

Extended to preclude log pages.

use ready state

use ready state

Company	#	E/T	S	Rev	Pg	Reference	Comment/Suggestion
IBM Penokie	109	E	C	6b	26	4.2.2.1.4 Caching SMC data and status, 4th paragraph	The statement << ready status >> should be << NOT READY sense keys >>
IBM Penokie	110	E	C	6b	26	4.2.2.1.4 Caching SMC data and status, 4th paragraph	The statement << If the ready status indicates not accessible, the local>> should be << If there are any cached NOT READY sense keys then the SMC device server is not accessible and the local >>
Quantum	50	E	C	6a	26	last sentence before 4.2.2.1.3	It is unclear why this requirement is included. Elaborate on why the remote SMC device server can not report protocol specific mode pages.
Quantum	52	E	C	6a	26	4.2.2.1.3, 2nd paragraph, 1st sentence	It is unclear why this requirement is included. Elaborate on why these UAs are discarded.
Quantum	53	E	R	6a	26	4.2.2.1.3, 3rd paragraph, 1st sentence	It is unclear why this requirement is included. Elaborate on why the bridging manager is must be single threaded
HP	18	Q	C	6b	27	4.2.3 Load and unload nominal states	Are the bit states and sequence guaranteed? I'm not sure of the value of recording so many different states with many being transitory and of very short duration. Is there guidance for automation vendors as to which states to look out for? Is it worth differentiating transitory states from static states?
HP	104	Q	C	6c	27	4.2.3 Load and unload nominal states	What does "nominal" mean? This usage doesn't seem to match its usual definition
Quantum	66	E	C	6a	29	section 4.2.4	What is the value of this section? It is no different than normal behavior.
HP	122	Q	R		32	4.2.7 Medium Auxiliary Memory attributes	What is the point of this limitation?
HP	134	T	R		34	Table 6	Why is the writebuffer command optional, since it is needed for downloading?
HP	135	T	C	6c	34	5 Commands for ADI devices	Need to have a column added to SPC-3's operation code column that agrees with this table May need to have NOTIFY DATA TRANSFER DEVICE added to SPC-3's list of SERVICE ACTION OUT (16) assignments.

use ready state

use ready state

changed to supported
Added section on remote SMC device server operation

Reject. Concern was possible race condition. Reasoning captured in 03-171r0

Added sentence to indicate order not guaranteed

will remove

Agreed, section removed.

Add column, proposal to CAP

Company	#	E/T	S	Rev	Pg	Reference	Comment/Suggestion
HP	136	T	C	6c	34	5.1 Summary of commands	<p>Table 6 - Command set for automation drive interface Unless this command set is special, it should support all the commands that are available in every other command set. (it might be good to drop support for the scc Commands):</p> <p>Add:ACCESS CONTROLS IN ACCESS CONTROLS OUT CHANGE ALIASES PERSISTENT RESERVE IN PERSISTENT RESERVE OUT REDUNDANCY GROUP IN REDUNDANCY GROUP OUT REPORT ALIASES REPORT DEVICE IDENTIFIER REPORT SUPPORTED TASK MANAGEMENT FUNCTIONS SET DEVICE IDENTIFIER SPARE IN SPARE OUT VOLUME SET IN VOLUME SET OUT</p> <p>Add Report/Set Dev ID, Report supported Task Mgt, all optional. Rejected others since ADC based on SPC-2.</p>
IBM Roberts	2	T	R		34	5.1 Table 6 Command Set for automation drive interface	<p>Consider adding a command to allow the library to send a cartridge bar code label volser to the drive. This would allow the library to send the volser to the drive for use in drive error log entries, making it easier for service personnel to determine which cartridge was involved with a drive-reported error. This can be accomplished with a Write Buffer command, but having a standardized method of accomplishing this task would be helpful. Perhaps defining a standardized write buffer id for this purpose would be appropriate.</p> <p>KB to take proposal against SPC-3 to CAP for new Automation type attribute; no change to ADC-2.</p>

Company	#	E/T	S	Rev	Pg	Reference	Comment/Suggestion
IBM Roberts	3	T	A		34	5.1 Table 6 Command Set for automation drive interface	Consider adding a command to allow the library to send a time stamp (number of seconds since some date) to the drive. This would allow the library to update a real-time clock in the drive. This real-time clock would then allow the drive to provide meaningful date/time info in error log entries. This can be accomplished with a Write Buffer command, but having a standardized method of accomplishing this task would be helpful. Perhaps defining a standardized write buffer id for this purpose would be appropriate.
STK	18	E	R		34	Table 6	Read attribute should be optional, not mandatory.
HP	144	Q	R		36	5.2 NOTIFY DATA TRANSFER	pending unit attention condition" is unclear and seems CA-specific. In an autosense protocol, isn't the UA pending until reported?
HP	145	T	C	6b	36	5.2 NOTIFY DATA TRANSFER	invocation or completion? Don't want to queue up lots of these
Seagate	25	T	R		36	5.x	A mechanism is needed for automation to update its microcode from a microcode tape. Define a new ADC device server buffer which can be accessed when a microcode medium is loaded. Reading the buffer provides the contents of the tape. Writing the buffer changes the contents of the tape, unless write-protected. Define ASC/Q to be reported if the medium loaded is not a microcode medium. (This could be put in the commands clause by adding subclauses for READ/WRITE BUFFER, and having each refer to the command definitions in SPC-2, and also define the new buffer. Alternatively, could this go as a new subclause in 6, Parameters for ADI devices?)
ADIC	47	T	R		37	6.1.2	Define way to retrieve drive status display character(s). Provide log page or parameter to retrieve LED or equivalent display code (to mimic drive panel and get error info). Need proposal
HP	148	T	C	6c	37	6.1.1 Log parameters overview	Table 8 - Log page codes Probably need to add: 06h, 07h, 0Bh, 0Dh, 0Eh, 0Fh, 10h, 2Fh which are available to every other device type

See HP-139
Reject, support of specific attributes is optional

See existing text in SPC-3
Removed wording on "since last processing"

Additional consideration for ADC-2 or reject (PS)

Need proposal (or ADC-2)

Add SSC page codes

Company	#	E/T	S	Rev	Pg	Reference	Comment/Suggestion
ADIC	50	T	R		39	para after note 3	When Cmpr is enabled, how to find compressoin ratio? needs proposal to find compression ratio
HP	159	T	R		39	Note 4	How should the WRTP bit be set when handling WORM cartridges.
HP	160	T	C	6a	39	6.1.2.1	If the RAA value doesn't reflect prevent media removal how do you stop unloading prevented drives?
ADIC	59	T	R		40	RRqst field	How does a power cycle affect this? clears due to hard reset, power cycle, etc.
ADIC	60	T	C	6a	40	table 13	What constitutes tape in motion? Tape is in motion for 05h-08h, so what is 04h?
ENDL	69	T	C	6a	40	6.1.2.1, 1st p after note 7	[Technical] Does the retrieval of the DTD Primary Port Status log parameters set the IntfC bit to zero regardless of the initiator port retrieving the parameters? The behavior of the IntfC bit in the presence of multiple initiator ports needs to be clarified.
ENDL	70	T	C	6a	40	6.1.2.1, 2st p after note 7	(Technical) The behavior of the TAFC bit in retrievals are made from multiple initiator ports needs to be clarified.
HP	106	Q	C	6a	40	Last paragraph	"at least one TapeAlert state flag has changed from its previous value since the last retrieval of the TapeAlert flags". Is this referring to retrieval of the ADI interface TA flag set (i.e. independent of host interface retrievals)? Can multiple automation controllers log into the drive? If so, is there a set of pages for each automation controller.
HP	162	T	A		40	paragraph 2	The text describing the DACC bit implies it'll be set regardless of the outcome of the Load operation. After successfully loading a cleaning cartridge I wouldn't expect the DACC bit to be set yet the spec. implies it would.
HP	163	T	C	6b	40	Tabel13	Should this table reflect only physical tape motion? Tape devices can read/write large amounts of data without any tape motion so does the library want to know the tape is moving or that the drive is read/writing?
Quantum	99	T	C	6a	40	Table 13	Add value for "Erasing"

Need proposal (or ADC-2)

Add to ADC-2

Make bit 7 of byte 8 indicate PAMR on RMC device held.

Reject

Renamed to DT device activity, removed all reference to Tape, changed to Medium

Added statement that retrieval is by I_T nexus

Added statement that retrieval is by I_T nexus

Needs further discussion. MB to propose new wording; rename mloaded.

Clarified activity wording for medium

Added value 09h for erasing

Company	#	E/T	S	Rev	Pg	Reference	Comment/Suggestion
Seagate	35	T	C	6a	41	6.1.2.2	Should the device server enforce the polling delay, and if so how? "Either change "shall" to "should" in last paragraph or mandate Check Condition / Illegal Request / new ASC if LOG SENSE for the page is issued too soon. Or is this too ugly?
							Changed to should
Quantum	104	T	P	6c	42	4th sentence after Table 16	Add a current speed value of "Unknown" and remove the requirement that LNPC be true for the CURRENT SPEED field to be valid.
							Need proposal to clarify LNPC bit, which will then address Current Speed (KB to provide, 04-228).
Seagate	36	T	C	6a	42	6.1.2.3.1 Table 16	Eight speeds for FC may not be enough. Shift Current Speed field to bits 5:3, leaving 6 Reserved. This will give one bit for expansion.
							Change 10Gb/s to 8Gb/s and leave current field size (table 33)
HP	121	Q	R		43	6.1.3 TapeAlert response log page	Is there provision for the expansion of the TA flags page? I think 64 may be insufficient.
							64 flags are defined, page can be expanded self-describing
HP	169	T	R		43	(Global)	How about some SAS data structures? What is the schedule for ADC-2?
							Defer to ADC-2
ADIC	72	T	C	6a	44	Table 20	Recovery actions 09h-0Ch persist across power cycle or not? Need to clarify persistence of recovery procedures (state that reconditioned upon initialization?)
							Added sentence that recovery procedures do not persist across a power cycle.
ADIC	73	T	C		44	table 20	Can recovery 03h be used as substitute for 02h if the automation cannot push?
							Yes.
IBM Butt	1	T	A		44	6.1.4 Requested Recovery log page	Add a method to indicate that a retrieval of a drive error log (dump) is requested prior to performing the requested recoveries.
							Will add procedure as part of drive log proposal
IBM Roberts	4	T	P	6b	44	6.1.4 Requested Recovery Log Page	Need more description of Recovery Action 01h. Does this mean no recovery is needed? Or no recovery is possible? Also suggest that Recovery Actions 01h, 05h, 08h, and 09h may be good candidates for collecting a drive dump to assist support personnel in determining the root cause of the problem.
							Clarified wording for 01h
HP	127	I	R		44	Recovery procedure	Good idea. I think the descriptions need to be more specific/detailed to avoid ambiguity, e.g. "Push medium"??, "Issue LOAD command" - is this referring to an ADI load, or a message to be displayed on the OCP, or a message to be passed on to the ISV application/driver?

Company	#	E/T	S	Rev	Pg	Reference	Comment/Suggestion
HP	172	T	R		45	6.1.5 Device Statistics log page	Replace with a LU independent method of reporting these parameters. Consider using the Target Logs W-LUN instead.
Seagate	39	T	R		46	6.2.1 Note 9	Rejecting mode parameter change because port is enabled: Is a specific ASC needed so that it will be clear why Illegal Request is being reported? Promote note to normative text and get an ASC/Q from CAP. Don't need to specify which parameters are subject to this restriction; that can be left as vendor specific.
ENDL	93	T	C	6a	47	6.2.1, table 24	[Technical] Table 24 is neither fish nor fowl, and thus leaves the ADC status of many mode pages unclear. Are codes 00h through 0Ch and 0Fh through 1Fh reserved, as specified in SPC-2, or what? Can you really have a device that does not support the Control mode page? What about the Disconnect-Reconnect Mode page?
HP	139	Q	A		47	Table 24 - Mode page codes	Is there provision for setting/reading the drive clock? or real-time clock? (similar to the set/get_time ACI commands)
HP	182	T	P	6c	47	6.2.1 Mode parameters overview Table 24	Probably need to add: 00h, 02h, 0Ah, 18h, 19h, 1Ch, 20h-3Eh
IBM Penokie	296	T	C	6c	47	6.2.2.1 Node descriptor sub page	(Technical) There is no definition of what a << node >> or a << target device Node >> is. Whatever it is needs to be clearly defined so there is no confusion with it and a FC node which in itself is not will defined. One solution would be to state << ADC device server's node. For a definition of node see FC-FS. >>
HP	185	T	C	6c	48	6.2.2.1 Node descriptor sub page	This subpage is FC specific. Make it generic and rename it. (it may employ protocol-specific fields if appropriate) Which name is it modifying? Put it in SCS VPD page 83h terms - the logical unit name, target port identifier/name, or target device name.
IBM Penokie	301	T	C	6c	48	6.2.2.1 Node descriptor sub page, table 27	(Technical) There is not clear definition or format of what the WORLD WIDE NODE NAME is or should be. This needs to be clearly defined. One solution is to use FC terminology. To do that change the field name to << NAME IDENTIFIER >>.

Defer to ADC-2

Reject, precedence for silence.

Added all the missing mode page codes.

Reference to SPC-3 (needs proposal)

Add 02, 18, and 19; proposal for ADT?

Changes noted in draft.

Company	#	E/T	S	Rev	Pg	Reference	Comment/Suggestion	
HP	186	T	P		49	Table 31	SAS not included. Similarly there are specific Mode pages to configure SAS ports.	Protocol identifier used now, ref. SPC-3. Defer SAS control to ADC-2
HP	192	T	C	6b	49	6.2.2.2.1 DTD Primary Port descriptor header	"The PORT TYPE indicates the type of protocol supported by the port. Values for this field are a subset of the protocol identifiers defined in SPC-2. Legal values for this field can be found in table 31." Rename this to PROTOCOL IDENTIFIER and use the values exactly as defined in SPC-3. Delete Table 31.	Notes in draft
HP	195	T	P	6b	49	6.2.2.2.1 DTD Primary Port descriptor header	RELATIVE TARGET PORT should point to SPC-3 for its definition (I assume the same values are meant) rather than redefine it here (potentially incorrectly or incompletely). SPC-3's r.t.p. is a 4 byte value, so a comment that a maximum of 255 are supported is in order. (or, make this field 4 bytes)	
Seagate	41	T	R		49	6.2.2.2.1 Table 31	Need iSCSI and SAS port types. Change SPC-2 reference to SPC-3, because SAS is not in SPC-2. Add 5h for iSCSI and 6h for SAS. See Table 239 in SPC-3 for full text.	Defer to ADC-2
HP	196	T	P	6c	50	6.2.2.2.2	When we did the crossroads bridges, we had to have the concept of current setting and future setting and what the alpha was actually set to. Which one is set in the FC-AL LOOP ID? If there is a conflicting address the current address on fibre the address switches to a non conflicting address. I think that we might need at least 2 fields for this alpha.	Add new parm to log page.
Quantum	114	T	C	6c	50	After table 33	We need to add a paragraph describing the form of the PORT NAME field. Suggestion: 'When the MPN value is 11b, the PORT NAME field contains an NAA type world wide unique name (See SPC-3).'	Use as suggested (with SHALL)
Seagate	42	T	R		50	6.2.2.2.2 Table 32	Eight speeds for FC may not be enough. Shift Speed field to bits 3:1 and SpdLock field to bit 0. This will give a Reserved field to the left of Speed for future expansion.	Reject
HP	161	Q	C	6b	51	6.2.2.2.3 Parallel SCSI descriptor parameters	Presumably there is provision for setting WWN of SCSI devices?	Resolved by changing Node to Device descriptor (HP 185)

Company	#	E/T	S	Rev	Pg	Reference	Comment/Suggestion
HP	209	T	R		51	6.2.2.2.3 Parallel SCSI descriptor parameters	"defines values for this field" where? Name the mode page/field name whose values you're borrowing.
HP	210	T	R		51	6.2.2.2.3 Parallel SCSI descriptor parameters SCSI Parallel Interface 4 (SPI-4)	should be SPI-5 everywhere
Seagate	43	T	C	6a	51	6.2.2.2.2 Table 34	A speed of 8 Gb/s is being proposed by FCIA to succeed 4 Gb/s. Add 8 Gb/s at 011b and move 10 Gb/s to 100b.
ENDL	113	T	C	6c	54	6.2.2.3.1, table 38	[Technical] How is this 2-byte logical unit number related to the 8-byte logical unit number format specified in SAM-3? My guess is that RMC devices are limited to being the lowest level in a hierarchy and thus need only 2-bytes to specify their logical unit number. But whatever the reason, the relationship to SAM-3 logical unit numbers needs to be spelled out in the description of this field.
HP	225	T	D		54	6.2.2.3.1 RMC Logical Unit descriptor parameters	Note that access controls' LUN mapping features means different initiator ports may see the same LUs with different LUNs. All this can do is report the LUN for the initiator port retrieving this mode page. Also, I think the mapping could be different through different target ports. Again, all the can be reported here is through the target port being used.
HP	226	T	A		55	6.2.2.3.1	Maybe we should add a new sense code to the primary commands set that means not ready, logical unit offline. In progress is not very descriptive that the unit needs an external interface to put it online. I always thought the not ready in progress should be used if the outstanding command will sometime get finished on its own and you should be able to poll for the not ready to go away.
HP	227	T	P	6b	55	6.2.2.3.1	It's not clear why MLUD 00h and 01h are different values for Mode Select, when both values perform the same function. Get rid of those 2 values and shift the others, i.e., leave 00h as it is and change 02h to 01h and 03h to 02h

Replaced 10Gb/s with 8Gb/s

Describe as being bytes 0 and 1 of the single level logical unit structure (see SAM-2). Ask Ralph.

MB to study for possible proposal

CAP proposal for new ASC/ASC of LOGICAL UNIT NOT READY, OFFLINE (MB)

Changed 01h to Reserved for MODE SELECT

Company	#	E/T	S	Rev	Pg	Reference	Comment/Suggestion
HP	230	T	A		56	6.2.2.3.1	DENOVr bit. Consider this case: If it's set and SELECT WRITE DENSITY=Gen3 but tape is Gen1-type, then should we check condition? Specify in the manual what to do with different generations of tape being used i.e. explore corner cases. Also Mode sense should return the tape's highest density code, if a tape inserted, instead of the value set by
HP	231	T	C	6c	56	6.2.2.3.1	Add an AUTODROFF bit
HP	232	T	C	6c	56	6.2.2.3.1	Add a paragraph describing the operation of the AUTODROFF bit. When zero, the RMC device server reverts from disaster recovery operation to non-disaster recovery operation upon detection of vendor specific conditions. Upon reverting to non-disaster recovery operation, the RMC device server will set the DRMODE bit to zero. When one, the RMC device server remains in disaster recovery mode until an application client changes the DRMODE bit to zero.
ENDL	116	T	C	6c	57	6.2.2.3.2, table 41	[Technical] How is this 2-byte logical unit number related to the 8-byte logical unit number format specified in SAM-3? My guess is that SMC devices are limited to being the lowest level in a hierarchy and thus need only 2-bytes to specify their logical unit number. But whatever the reason, the relationship to SAM-3 logical unit numbers needs to be spelled out in the description of this field.
ENDL	117	T	C	6c	58	6.2.2.3.3, table 42	[Technical] How is this 2-byte logical unit number related to the 8-byte logical unit number format specified in SAM-3? My guess is that ADC devices are limited to being the lowest level in a hierarchy and thus need only 2-bytes to specify their logical unit number. But whatever the reason, the relationship to SAM-3 logical unit numbers needs to be spelled out in the description of this field.
HP	243	T	C	6b	58	6.3 VPD parameters	"Device Identification page 83h (as defined in SPC-2) may be different between ADC and RMC devices." They must have different data if they've got logical unit names or will confuse software. I'd delete this sentence.

KB will work on new wording to address (via e-mail)

Will assign to bit4 of byte8. MB will e-mail some wording changes.

Ditto ENDL 113

Ditto ENDL 113

Company	#	E/T	S	Rev	Pg	Reference	Comment/Suggestion
IBM Butt	2	T	A			Drive Error Log	Add a method to force and retrieve a drive error log (dump)
HP	17	Q	C	6b			Should drive behaviour relating to host SCSI load command issued when library has seated the cartridge but not threaded be part of spec or not?
HP	266	Q	R				What about f/w upgrade cartridge handling - containing drive images, controller images, images for other drives, invalid firmware images, image copying. Not sure to what extent this is covered in the spec
HP	267	Q	C	6b			Is there a means to report media type?
HP	268	Q	R				Should there be special provision for FC port failover?
HP	269	Q	R				Is the case when the drive powers up and may not responding covered (e.g. powered up with cartridges loaded)?
HP	270	Q	R				Are there response time limits specified or is solely contained within transport layer spec?
			84	Total processed			
			26	Rejected			
			7	Accepted			
			42	Completed			
			8	Partially accepted and completed			
			1	Discussing			
		84	84				
E/T column indicates nature of comment: E = Editorial; T = Technical; I = Informational; Q = Question.							
S column indicates status of comment as follows:							
A = Comment accepted, changes not yet made							
R = Comment rejected, no change will be made (majority due to being duplicate or superceded by other comment)							
C = Changes complete in the indicated revision							
P = Partially accepted and complete in the indicated revision							
D = Initially discussed, not closed yet							
Rev column indicates which draft revision change was made.							
Sorted by PDF page number to help identify duplicate comments and consolidate resolution.							

Need proposal

Added example to Model section text

Defer to ADC-2

ADC device server can use SSC-3 version of REPORT DENSITY SUPPORT

Defer to ADC-2