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Joseph Chen

The following items summarize the status of document e03124r9-HPA\_State\_Diagram\_and\_Description in response to comments for the e03124r6 by WD (e05168r1) and Seagate (e05169r0).

### Comments Summary

| Item | From | Description  | Information  | Status                        |  |
|------|------|--|--|-------------------------------|--|
| 1    | WD   | Need to add a statement in the feature set description and refer to it in IDENTIFY DEVICE word 86 bit 8. | How does HPA affect word 86 bit 8?<br>HPA enabled...<br>kz - Fixed (not yet)<br><b>Need to add a statement in the featureset description</b> and refer to it in IDENTIFY DEVICE word 86 bit 8.   | Open                          |  |
| 2    | WD   | Clarify on how does SRST affect the HPA feature set  | Where are the reset transitions? When a volatile SETMAX is issued, a reset should either clear the HPA or transition to the last non-volatile SETMAX. I think it should be made clear that SRST does not affect the HPA feature set<br>kz - not fixed (out of scope) - <b>must be addressed in normative section.</b><br>All hardware resets and power-on resets appear to be documented | Open                          |  |
| 3    | WD   | Clarify password usage: Is the last password to be used?   | There is no statement about which password is used when several set passwords are issued.<br>kz - Not fixed (out of scope) - <b>must be addressed in normative section</b><br>This is currently not covered. Other people want to go check how their devices work. I currently believe that using the last password makes the best sense.  | Open                          |  |
| 4    | WD   | Clarify NATIVE MAX is changed by DCO   | Need to state in the DCO command that the NATIVE MAX address is changed by DCO.<br>kz - Not fixed (out of scope) - must be addressed in normative section<br>This is already stated in the <b>DCO SET in ATA8</b>  | Closed<br>(To fix in DCO SET) |  |
| 5    | WD   | Clarify H1 state: No HPA, password set   | This needs to be changed to match ATA/ATAPI-7 for H1, This would be a functional change for H0.<br>kz - not fixed - functional change TBD.<br>This is a spec change need to investigate further.   | Open                          |  |
| 6    | WD   | Do we need H1 State?   | Do we want this state?<br>kz - not fixed - functional change TBD<br>This prevents somebody else from setting a password  | Closed                        |  |
| 7    | WD   | Why does SET MAX LOCK aborted on H1 State?   | Why?<br>kz - not fixed - creates numerous new states and complicates diagram.<br>This needs to be changed to match   | Open                          |  |

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|    |                |   | ATA/ATAPI-7 which allows a transition to the locked state   |        |  |
| 8  | SG             | Notes on the first page are not referenced on the diagram.      | These notes are not referenced anywhere<br>kz - notes must be reflected in the normative section and removed from diagram.<br><b>Some will be incorporated into the featureset description.</b> Will add refereces to others  | Open   |  |
| 9  | SG             | States can be entered at power-on are H0, HS3, and HES3.        | Verify that states that can be entered at power-on are H0, HS3, and HES3<br>Curtis verify<br><b>Add to feature set description</b>  | Open   |  |
| 10 | SG<br>1a<br>1b | About the "Open" and "Eliminated" terms definition              | These are not defined terms. Are they meant to say the same thing?<br>kz - <b>must be referenced in the normative section</b> as legacy terms for no HPA. These are different terms describing the same thing. Will change to define them better when they are moved into the featureset description text | Open   |  |
| 11 | SG<br>2c       | Clarify the limitation of number of times one can set password. | Add a statement in the description of the feature set that states there is no limit to the number of times you can set the password<br>kz - <b>normative statement</b><br>not fixed (out of the scope) - must be included in the normative part of the document.  | Open   |  |
| 12 | SG             | Clarify the SETMAX volatile and non-volatile value              | Both STEMAX volatile and non-volatile imply that the value must be less than native max.  | Open   | <b>normative statement</b>                 |
| 13 | SG             | Change NATIVE MAX to READ NATIVE MAX return parameter           | S/B READ NATIVE MAX<br>kz – Fixed<br>Should be rad native max return parameter??  | Closed | JC Fixed                                   |
| 14 | WD<br>SG<br>1c | MAX_BAD count   | ATA7 has 5<br>kz - fixed<br>Accepted  | Closed |  |
| 15 | SG             | Describe the power-on condition                                 | Please add a new subclause to the feature set that describes the power-on condition.<br>kz - must be in <b>normative section.</b><br>Reference Seagate comment 2b   | Open   |  |
| 16 | WD<br>SG<br>2a | HS2:H0 should be volatile                                       | S/B Volatile<br>kz - not fixed - adding volatility parameter to Set Native Max commands creates numerous new states and complicates diagram<br>-accepted  | Open   | <b>Why the resolution is diff from #18</b> |
| 17 | WD             | On HS2 state input H0:HS2                                       | S/B H0a:HS2<br>kz – fixed<br>accepted   | Closed |  |
| 18 | WD             | HS3:H0 should be  | S/B Volatile  | Open   | <b>Resolution is</b>                       |

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|    |    | volatile  | kz - not fixed - adding volatility parameter to Set Native Max commands creates numerous new states and complicates diagram<br>-Will be fixed throughout  |        | not consistent with #16               |
| 19 | WD | Clarify on hardware reset in HS4 state HS4a:HS1 | There is no definition of hardware reset in ACS, need to add a reference in the glossary to AAM or the transport docs.<br><br>kz - must be in the <b>normative section</b> .<br><br>The AAM document does not differentiate between Powre-On and Hardware/COMRESET. A new proposal would be needed to merge these resets into a single reset.   | Open   |                                       |
| 20 | WD | Typo on HS5, HS4d:HS4                           | S/B HS5d:HS55<br>kz - fixed.<br>Accepted  | Closed |                                       |
| 21 | WD | Typo on HS5, HS4e:HS4                           | S/B HS5e:HS55<br>kz - fixed.<br>Accepted  | Closed |                                       |
| 22 | WD | Clarify HES2:H0                                 | You need to power cycle before before issuing another NV SETMAX. This transition is illegal, it should abort.<br><br>Global: Need to differentiate between volatile and non-volatile. I think you meant to say volatile.<br><br>kz - not fixed - adding volatility parameter to Set Native Max commands creates numerous new states and complicates diagram<br><br>- Will be fixed globally | Open   |                                       |
| 23 | WD | Missing Text on HES2:HES3                       | Missing text description<br>accepted  | Closed |                                       |
| 24 | WD | Typo on HES3                                    | S/B HEL5:HES5<br>kz - fixed (to HES3)   | Closed |                                       |
| 25 | WD | Missing Text on HES4:HEL1                       | Missing text description<br>accepted  | Closed |                                       |
| 26 | WD | Clarify HES5:H1 transition                      | Should this be volatile...<br><br>kz - not fixed - adding volatility parameter to Set Native Max commands creates numerous new states and complicates diagram<br><br>Handled  | Open   | Resolution is not consistent with #16 |
| 27 | WD | Clarify HES6:H1 transition                      | S/B Volatile?<br><br>kz - not fixed - adding volatility parameter to Set Native Max commands creates numerous new states and  | Open   |                                       |

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|    |          |   | complicates diagram   |        |  |
| 28 | SG<br>6a | Clarify HL1<br>"=MAX_BAD"                                       | The =Max_Bad is not covered.<br>kz - fixed  | Closed |  |
| 29 | WD       | Clarify HL1b:HL1 state<br>transition                            | In the past this would have cleared the<br>HPA.<br><br>kz - fixed.<br>Accepted, ATA/ATAPI-7 would<br>transition to H1   | Closed |  |
| 30 | SG<br>6b | Group ABORTED<br>commands together,<br>HL1c:HL1 and<br>HL1d:HL1 | Global: This should be moved to that<br>HL1a aborted list.<br><br>kz - fixed  | Closed |  |
| 31 | WD       | Clarify HEL1b:HEL1<br>state transition                          | Should clear the HPA (transition to H1).<br><br>kz - fixed.<br>accepted   | Closed |  |
| 32 | SG       | Clarify text on H0  | Add interaction with IDENTIFY DEVICE<br>and PACKET IDENTIFY DEVICE: word<br>85 bit 10 S/B cleared to 0.<br><br>word 86 bit 8 shall be cleared to 0 when<br>there is no password is set.<br><br>This also applies to H0, HS1, HS2, HS3,<br>HES1, HES2, HES3. | Open   |  |
| 33 | SG       | Clarify text on H1  | Add interaction with IDENTIFY DEVICE<br>and PACKET IDENTIFY DEVICE: word<br>85 bit 10 S/B cleared to 0.<br><br>word 86 bit 8 shall be set to 1 when the<br>password is set.<br><br>This also applies to HS4, HS5, HS6,<br>HES4, HES5, HES6.                 | Open   |  |
| 34 | SG       | Clarify text on HS1   | Add interaction with IDENTIFY DEVICE:<br>word 85 bit 10 S/B set to 1.<br><br>This applies tp HS2, HS3, and others   | Open   |  |
| 35 | WD       | Clarify text on HS2:HS3<br>transition                           | Need HS2:HS3 description<br><br>kz - fixed.<br>accepted   | Closed |  |
| 36 | WD       | Clarify text on HS3   | Include HS5<br>kz - fixed.  | Closed |  |
| 37 | WD       | Typo on HS3:H2  | S/B HS2<br><br>kz – fixed<br>accepted   | Closed |  |
| 38 | WD       | Typeface on HS3:H2  | LOCKED S/B HPA Locked<br>kz - Fixed   | Closed |  |
| 39 | WD       | Clarify text on HS4   | Lacking in substance. Where is the<br>from list<br><br><b>Global, SET MAX ADDRESS SET</b>   | Open   |  |

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|    |    |                                      | PASSWORD does not have a (volatile) in the name.<br><br>-Accepted, will provide a better description.   |        |   |
| 40 | WD | Clarify text on HS4a:HS1             | S/B H1<br><br>kz - fixed<br>AcceptedNO HPA  | Closed |   |
| 41 | SG | Clarify text on HS4b:H1              | NO HPA, PASSWORD SET<br><br>kz - fixed  | Closed |   |
| 42 | WD | Clarify text on HS5                  | This is too vague.<br><br>Double period at the end.<br><br>Also, global: remove the (Non-Volatile)<br><br>Accepted  | Open   |   |
| 43 | WD | Fix HS4d:HS4 and HS4e:HS4            | HS5d:HS5 and HS5e:HS5   | Closed |   |
| 44 | WD | Fix HS5e                             | HS4:HPA SET (Volatile) changed to HS5:HPA SET (Non-volatile)  | Closed |   |
| 45 | WD | Typo on HL3:HL6 text (Non-Volatile 2 | S/B (Non-Volatile 2))))))<br><br>kz - fixed   | Closed |   |
| 46 | SG | Typo on HS6:H1                       | NO HPA, PASSWORD SET<br>kz - fixed  | Closed |   |
| 47 | WD | Change text on HS6b:H3               | S/B HS6b:HS3  | Closed | JC: Changed to HS6:HS3 to match the diagram           |
| 48 | WD | Clarify text on HS6b:HS6             | When the device receives a hardware reset (pin1 or COMRESET)<br><br>This should probably be a global change. It does not differentiate from SRST.<br><br>kz - should be global change or normative section.<br>Change to: When the device receive a hardware reset. | Closed | JC Changed: When the device receive a hardware reset. |
| 49 | WD | Editing on HS6eHS6                   | S/B HS6e:HS6  | Closed |   |
| 50 | WD | Editing on textHES1c:HES1            | Change EXT to Extended  | Closed | JC Changed: Add EXT on the HES1:HES2                  |
| 51 | WD | HES3 text                            | Add HES5 to the states<br>Needs HES5<br><br>kz - fixed  | Closed |   |
| 52 | WD | Clarify text on HES4                 | Too vague   | Open   |   |
| 53 | WD | Typo on text HES4a:HES4              | Remove EXT  | Closed | JC made the change                                    |
| 54 | WD | Clarify text on HES5                 | Too vague   | Open   |   |

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|    |          |  | Need some details...  |        |   |
| 55 | SG       | Clarify text on HES6:H1                              | NO HPA, PASSWORD SET<br>kz - fixed  | Closed |   |
| 56 | WD       | Clarify text on HL1e:HL1                             | and abort the command<br>kz - fixed.<br>accepted  | Closed |   |
| 57 | WD       | Clarify text on HL2:HS3                              | S/B HS3 HPA SET. This is correct in the diagram<br>accepted   | Closed |   |
| 58 | WD       | Clarify text on HL2:HS3                              | Change non-volatile 1 to non-volatile 2   | Closed |   |
| 59 | WD       | Clarify HL4a:HL4 text                                | SET MAX FREEZE LOCK S/B added to tis list<br>kz - fixed.  | Closed |   |
| 60 | WD       | Clarify text on HEL1                                 | This appears to be a cut and paste. There are many HL's that should probably be HEL<br>kz - fixed   | Closed |   |
| 61 | WD       | Clarify text HES4 state on HEL1                      | Missing state name<br>kz - fixed<br>also fixed for HL1  | Closed |   |
| 62 | WD       | Clarify text on HEL2:HES3                            | HES3 - Unlocked<br>kz - fixed<br>Volatile 1 S/B 2<br>kz - fixed   | Closed | JC Change: Removed duplicated words.              |
| 63 | WD       | Clarify text on HEL2:HES5                            | Global: Cut and paste appears to have left a few HS's where they should be HES's<br>kz - fixed<br>Will fix throughout   | Closed |   |
| 64 | WD       | Clarify text on HEL4a:HEL4                           | Need to add SET MAX FREEZE LOCK<br>kz - fixed   | Closed |   |
| 65 | WD       | Clarify text on HE4e:HL4                             | HEL4c:HEL4<br>kz - fixed<br>accepted  | Closed | Changed to HEL4a to abort the SET MAX ADDRESS EXT |
| 66 | SG<br>2b | Add new subclause which describes the power-on state | In the general description of the feature set, please insert a new subclause which describes the power-on state<br>* no password is set<br>* HPA is not locked<br>* An HPA only exists if prior to the power cycle, there was a non-volatile SET MAX ADDRESS or SET MAX | Open   |   |

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|    |          |   | <p>ADDRESS EXT<br/>executed with a size &lt; 'Native Max'<br/>* State diagram states may only be:<br/>H0 or HS3 or HES3</p> <p>not fixed (out of the scope) - must be<br/><b>included in the normative part</b> of the<br/>document.</p>  |      |  |
| 67 | SG<br>2d | Clarify volatile settings                 | <p>In the general feature description,<br/>indicate that when SET MAX ADDRESS<br/>(volatile)<br/>and SET MAX ADDRESS EXT (volatile)<br/>are allowed, there is no limit to the<br/>number of times a volatile SET MAX<br/>ADDRESS or SET MAX ADDRESS<br/>EXT<br/>may be executed.</p> <p>not fixed (out of the scope) - must be<br/><b>included in the normative part</b> of the<br/>document.</p>   | Open |  |
| 68 | SG<br>2e | Clarify state diagram                     | <p>When the state diagram says<br/>SET MAX ADDRESS (Volatile)<br/>SET MAX ADDRESS (Non-Volatile)<br/>etc.<br/>It appears that this only applies if the<br/>setmax value is &lt; '<b>NativeMax</b>'<br/>Is this true ? If so, the state diagram,<br/>and supporting text should indicate<br/>such.</p> <p>Not fixed - see comment above.</p>   | Open |  |
| 69 | SG<br>2f | Clarify Hard Reset and<br>SSP             | <p>(Any state transition involving Hardware<br/>Reset)<br/>(This is a SATAIO issue, not a T13<br/>issue):<br/>SATAIO software settings preservation<br/>says that the "The maximum LBA<br/>specified in<br/>SET ADDRESS MAX or SET<br/>ADDRESS MAX EXT" is to be<br/>preserved.<br/>But it says nothing about whether or not<br/>the Password or Lock state shall be<br/>preserved<br/>or not.<br/>Please consider bringing this to the<br/>SATAIO 'Digital' working group.</p> <p>Not fixed (out of scope) - owner must be<br/>assigned.</p> | Open |  |
| 70 | SG<br>2g | Clarify IDENTIFY 85 bit<br>10 in the text | <p>The state diagrams do not indicate that<br/>any changes take place for<br/>(word 85, bit 10) in IDENTIFY DEVICE<br/>or IDENTIFY PACKET DEVICE.</p>   | Open |  |

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|    |                |                                   | <p>1) Please indicate in the entry descriptions for states H0 or H1 that (word 85, bit 10) in IDENTIFY DEVICE or IDENTIFY PACKET DEVICE shall be cleared to zero when the HPA becomes 'open'.</p> <p>2) Please indicate in the entry descriptions for states (HS1, HS2, HS3, and others) that (word 85, bit 10) in IDENTIFY DEVICE or IDENTIFY PACKET DEVICE shall be set to one when the HPA becomes 'set'</p> <p>Fixed. (not yet)</p>   |                           |  |
| 71 | SG<br>2h       | Clarify IDENTIFY 86 bit 8         | <p>The state diagrams do not indicate that any changes take place for (word 86, bit 8) in IDENTIFY DEVICE or IDENTIFY PACKET DEVICE. Subclause 4.91 indicates when it should be set to one, but not when it is to be cleared</p> <p>1) Please indicate in the entry descriptions for states ( H1, HS4, HS5, HS6,HES4, HES5,and HES6) that (word 86, bit 8) in IDENTIFY DEVICE or IDENTIFY PACKET DEVICE shall be set to one when the password is set</p> <p>2) Please indicate in the entry descriptions for states (H0, HS1, HS2, HS3, HES1, HES2, HES3) that (word 86, bit 8) in IDENTIFY DEVICE or IDENTIFY PACKET DEVICE shall be cleared to zero when there is no password</p> <p>Fixed. (not yet)</p> | Open                      |  |
| 72 | SG<br>2i       | Change reference to HDD to device | <p>state H0<br/>Please remove any references to 'disk drives' or HDD.<br/>This command set may be applicable to non-HDD devices as well, and I don't want a reader thinking that the feature set restricts against that usage.</p> <p>Fixed.</p>  | Closed                    |  |
| 73 | WD<br>SG<br>3a | Clarify HS4a:HS1 Diagram          | <p>WD<br/>S/B HS4:H1. This leads to the password being kept and the HPA being cleared. This follows the ATA7 way but leads to inconsistent behavior. See</p>  | WD: Open<br>SG:<br>Closed |  |

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|----|---------|------------------------------------|--|--------|--|
|    |         |                                    | <p>HL1b:HL1</p> <p>kz – fixed</p> <p>SG</p> <p>Transition HS4a:HS1 (in state diagram and text)<br/>(in response to a hard reset)<br/>a) currently says "... shall transition to HS1: HPA SET (Volatile) No password set<br/>I think it should say, instead:<br/>"... shall transition to H1: No HPA, Password Set state"</p> <p>kz – fixed</p> |        |  |
| 74 | SG<br>4 | Clarify HS4a:HS1 Diagram           | <p>Transition HS4a:HS1 (in state diagram and text)<br/>(in response to a hard reset)<br/>a) currently says "... shall transition to HS1: HPA SET (Volatile) No password set<br/>I think it should say, instead:<br/>"... shall transition to H1: No HPA, Password Set state"</p> <p>kz – fixed</p>   | Closed |  |
| 75 | SG<br>5 | Clarify HS6:H1 and HES6:H1 Diagram | <p>Transition HES6:H1<br/>Transition HS6:H1<br/>currently says "... shall transition to H1: No HPA state<br/>I think it should say, instead:<br/>"... shall transition to H1: No HPA, Password Set state"</p> <p>Fixed</p>   | Closed |  |
|    |         |                                    |  |        |  |
|    |         |                                    |  |        |  |