



Read Long Write Long

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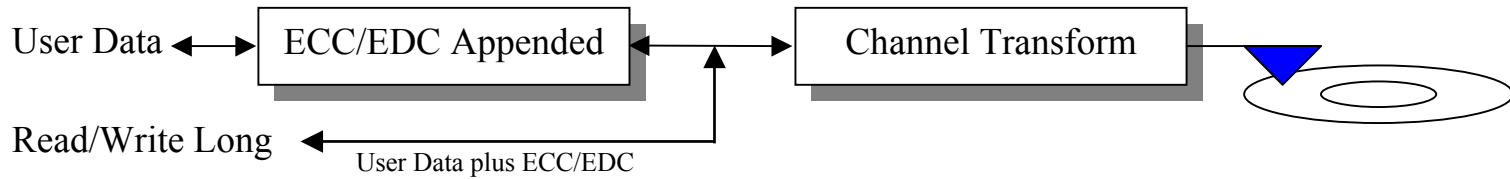


Read Long / Write Long Proposal

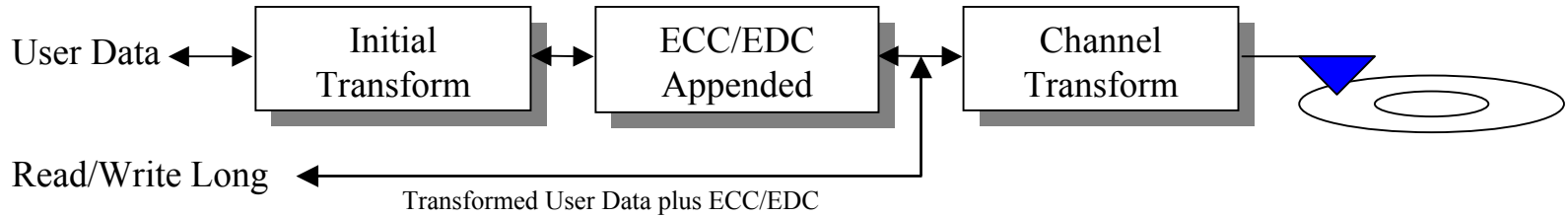
"The data passed during the READ LONG command is vendor-specific, but shall include the user data, any protection information, and any additional information (e.g., ECC bytes) recorded on the medium. The data passed shall represent the point in the device's data path that is operated on by ECC, and therefore may be a uniquely transformed version of the user data returned by a READ command. The most recent data written, or to be written, in the addressed logical block shall be returned."

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Previous Standard Usage



New / Potential Standard Usage



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Intent of the Read and Write Long Commands:

- Return all of the information operated on by the ECC for a Logical Block, including (a unique form of) user data, ECC and EDC symbols.
- Potentially corrupt a portion of that information.
- Write the corrupted information out to the media.
- Test the device's response to the corruption with normal Read Commands, specifically the ECC's ability to correct or fail to correct, verifying checking for mismatches.

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Justification for the proposal:

- Complex functionality is added in the data path between the user interface and the ECC block.
- The added block uniquely transforms user data.
- The “Long” commands continue to operate in the domain of the EDAC block, fully capable of testing the capability, performance and miscorrection limit of the EDAC system.
- Current software will operate transparently on the proposed format.

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Why not operate on the non-transformed user data along with transformed ECC/EDC information?

- That data would not accurately represent the information as operated on by the EDAC system.
- Errors inserted would be further corrupted by the transform, resulting in an unknown extent (length/position) of errors at the the point of interest, the EDAC block.
- The standard software presently in use may not function.

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Seagate represents that the spec as currently written neither precludes nor condones using a transformed version of the user data.

This proposal is intended to *clarify* that either the original format or a transformed version of the user data is acceptable.