IEEE Standards Interpretations for IEEE Std 1003.1b™-1993 IEEE Standard for Information Technology - Portable Operating System Interfaces (POSIX®) - Part 1: System Application Program Interface (API) - Amendment 1: Realtime Extension [C language]

Interpretation Request #9
Topic: _POSIX_PRIORITIZED_IO part 1 **Relevant Sections:** 6.7.1.1, Page 152-153, Lines 729-732 **Classification:** (to be assigned)

Regarding the option identified by {_POSIX_PRIORITIZED_IO}, the statement says "When prioritized asynchronous I/O requests to the same file are blocked waiting for a resource required for that I/O operation, the higher-priority I/O requests shall be granted the resource before lower-priority I/O requests are granted the resource." The statement is ambiguous with regard to the word "resource". Are the resources (to be considered) ONLY the resources managed by the OS implementation? Once an output request, for example, has been passed from the OS to a smart controller or device, is that output considered completed as far as async I/O concerned? Is the smart controller then permitted to re-order actual writes to a physical device without the knowledge of the OS (which claims to support the Prioritized I/O option)? Assuming that the interpretation answers "yes" to the above questions (which are all logically equivalent questions), I suggest that the semantics of the Prioritized I/O option be clarified to indicate that the "resource" referenced by this sentence is a resource for which contention is managed by the OS implementation, and not resources invisible to the OS implementation.

Interpretation Response
The standard is clear. On page 152 lines 723-727 it states that for character special files the requests are processed in FIFO order by the underlying device and for any other type, the order of processing is unspecified.

Rationale for Interpretation
None.