

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

Copyright © 1996 by the Institute of Electrical and Electronics Engineers, Inc. 3 Park Avenue New York, New York 10016-5997 USA All Rights Reserved.

Interpretations are issued to explain and clarify the intent of a standard and **do not** constitute an alteration to the original standard. In addition, interpretations are not intended to supply consulting information. Permission is hereby granted to download and print one copy of this document. Individuals seeking permission to reproduce and/or distribute this document in its entirety or portions of this document must contact the IEEE Standards Department for the appropriate license. Use of the information contained in this document is at your own risk.

IEEE Standards Department Copyrights and Permissions 445 Hoes Lane, Piscataway, New Jersey 08855-1331, USA

Interpretation Request #4

Topic: mmap **Relevant Sections:** 12.2.1 **Classification:** (to be assigned)

I would like to request a formal interpretation on IEEE Std 1003.1b-1993. IEEE Std 1003.1-1990 defines file times (access time and modification time), and specifies in detail how functions in that standard effect the file times. IEEE Std 1003.1b-1993 adds the mmap() function (12.2.1) as a completely new way to access a regular file. However, It does not seem to specify how accesses to a file via mmap() affect the file times. To be specific, when shall, and when may, the implementation mark st_atime and st_mtime for update in each of the following cases: (1) mmap() is called with PROT_READ. (2) mmap() is called with MAP_SHARED and PROT_WRITE. (3) Application modifies a page previous mapped with MAP_SHARED, PROT_WRITE. (4) Application references a page mapped MAP_PRIVATE that has not been modified by the process. (Keep in mind that the process might be seeing data that has changed since the mmap().) (5) Application modifies a page mapped MAP_PRIVATE, PROT_WRITE. (6) Application references a page mapped MAP_PRIVATE that was previously modified by the process. (7) msync() (12.2.4) is called on pages mapped with mmap().

Interpretation Response

The standard is silent on this matter. The committee notes that this is inconsistent with page 27 line 626 which states generally that it should be specified and this matter is being referred to the sponsor for consideration.

Rationale for Interpretation

None.