

The opinion in support of the decision being entered today was not written for publication and is not binding precedent of the Board.

Paper No. 17

UNITED STATES PATENT AND TRADEMARK OFFICE

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BEFORE THE BOARD OF PATENT APPEALS  
AND INTERFERENCES

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Ex parte RODNEY A. DEKONING,  
GERALD J. FREDIN,  
and  
DONALD R. HUMLICEK

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Appeal No. 2001-0956  
Application No. 08/994,250

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ON BRIEF

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Before HAIRSTON, KRASS, and RUGGIERO, Administrative Patent Judges.

HAIRSTON, Administrative Patent Judge.

DECISION ON APPEAL

This is an appeal from the final rejection of claims 1 through 50.

The disclosed invention relates to a controller with cache memory in a Redundant Arrays of Inexpensive Disks (RAID) system, and to the use of a portion of the cache memory as a virtual solid state disk storage device.

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Claim 1 is illustrative of the claimed invention, and it reads as follows:

1. An apparatus in a primary RAID disk array controller including a plurality of disks comprising:

a first cache memory partition operable for caching;  
and

a second cache memory partition operable as a virtual solid state disk storage device.

The references relied on by the examiner are:

Matsumoto et al. (Matsumoto)	5,517,632	May 14, 1996
DeKoning et al. (DeKoning)	5,761,705	Jun. 2, 1998
		(filed Apr. 4, 1996)
Loechel et al. (Loechel)	5,895,485	Apr. 20, 1999
		(filed Feb. 24, 1997)

Nelson et al. (Nelson), "Caching in the Sprite Network File System," ACM Transactions on Computer Systems, 6(1), pp. 134-54 (Feb. 1988).

Claims 1 through 30 and 38 through 50 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Matsumoto in view of DeKoning or Loechel.

Claims 31 through 37 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Matsumoto in view of either DeKoning or Loechel and in further view of Nelson.

Reference is made to the brief (paper number 14) and the answer (paper number 15) for the respective positions of the appellants and the examiner.

OPINION

We have carefully considered the entire record before us, and we will reverse all of the rejections of record.

Appellants and the examiner all agree that the solid-state disk 25 in Matsumoto (Figure 15) is a check disk used in a RAID system, and that the solid-state disk is not part of the storage controller's cache memory (brief, page 10, answer, page 5). According to the examiner (answer, page 5), DeKoning and Loechel both disclose partitioned non-volatile cache memory in a plurality of controllers. Although Matsumoto does not disclose a virtual solid-state disk as part of a cache memory, and the examiner acknowledges (answer, page 6) that DeKoning and Loechel do not show that "the partitioned solid state memory in the RDAC . . . may be further partitioned to be used as a solid stated [sic, state] disk storage device . . . ," the examiner nevertheless concludes (answer, page 7) that it would have been obvious to one of ordinary skill in the art "to have modified the DeKoning reference in view of the Matsumoto reference to include a solid state disk drive to improve access times."

Appellants argue (brief, page 12) that "Matsumoto fails to teach or suggest incorporating solid state disk 25 in the cache memory of the array controller 1 and there is no apparent reason

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why one skilled in the art would be motivated to do so . . . ,”  
and that “although DeKoning and Loechel disclose partitioned  
cache memory, neither reference even remotely hints at  
partitioning the cache memory for providing a virtual solid state  
disk.” We agree with appellants’ arguments. We likewise agree  
with the appellants’ argument (brief, pages 12 and 13) that the  
examiner has resorted to impermissible hindsight by incorporating  
appellants’ disclosed and claimed invention into the obviousness  
reasoning. Thus, the obviousness rejection of claims 1 through  
30 and 38 through 50 is reversed.

The obviousness rejection of claims 31 through 37 is  
reversed because the teachings of Nelson do not cure the noted  
shortcomings in the teachings of Matsumoto, DeKoning and Loechel.

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DECISION

The decision of the examiner rejecting claims 1 through  
50 under 35 U.S.C. § 103(a) is reversed.

REVERSED

KENNETH W. HAIRSTON	)	
Administrative Patent Judge	)	
	)	
	)	
	)	BOARD OF PATENT
ERROL A. KRASS	)	APPEALS AND
Administrative Patent Judge	)	INTERFERENCES
	)	
	)	
	)	
JOSEPH F. RUGGIERO	)	
Administrative Patent Judge	)	

KWH:hh

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