United States Court of Appeals for the Federal Circuit

04-1422, -1610

SANDISK CORPORATION,

Plaintiff-Appellant,

v.

MEMOREX PRODUCTS, INC. (formerly doing business as Memtec Products, Inc.),

Defendant-Appellee,

and

PRETEC ELECTRONICS CORPORATION,

Defendant-Appellee,

and

POWER QUOTIENT INTERNATIONAL CO., LTD.,

Defendant,

and

RITEK CORPORATION,

Defendant-Appellee.

Donald R. Dunner, Finnegan, Henderson, Farabow, Garrett & Dunner, L.L.P., of Washington, DC, argued for plaintiff-appellant. With him on the brief were Thomas H. Jenkins, of Washington, DC, and Erik R. Puknys, of Palo Alto, California. Of counsel on the brief were Michael A. Ladra and James C. Yoon, Wilson Sonsini Goodrich & Rosati P.C., of Palo Alto, California; and Michael A. Berta and Ariana M. Chung-Han, of San Francisco, California.

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Ronald C. Finley, Mount & Stoelker, P.C., of San Jose, California, argued for defendant-appellee Pretec Electronics Corporation. With him on the brief were Daniel S. Mount, Alfredo A. Bismonte, and Justin T. Beck.

Alan D. Smith, Fish & Richardson P.C., of Boston, Massachusetts, argued for defendant-appellee Ritek Corporation. With him on the brief was Charles H. Sanders.

Appealed from: United States District Court for the Northern District of California

Chief Judge Vaughn R. Walker

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DECIDED: July 8, 2005

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Before RADER, GAJARSA, and DYK, <u>Circuit Judges</u>.

GAJARSA, <u>Circuit Judge</u>.

SanDisk appeals the district court's judgment of no infringement in favor of Memorex, Pretec, and Ritek. The district court granted summary judgment that various Flash memory devices made by these defendants did not infringe independent claims 1 or 10 – or various claims depending therefrom – in SanDisk's U.S. Patent No. 5,602,987 to Flash EEprom systems. The trial court ruled that the claims at bar did not contemplate or allow for a Flash memory system in which some EEprom memory cells are grouped into sectors that are not partitioned into user and overhead data portions. As the record showed that the defendants' products contained sectors of memory cells lacking such partitions, the trial court determined that these defendants could not infringe. We conclude that the trial court misread the claims at issue, and erred in finding a prosecution disclaimer in support of its reading. We further reject the contention that judicial estoppel forecloses SanDisk's claim construction arguments on appeal. Thus, we vacate the judgment and remand for further proceedings.

I.

A.

SanDisk Corp. ("SanDisk") owns U.S. Patent No. 5,602,987 to Flash EEprom systems ("the '987 patent").[1] The '987 patent issued on February 11, 1997, and describes methods for using EEproms as non-volatile solid state computer memory. A non-volatile memory retains its contents even after power is shut off. This "flash memory" has many applications, including the memory used in digital cameras, PDAs, memory sticks or MP3 players.

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[1] Electrically erasable programmable read only memory (EEprom).

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Flash EEproms can sustain only a limited number of writes and erases before they fail. The '987 system and methods include innovations directed at improving flash memory performance and extending EEprom life. The patent focuses, in particular, on improving the memory system architecture over the prior art. The memory architecture generally concerns how the memory system solves the problem of storing or retrieving specific information from the memory cells. See '987 patent, col. 5, ll. 4-21. If the architecture can be designed to minimize the number of times each EEprom memory cell is erased and rewritten, then that solution can extend the useful life of the integrated circuit. If the architecture allows for faster operations, then the EEprom performance will improve.

The '987 patent addresses these issues in at least two ways relevant to this appeal. First, it introduces a multi-sector erase function. In earlier systems either every memory cell in an EEprom would be written or erased in one operation, or only a single "sector" could be erased in one operation. See '987 patent, col. 4, ll. 46-63. Where not all the information was to be erased, systems that operated only on the entire chip had to read that information out, store it in a temporary location (typically a different, volatile memory or RAM), erase the entire chip, and then write the information back into the EEprom memory. Id. The other approach, operating sequentially on individual sectors, proved time-consuming.

The '987 patent describes a different way of organizing the memory storage, and in particular arranges memory cells into "sectors" akin to the physical "sectors" used for storage on magnetic disk drives. The '987 patent allows the operator to select multiple sectors for simultaneous erase. The defining feature of the "sector" of memory cells is

that all cells within the sector are erased together. See '987 patent, col. 1, ll. 65-66

("[A]n array of Flash EEprom cells on a chip is organized into sectors such that all cells

within each sector are erasable at once."); id. at col. 5, ll. 9-11 ("The memory in each

Flash EEprom chip is partitioned into sectors where all memory cells within a sector are

erasable together."). Put differently, the "sector" is the "basic unit of erase." The '987

patent illustrates this architecture, as implemented on a single EEprom or integrated
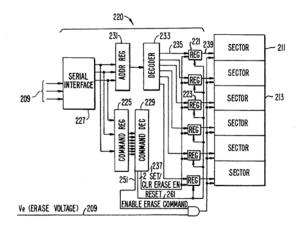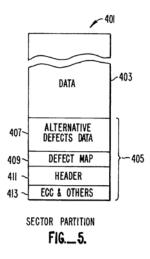
circuit (chip), in Fig. 3A:

FIG.__3A.

Although the block diagram in Fig. 3A illustrates the description of multiple

sectors on a single chip, the multi-sector erase feature is not limited to individual

EEproms. As the '987 patent notes, "the selected sectors [for erase] may be confined

to one EEprom chip or be distributed among several chips in a system. The sectors

that were selected will all be erased together." '987 patent, col. 5, ll. 16-19. Because

this allows more intelligent use of the memory, avoiding needless erases, it improves

performance and extends the operational life of the EEproms. As the patent explains,

"[t]his is faster and more efficient than prior art schemes where all the sectors must be

erased every time or only one sector at a time can be erased. The invention further

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allows any combination of sectors selected for erase to be deselected and prevented from further erasing during the erase operation." '987 patent, col. 2, ll. 4-7.

Second, the architecture described in the '987 patent further requires "partitioning" the "sectors" into at least two components – one for "user data," and a second for "overhead." "User data" means the information that the processor stores or on which it operates. "Overhead data" refers to administrative information used by the memory controller, such as data address information (typically the information included in a header), memory cell defect maps, error correction code, and so on. The memory allocation in a "typical" sector is illustrated in Fig. 5:

SECTOR PARTITION

FIG.__5.

SanDisk argues that this feature "improves the reliability of Flash EEprom memory systems." The written description explains,

> The memory architecture has a typical sector 401 organized into a data portion 403 and a spare (or shadow) portion 405. The data portion 403 is memory space available to the user. The spare portion 405 is further organized into an alternative defects data area 407, a defect map area 409, a header area 411 and an ECC and others area 413. These areas contain information that could be used by the controller to handle the defects and other overhead information such as headers and ECC.

'987 patent, col. 8, ll. 43-50.

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B.

In 1998 SanDisk accused Lexar Media Inc. ("Lexar") of infringing claims 1 and 10 of the '987 patent. The action was assigned to Judge Breyer in the Northern District of California. On March 4, 1999, Judge Breyer issued a claim construction order interpreting the "user data and overhead data portions." He expressly limited the order to "those terms and issue[s] discussed by both parties in their memoranda and at the claim construction hearing." SanDisk Corp. v. Lexar Media, Inc., No. C 98-01115 CRB, 1999 WL 129512, at *2 (N.D. Cal. Mar. 4, 1999).

With that caveat, Judge Breyer ruled that the partitioning and user data / over head data limitations meant that

> Each non-volatile memory sector must have at least one user data portion and one overhead data portion, but is not limited to only one data user portion and only one overhead data portion.

Id. at *3. SanDisk eventually obtained a judgment of infringement against Lexar.

C.

In October 2001, SanDisk sued four Flash memory system manufacturers: Memorex Products, Inc. ("Memorex"); Pretec Electronics Corp. ("Pretec"); Ritek Corp. ("Ritek"); and Power Quotient International Co., Ltd., for infringing the '987 patent, claims 1 and 10 (and various dependent claims). In due course Power Quotient was dismissed from suit.

SanDisk sought a preliminary injunction based on Judge Breyer's claim construction. The defendants opposed, and the trial court denied the motion. In assessing the partitioning limitation, the trial court heavily relied on the prosecution history:

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SanDisk specifically limited its claim to include only those devices in which each sector within a memory cell array contains both overhead and user data. SanDisk cannot now argue that only some of the sectors of a memory cell array need to contain user data and overhead data.

On September 30, 2003, the district court construed claims 1 and 10 to require that every cell in the memory device be grouped into a sector, and every sector be partitioned into user and overhead data portions. See SanDisk Corp. v. Memorex Prods., Inc., No. C-01-4063 VRW, slip. op. at 34 (N.D. Cal. Apr. 20, 2004) ("Pretec SJ Order") ("[T]he court's claim construction requires all sectors within the memory array to be partitioned.").

Although the trial court's claim construction considered the claim language and the written description, the court relied primarily on a finding of prosecution disclaimer. Id. at 28 ("[T]he court finds that SanDisk clearly and unmistakably disclaimed coverage of systems in which only some of the sectors in the array were partitioned into at least user data and overhead portions."); see also id. at 16-29.

With that claim construction the trial court granted Ritek summary judgment of non-infringement, because Ritek had presented evidence that their products include some sectors that are not partitioned.

Pretec and Memorex moved for summary judgment on the same ground. The court granted Pretec's motion on April 20, 2004, and Memorex's motion on May 13, 2004, after each party supplemented the record with evidence about their devices.

The trial court entered judgment of no infringement. SanDisk timely appealed. Ritek and Pretec separately oppose. Memorex joins in Pretec's opposition. Pretec adopts Ritek's arguments in opposition by reference, but did not file a separate joinder. The court has jurisdiction under 28 U.S.C. § 1295(a)(1) (2000).

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II.

The court reviews <u>de novo</u> the trial court's summary judgment of no infringement.

<u>Hilgraeve Corp. v. McAfee Assocs., Inc.</u>, 224 F.3d 1349, 1352 (Fed. Cir. 2000).

Summary judgment is proper only if the movants are entitled to judgment as a matter of

law, and no genuine issue of material fact requires a determination by a fact-finder. <u>See</u>

Fed. R. Civ. P. 56(c); <u>Anderson v. Liberty Lobby, Inc.</u>, 477 U.S. 242, 250 (1986). In this

case there are no disputed material facts at issue. The judgment turns solely on claim

construction, which the court reviews <u>de novo</u>. <u>See</u> <u>Cybor Corp. v. FAS Techs., Inc.</u>,

138 F.3d 1448, 1456 (Fed. Cir. 1998) (en banc).

A.

The court's claim construction ascribes claim terms the meaning they would be

given by persons of ordinary skill in the relevant art at the time of the invention. <u>See</u> 35

U.S.C. § 112; <u>Innova/Pure Water, Inc. v. Safari Water Filtration Sys., Inc.</u>, 381 F.3d

1111, 1116 (Fed. Cir. 2004). Claim construction begins with the language of the

asserted claims. <u>See</u> <u>Vitronics Corp. v. Conceptronic, Inc.</u>, 90 F.3d 1576, 1582 (Fed.

Cir. 1996). The relevant claim language in this case appears identically in independent

claims 1 and 10. It provides,

> A method of operating a computer system <u>including</u> a processor and <u>a</u>
> <u>memory system</u>, wherein <u>the memory system includes an array of non-</u>
> <u>volatile floating gate memory cells partitioned into a plurality of sectors</u> that
> individually include a distinct group of said array of memory cells that are
> erasable together as a unit, comprising:
>
> providing said memory array and a memory controller within a card that is
> removably connectable to the computer system, said controller being
> connectable to said processor for controlling operation of the array when
> the card is connected to the computer system,

> partitioning the memory cells within the individual sectors into at least a
> user data portion and an overhead portion . . . .

'987 patent, col. 16, ll. 24-37 (claim 1, emphases added); see also id. at col. 17, ll. 30-44

(claim 10).   Although SanDisk also asserted claims 2, 5, 6, 12, and 15 of the '987

patent, each depends from claim 1 or 10 and incorporates the forgoing limitations in

relevant part.   The parties do not dispute, and the trial court correctly noted, that the

preamble recited above is limiting.[2]

Reviewing the partitioning requirement, the trial court concluded that claim 1 and

claim 10 require every Flash EEprom memory cell within an actual device to be grouped

into a sector that is partitioned into user and overhead data portions.   SanDisk argues

that this construction misreads the plain language of the claim.   The argument proceeds

on two levels.   First, by its plain language, claims 1 and 10 require only that the claimed

memory system contain some memory cells, grouped into sectors, partitioned into user

and overhead data portions.   Nothing in the claims precludes additional memory cell

configurations, which need not contain such partitioned sectors.   Second, claims 1 and

10 are self-evidently drawn to claimed methods.   It is fully consistent with practicing the

claimed invention to make additional, unclaimed use of Flash EEprom memory cells, so

long as each limitation is satisfied.   We agree.

The invention is claimed using non-restrictive terminology.   The memory system

"includes" an array of "non-volatile floating gate memory cells" which are "partitioned

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[2]   That is, because "when read in the context of the entire claim" the
preamble "recites limitations of the claim . . . or . . . is 'necessary to give life, meaning,
and vitality' to" claims 1 and 10, the trial court properly treated the language as limiting.
Pitney Bowes, Inc. v. Hewlett-Packard Co., 182 F.3d 1298, 1305 (Fed. Cir. 1999).

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into a plurality of sectors." The claimed method requires "partitioning the memory cells within the individual sectors into at least a user data portion and an overhead portion." As a patent law term of art, "includes" means "comprising." See Amgen Inc. v. Hoechst Marion Roussel, Inc., 314 F.3d 1313, 1344-45 (Fed. Cir. 2003); Hewlett-Packard Co. v. Repeat-O-Type Stencil Mfg. Corp., Inc., 123 F.3d 1445, 1451 (Fed. Cir. 1997). Neither includes, nor comprising, forecloses additional elements that need not satisfy the stated claim limitations. Nor does the choice of articles—"an array" of memory cells, "a plurality of sectors," "said array of memory cells," "the memory cells," or "the individual sectors"—compel a different conclusion. These groupings of Flash EEprom memory cells provide an antecedent basis for various steps of the claimed method, but nothing in their recitation excludes other configurations of memory cells on a physical device that, in some part, practices the claimed methods. Thus, nothing in the language of claims 1 or 10 prevents the use of Flash EEproms containing cells that are not grouped into partitioned sectors.

B.

SanDisk further argues that the '987 patent specification is inconsistent with the trial court's claim construction because, among other reasons, it excludes at least two preferred embodiments: one involving storing a sector defect map in Flash EEprom memory cells, and another involving using Flash EEprom cells as a write memory cache. As explained below, the court need only consider the sector defect map to conclude that SanDisk is correct.

The court must always read the claims in view of the full specification. See Vitronics, 90 F.3d at 1582. A claim construction that excludes a preferred embodiment,

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moreover, "is rarely, if ever, correct." Vitronics, 90 F.3d at 1583; see also C.R. Bard, Inc. v. U.S. Surgical Corp., 388 F.3d 858, 865 (Fed. Cir. 2004). The '987 patent specification describes an embodiment involving a sector defect map, which, in brief, contains information mapping defective memory sectors into good ones. See '987 patent, col. 11, ll. 57-60. Although the defect map may be stored in spare, defect-free portions of the affected sector, at some point there will be too many defects to keep the defect map in that location. "Thus, it is preferable in another embodiment to locate the sector map in another memory maintained by the controller. The memory may be located in the controller hardware or be part of the Flash EEprom memory." '987 patent, col. 11, l. 65 – col. 12, l. 1 (emphasis added). SanDisk argues that because the sector defect map would contain only overhead data, the portions of the Flash EEprom memory used in the preferred embodiment would not be partitioned into user data and overhead data portions as required by according claims 1 or 10. As the district court's claim construction would foreclose that possibility, the claim construction must be wrong.

The trial court rejected this argument. It ruled, instead,

> The fact that the sector defect map contains only overhead data does not prove that the embodiment contemplates sectors with only overhead data. Although the sector defect map is composed entirely of overhead data, the court finds that the sector defect map is located entirely within the overhead portion of a single sector.

We find this reasoning misplaced.

In its brief to this court Ritek concedes that the sector defect map could be located in "a part of memory outside the array of sectors partitioned into a user data and overhead portions, i.e., in an unsectored part of the memory." Ritek Br. at 43-44. If

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Ritek is correct, then the trial court's claim construction must be wrong. The claims must allow, instead, for Flash EEprom memory cells that are not sectored, or not partitioned, according to the claimed methods. But since Ritek concedes this point, and both Pretec and Memorex join Ritek's argument, there is no dispute left for the court to resolve. In sum, the trial court's speculative treatment of the preferred embodiment is unsupported by the patent specification, not grounded in the record, and contrary to the reading suggested by all parties. We conclude that SanDisk is correct in faulting the trial court's claim construction.

Ritek contends that the only sectors described in the '987 patent specification are partitioned as illustrated in Fig. 5. Thus, Ritek concludes, the invention is directed only to partitioned sectors. We find this reasoning misplaced for at least two reasons. First, as noted above the language of claims 1 and 10 does not preclude other, unclaimed organizations of Flash EEprom memory cells. Thus, even if the court concluded that Fig. 5 shows the only partitioning consistent with the claimed methods that would not preclude use of other organizations in the memory system. Second, it is axiomatic that without more the court will not limit claim terms to a preferred embodiment described in the specification. Laitram Corp. v. Cambridge Wire Cloth Co., 863 F.2d 855, 865 (Fed. Cir. 1988) ("References to a preferred embodiment, such as those often present in a specification, are not claim limitations."). The '987 patent specification plainly describes the sector partitioning illustrated at Fig. 5 as a "typical" sector organization. See '987 patent, col. 8, ll. 43-45. It is a preferred embodiment of the sector organization claimed in the claim 1 and 10 methods. In short, Ritek's argument is misplaced. The specification does not contradict the plain meaning of claims 1 and 10.

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C.

The prosecution history does not compel a contrary result. The court must always consult the prosecution history, when offered in evidence, to determine if the inventor surrendered disputed claim coverage. See Medrad, Inc. v. MRI Devices Corp., 401 F.3d 1313, 1319 (Fed. Cir. 2005) ("We cannot look at the ordinary meaning of the term ... in a vacuum. Rather, we must look at the ordinary meaning in the context of the written description and the prosecution history.").

After consulting the prosecution history, the trial court ruled that SanDisk disclaimed any method or device in which Flash EEprom memory cells were not grouped into partitioned sectors. Ritek urges the court to affirm this analysis. SanDisk, however, maintains that the trial court erred in this conclusion. Instead, SanDisk argues, nothing in the prosecution history provides a clear and unmistakable disclaimer as found by the district court. On reviewing the relevant arguments to the examiner, we agree with SanDisk.

1.

When the patentee makes clear and unmistakable prosecution arguments limiting the meaning of a claim term in order to overcome a rejection, the courts limit the relevant claim term to exclude the disclaimed matter. See Omega Eng'g, Inc. v. Raytek Corp., 334 F.3d 1314, 1324 (Fed. Cir. 2003) ("[W]here the patentee has unequivocally disavowed a certain meaning to obtain his patent, the doctrine of prosecution disclaimer attaches and narrows the ordinary meaning of the claim congruent with the scope of the surrender."); Standard Oil Co. v. Am. Cyanamid Co., 774 F.2d 448, 452 (Fed. Cir. 1985) ("[T]he prosecution history (or file wrapper) limits the interpretation of claims so as to

exclude any interpretation that may have been disclaimed or disavowed during prosecution in order to obtain claim allowance.").

As this court has explained,

> The doctrine of prosecution disclaimer [precludes] . . . patentees from recapturing through claim interpretation specific meanings disclaimed during prosecution. See Schriber-Schroth Co. v. Cleveland Trust Co., 311 U.S. 211, 220-21 (1940) ("It is a rule of patent construction consistently observed that a claim in a patent as allowed must be read and interpreted with reference to claims that have been cancelled or rejected, and the claims allowed cannot by construction be read to cover what was thus eliminated from the patent."); Crawford v. Heysinger, 123 U.S. 589, 602-04 (1887); Goodyear Dental Vulcanite Co. v. Davis, 102 U.S. 222, 227 (1880); cf. Graham v. John Deere Co., 383 U.S. 1, 33 (1966) (ruling, in addressing the invalidity of the patents in suit, that "claims that have been narrowed in order to obtain the issuance of a patent by distinguishing the prior art cannot be sustained to cover that which was previously by limitation eliminated from the patent").

> . . . .

> As a basic principle of claim interpretation, prosecution disclaimer promotes the public notice function of the intrinsic evidence and protects the public's reliance on definitive statements made during prosecution. See Digital Biometrics, Inc. v. Identix, Inc., 149 F.3d 1335, 1347 (Fed. Cir. 1998).

Omega, 334 F.3d at 1323-24.

An ambiguous disclaimer, however, does not advance the patent's notice function or justify public reliance, and the court will not use it to limit a claim term's ordinary meaning. See id. at 1324 (collecting cases). There is no "clear and unmistakable" disclaimer if a prosecution argument is subject to more than one reasonable interpretation, one of which is consistent with a proffered meaning of the disputed term. See Golight, Inc. v. Wal-Mart Stores, Inc., 355 F.3d 1327, 1332 (Fed. Cir. 2004) (finding no disclaimer because "the statements in the prosecution history are subject to multiple reasonable interpretations, they do not constitute a clear and

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unmistakable departure from the ordinary meaning of the term [at issue]"); Cordis Corp. v. Medtronic AVE, Inc., 339 F.3d 1352, 1359 (Fed. Cir. 2003) (concluding that a statement made during prosecution "is amenable to multiple reasonable interpretations and it therefore does not constitute a clear and unmistakable surrender"). The question, therefore, is whether any of SanDisk's prosecution arguments to the examiner have no reasonable interpretation other than to disavow any memory system in which Flash EEprom memory cells are not grouped into partitioned sectors.

2.

In this case the relevant prosecution argument responded to an obviousness rejection. The '987 patent issued from application Ser. No. 174,768 ("the '768 application"). On December 7, 1995, the examiner rejected original claims 79 (which issued as claim 1) and 85 (which issued as claim 10) in the '768 application as obvious under Burke in view of Yorimoto. The examiner explained that Burke – an Australian patent, No. AU-B-22536/83 – taught a memory system including "an array of cells which are inherently partitioned into a plurality of sectors because Burke's array is to 'emulate' a magnetic disk which has sectors." As the examiner explained, Yorimoto – European patent application No. 86114972.2, Pub. No. 0 220 718 – "teaches partitioning the cells with a sector into portions, each portion is for storing a specific type of information." Rejecting claim 85 (issued claim 10), the examiner concluded,

> It would have been obvious to one having ordinary skill in the art at the time the invention was made to use Yorimoto's memory (of EEPROM type) and Yorimoto's memory cells partitioning in place of Burke's memory.

> The artisan would have been motivated to use Yorimoto's EEPROM in the place of Burke's memory because Yorimoto's EEPROM can be partitioned into sectors and Burke's emulation inherently suggests

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that the emulating memory should be able to emulate the sectors of Burke's magnetic disk.

SanDisk argued that the examiner was mistaken. In particular, SanDisk explained:

> The memory cell array is divided into sectors, with the cells within each sector being erasable together as a unit. Stored in each sector is a sectors [sic] worth of user data and some overhead information (a header) about the sector and/or about the user data stored in the sector.

(quoted at Pretec SJ Order, slip. op. at 25). Relying heavily on SanDisk's description of "each sector", the trial court concluded that SanDisk was referring to every sector on the '987 patent EEproms. Id. at 26. Ritek contends that the trial court's analysis was correct, and with this language SanDisk disclaimed its current claim construction. We disagree, and find no clear and unmistakable disclaimer in this passage.

The trial court's and Ritek's reasoning assumes its conclusion. The quoted passage begins with the proviso that "The claims are directed to a flash EEPROM system[.]" If, when viewed in context, SanDisk used this passage to describe the memory cell array – and, in particular, the claimed sector organization subject to the methods in original claims 79 and 85 – then there is no prior reason why that memory cell array or the discussion of it should be presumed to exhaust every cell on every EEprom in the "memory system" recited in the claim preambles. Given the open language in the claims, there is no reason for the court to read the prosecution argument with such a presumption in mind. Put differently, the reference to "each sector" means "each sector" subject to the claimed method, and no more. In short, SanDisk's reading of this prosecution argument is at least reasonable. Thus, focusing

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on this passage alone, there is no "clear and unmistakable surrender" within the meaning of Golight.

The trial court further reasoned that because SanDisk sought to emulate a disk drive with the claimed memory system, it followed that SanDisk intended to group every Flash EEprom memory cell into a partitioned sector. The trial court focused on the following prosecution argument, responding to the obviousness rejection of original claim 79:

> The claims in this application each define more than the desire to make a semiconductor memory system look on the host system side of the memory controller to be a disk drive. They define a way of configuring and using a semiconductor memory on the memory side of the controller in a way similar to a disk drive. Claim 79 defines a flash EEPROM system with an array that is divided into sectors of cells that are erasable together as a unit. This is not new by itself but is a particular type of memory . . . to be used to emulate a disk drive. None of the . . . cited references suggest use of such a type of memory. The only mention of an EEPROM system is by Yorimoto et al. but their embodiments appear to be generically described for use with either an EEPROM or a battery backed volatile RAM. Nothing is said by Yorimoto et al. of a flash EEPROM system that is operated with sectors of cells that are erasable together as a unit. It is the use of this type of memory that allows the memory itself to be operated very similarly to that of a disk drive, with individual sectors that store both user data and overhead data (a header for the sector). It is the operation of the flash EEPROM memory by the memory controller with the sectored and partitioned characteristics of a disk drive memory that is novel and non-obvious.

Ritek contends that the trial court correctly read this passage to disclaim the claim construction set forth above. Again, we disagree.

First, as with the last passage, this argument is directed to explicating the claimed invention. It does not purport to exclude from the "memory system" other configurations of Flash EEprom memory cells. Even though SanDisk identifies the novel invention as "operation of the flash EEPROM memory by the memory controller

with the sectored and partitioned characteristics of a disk drive memory," that statement goes to the claimed memory organization.

Second, the fact that with the claimed invention SanDisk sought to emulate a disk drive memory storage configuration does not compel the conclusion that SanDisk required every Flash EEprom memory cell in the "memory system" recited in the claims to be grouped into partitioned sectors. The trial court's reasoning, in short, relies on a false analogy. Though every memory cell on a disk drive might have a physical location in a partitioned sector, it does not follow that to "emulate" that function every memory cell in a Flash EEprom array must also be so grouped. To the contrary, the organization of memory cells in the Flash EEprom is physically limited only by the requirement of a simultaneous erase by sector; in other respects, the cells are grouped into sectors by a logical allocation. Thus, while physical organization of memory on a disk drive might require every memory cell to be placed in a partitioned sector, the physical organization of memory cells on an EEprom does not.

The prosecution history as a whole confirms this point. In an earlier passage, SanDisk argued:

> The <u>claimed memory system</u> looks to the host computer as if it was a disk drive system, similar to the goal stated in the cited Burke patent. But a significant difference is the claimed operation <u>of the flash EEPROM array</u> with many incidents of a disk system. It is divided into sectors that are operated as a unit, including overhead data (a header) as well as user data, and, in some of the claims, the overhead data is read from an addressed sector before user data is written into that sector.

(emphases added). The passage focuses on the claimed operation of the flash EEprom memory cell array, the subject of claims 1 and 10; it does not address itself to unclaimed uses of the memory cells. Moreover, according to SanDisk, that particular

EEprom configuration was not obvious from combining Burke, which emulated a disk

drive, and Yorimoto, which claimed an EEprom array:

> This is quite different from the way that semiconductor memory arrays are usually operated. . . . The present claims . . . define a disk like approach to semiconductor memory operation. The fact that the system of the Burke patent may look to the host system as a disk memory system does not mean that its array is operated in sectors, with headers, etc., as claimed. . . .

> . . . [T]he flash EEPROM system employed in the present invention, unlike typical RAMs, do have memory operations that can benefit from auxiliary information. The provision for making such information available in a header of each sector in the context of a solid state memory is part of the present invention.

> An underlying assumption made throughout the Examiner's Action is that it is <u>inherent</u> in the system of the cited Burke reference to operate its volatile RAM array with sectors, and thus obvious to include overhead data (headers) in individual sectors. This premise, and thus all the rejections based upon it, is respectfully submitted to be incorrect. Contrary to the position taken in the Examiner's Action, it is submitted that the fact that Burke's system looks to the host system as a disk drive memory does not compel this conclusion. The alleged inherent Burke disclosure upon which nearly all the grounds of rejection are based does not exist.

In other words, it was novel to organize the cells into partitioned sectors for purposes of

the claim, but the claimed purpose of emulating a disk drive did not compel sorting

every memory cell – even those not subject to the claimed method – in that fashion.

In sum, we conclude that SanDisk did not unmistakably surrender the grouping of

Flash EEprom memory cells into non-partitioned sectors. The prosecution history is

consistent with the plain meaning of claims 1 and 10, and does not compel the trial

court's contrary reading.

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D.

Ritek argues that equity requires judicially estopping SanDisk from arguing the claim construction discussed above because SanDisk argued, in earlier litigation and on preliminary injunction in this action, that claims 1 and 10 required every memory cell in the Flash EEprom memory to be grouped into partitioned sectors.[3] Thus, according to Ritek, "SanDisk should be estopped from playing fast and loose with the courts by changing the meaning of its patent claims simply because its interests have changed now that it knows how Ritek's products work." Ritek Br. at 25-26. We find this argument misplaced.

Judicial estoppel is an equitable doctrine that prevents a litigant from "perverting" the judicial process by, after urging and prevailing on a particular position in one litigation, urging a contrary position in a subsequent proceeding – or at a later phase of the same proceeding – against one who relied on the earlier position. See Hamilton v. State Farm Fire & Cas. Co., 270 F.3d 778, 782 (9th Cir. 2001); Data Gen. Corp. v. Johnson, 78 F.3d 1556, 1565 (Fed. Cir. 1996). It is within the trial court's discretion to invoke judicial estoppel and preclude an argument. Id. Here, the trial court did not apply the doctrine and the appellees ask this court, in its appellate jurisdiction, to find an estoppel.

As the Supreme Court recently explained,

Where a party assumes a certain position in a legal proceeding, and succeeds in maintaining that position, he may not thereafter, simply because his interests have changed, assume a contrary position, especially if it be to the prejudice of the party who has acquiesced in the position formerly taken by him.

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[3] Pretec adopted Ritek's arguments by reference. Memorex filed a joinder in Pretec's brief. Each appellee thus relies on Ritek's judicial estoppel argument.

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New Hampshire v. Maine, 532 U.S. 742, 749 (2001) (cit. omitted); see also id. at 749-50 (collecting cases). In New Hampshire, the Supreme Court identified several factors guiding the decision to apply judicial estoppel: (1) the party's later position must be "clearly inconsistent" with the earlier position; (2) the party must have succeeded in persuading a court to adopt the earlier position in the earlier proceeding; and (3) the courts consider "whether the party seeking to assert an inconsistent position would derive an unfair advantage or impose an unfair detriment on the opposing party if not estopped." Id. at 751. These factors, while not exclusive, must guide the court's application of its equitable powers. Id.

Ritek's judicial estoppel argument loses force when tested against these criteria. First, in the Lexar litigation, SanDisk never advanced a claim construction that was "clearly inconsistent" with the partitioning analysis discussed above. The trial court in Lexar therefore cannot be said to have adopted such a position at SanDisk's urging. The district court here recognized that very point in its summary judgment and claim construction order. As it noted, "SanDisk's argument [for the analysis set forth above] draws some strength from the limited nature of the Lexar court's construction. The Lexar court did not explicitly construe the broader phrase from the patent [citing partitioning step]. The Lexar court limited its construction to the 'user data and overhead data portions' of claims 1 and 10." As SanDisk observes, the issue before Judge Breyer in Lexar was whether the sectors subject to the claim 1 and claim 10 methods were limited to a single user and data portion, or whether those sectors could be further partitioned. In short, Lexar involved a different dispute concerning the claim terms.

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Second, SanDisk's arguments at preliminary injunction in this action were no more "clearly inconsistent" than the arguments in <u>Lexar</u>. In support of preliminary injunction, SanDisk argued that the preamble to claims 1 and 10 required "partitioning the array of non-volatile memory sector cells into at least a user data region and an overhead data region." SanDisk further argued, invoking the <u>Lexar</u> construction of "partitioned", that the claim required "each non-volatile memory sector must have at least one user data portion and one overhead data portion, but is not limited to only one data user portion and only one overhead data portion."

As explained above, these arguments are directed to the claimed method, and the claims do not preclude additional memory cells that are not organized according to that method. Moreover, at preliminary injunction SanDisk plainly urged the <u>Lexar</u> claim construction, and that analysis did not extend to the issue at bar. Thus, there was no inconsistency between the arguments at preliminary injunction, and the disputed construction now on appeal. In sum, the factual premise of Ritek's argument is misplaced. There is no basis for judicial estoppel here.

Moreover, the equities do not favor applying judicial estoppel to prevent claim construction arguments from evolving after preliminary injunction. The law provides, for example, that the trial court is free to revisit an initial claim construction adopted for preliminary injunction, recognizing that a preliminary construction made without full development of the record or issues should be open to revision. See <u>Gillette Co. v. Energizer Holdings, Inc.</u>, 405 F.3d 1367, 1375 (Fed. Cir. 2005). After discovery the court expects the parties to refine the disputed issues and learn more about the claim terms and technology, at which point a more accurate claim construction can be

attempted. That is precisely what happened here. If, as it appears, SanDisk initially thought every memory cell on the accused Ritek products came within the claimed method, then there was no occasion to consider whether other, non-sectored or non-partitioned sectors of memory cells could be used in conjunction with claims 1 or 10. Thus, the present dispute only became an issue after further discovery. Applying judicial estoppel here would subvert the useful function of pre-trial discovery and motion practice in focusing issues for trial. In sum, judicial estoppel does not prevent SanDisk from maintaining its current claim construction arguments.

<div align="center">E.</div>

The parties further dispute the meaning of "array" as used in claims 1 and 10. The trial court determined that "array" meant a collection of Flash EEprom memory cells on one or more EEprom chips. SanDisk argues, to the contrary, that by the plain meaning expressed in technical dictionaries "array" refers only to a collection of cells on a single integrated circuit or chip. Ritek argues that the '987 patent uses array in a specific sense, at odds with the plain meaning, but consistent with the trial court's interpretation. Ritek further argues that judicial estoppel applies, with special force, to the proper reading of "array".

As noted above, the difference does not alter the trial court's judgment of no infringement. The judgment does not depend on the choice between these disputed meanings of "array". It turns, instead, on the district court's reading of the partitioning requirements in the claims. Because this court reviews judgments rather than claim construction orders, we find it unnecessary at this point to decide this dispute.

III.

Pretec urges the court to affirm the judgment of no infringement in view of its arguments concerning the meaning of "corresponds" in claims 1 and 10. Pretec made the same claim construction and infringement arguments to the trial court after the relevant cut-off dates under the Northern District's Patent Local Rules and the trial court's scheduling order. The district court refused to entertain Pretec's untimely arguments. As explained in Genentech, Inc. v. Amgen, Inc., 289 F.3d 761, 774 (Fed. Cir. 2002), this court gives broad deference to the trial court's application of local procedural rules in view of the trial court's need to control the parties and flow of litigation before it. "[T]his court defers to the district court when interpreting and enforcing local rules so as not to frustrate local attempts to manage patent cases according to prescribed guidelines." Id. The district court's application of the local rules are within its sound discretion, and when reviewing that exercise of discretion "this court determines whether (1) the decision was clearly unreasonable, arbitrary, or fanciful; (2) the decision was based on an erroneous conclusion of law; (3) the court's findings were clearly erroneous; or (4) the record contains no evidence upon which the court rationally could have based its decision." Id. None of these criteria for setting aside the district court's ruling are satisfied here. In sum, Pretec shows no abuse of discretion in the district court's ruling, and indeed we discern none.[4]

IV.

The district court erred in its claim construction. The limiting preambles in claims 1 and 10 are written in open language, and the claims are not limited to memory

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[4] We do not decide whether, at trial on the merits, Pretec can or should be precluded from presenting these claim construction and non-infringement arguments.

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systems in which every memory cell is grouped into a partitioned sector. The judgment

of no infringement rests on an erroneous claim construction, and the court vacates it.

The case is remanded for further proceedings.

<u>VACATED AND REMANDED</u>

Each side shall bear its own costs.