United States District Court,
E.D. Texas, Texarkana Division.

Simson GARFINKEL,
Plaintiff.
v.
DECRU, INC., and Network Appliance, Inc,
Defendants.

Civil Action No. 5:07-CV-19 (DF)

June 13, 2008.

Sean Fletcher Rommel, Corey Darnell McGaha, Leisa Beaty Pearlman, Patton Roberts PLLC, Texarkana, TX, Andrew P. Nemiroff, Joshua L. Raskin, Martin G. Raskin, Steven Rubin, Wolf Block Schorr and Solis-Cohen, New York, NY, for Plaintiff.

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CLAIM CONSTRUCTION ORDER

DAVID FOLSOM**, District Judge.**

Before the Court are the Patent Local Rule 4-3 Joint Claim Construction and Prehearing Statement, each party's briefs related to Garfinkel's asserted U.S. Patent No. 6,993,661 (the "'661 Patent"), and the parties' Joint Claim Construction Chart pursuant to P.R. 4-5(d). Dkt. Nos. 34, 38, 42, 48, 51, and 49, respectively. A tutorial was held on April 23, 2008 and a Markman Hearing was held on April 24, 2008. *See* Tutorial Hr'g Tr., Dkt. No. 57; Markman Hr'g Tr., Dkt. No. 58.

I. BACKGROUND

On January 31, 2008, Simson Garfinkel ("Plaintiff") filed an action in this Court against Decru, Inc. and Network Appliance, Inc. (collectively "Defendants") in the Texarkana Division of the Eastern District of Texas. Dkt. No. 1. Plaintiff alleged infringement of the '661 Patent.

A determination of patent infringement involves two steps. First, the patent claims are construed, and, second, the claims are compared to the allegedly infringing device. Cybor Corp. v. FAS Techs., Inc., 138 F.3d 1448, 1455 (Fed.Cir.1998) (en banc). The legal principles of claim construction were reexamined by the Federal Circuit in Phillips v. AWH Corp., 415 F.3d 1303 (Fed.Cir .2005) (en banc). The Federal Circuit in Phillips expressly reaffirmed the principles of claim construction as set forth in Markman v. Westview

Instruments, Inc., 52 F.3d 967 (Fed.Cir.1995) (en banc), *aff'd,* 517 U.S. 370 (1996), Vitronics Corp. v. Conceptronic, Inc., 90 F.3d 1576 (Fed.Cir.1996), and Innova/Pure Water, Inc. v. Safari Water Filtration Systems, Inc., 381 F.3d 1111 (Fed.Cir.2004). Thus, the law of claim construction remains intact. Claim construction is a legal question for the courts. Markman, 52 F.3d at 979.

The Court, in accordance with the doctrines of claim construction which it has outlined in the past, construes the claims of the '661 Patent as below. *See Pioneer v. Samsung,* Civ. No. 2:07-cv-170, Dkt No. 94 at 2-8 (E.D. Tex. filed Mar. 10, 2008) (claim construction order).

II. THE PATENT-IN-SUIT

The '661 Patent, entitled "System and method that provides for the efficient and effective sanitizing of disk storage units and the like," issued on January 31, 2006. The Abstract reads as follows:

An arrangement sanitizes a digital data storage unit, such as a disk data storage unit, by encrypting the information that is stored thereon. When the previously-stored information is retrieved from the digital data storage system storage unit, the information is decrypted prior to being provided to the device that requested retrieval of the data. If the digital data storage unit is to be sanitized, the key or keys that used to at least decrypt the data stored on the digital data storage unit are discarded or made unavailable for use in decrypting the encrypted digital data, thereby making the unencrypted data unavailable. Any of a number of types of encryption/decryption methodologies can be used, including a symmetric key methodology, an asymmetric key methodology such as a public key/private key methodology, or any of a number of other encryption/decryption methodologies.

Pursuant to the January 8, 2008 docket control order, Plaintiff preliminary asserted claim 1, 7, 10, 16, 18, 21, 29, 40, and 41 of the '661 Patent. For purposes of this claims construction, however, the Court will focus on independent claims 1 and 40 only, as construction of terms in these claims controls the outcome of the construction. Claims 1 and 40 read as follows:

1. A digital data storage subsystem for storing data in digital form comprising:

A. a storage medium configured to store digital data;

B. a storage control module configured to

I. in response to a storage request requesting storage of digital data, receive the digital data that is to be stored in response to the storage request from a source, encrypt the received digital data using a selected encryption key and enable the encrypted digital data to be stored on the storage medium; and

ii. in response to a retrieval request requesting retrieval of digital data, enable at least one selected portion of the encrypted digital data to be retrieved from the storage medium, decrypt the retrieved encrypted digital data using a selected decryption key, and provide the decrypted digital data to a destination; and

C. a sanitization control module configured to, in response to a sanitization request, make the decryption key unavailable to the storage control module, thereby disabling the storage control module from thereafter decrypting the encrypted digital data stored on the storage medium.

40. A mass storage subsystem comprising:

an interface for accepting requests and for passing unencrypted data between a data utilization device and the subsystem;

a store for cryptographic information, wherein the storage subsystem is configured to retain the cryptographic information within the storage subsystem;

a storage control module configured to

receive a storage request and associated data through the interface and to encrypt said data using the cryptographic information prior to passing the encrypted data to a storage medium; and

receive a retrieval request through the interface and to decrypt requested data using the cryptographic information prior to passing the decrypted data to the interface; and

a sanitization control module configured to receive a sanitization request and to make at least some of the cryptographic information unavailable to the storage control module to prevent decryption of at least some of the encrypted data passed to the storage medium.

III. CLAIM CONSTRUCTION-THE '661 PATENT

A. Agreed Terms

The parties have reached agreement as to the construction of several previously disputed terms. Dkt. No. 34 at 2. FN1 These constructions were set forth in the initial P.R. 4-3 Joint Claim Construction and Prehearing Statement:

FN1. All page numbers refer to the docket header page.

Claim Term	Agreed Construction
make the decryption key unavailable to the storage control module, thereby disabling the storage control module from thereafter decrypting (claims 1 and 18)	make the decryption key inaccessible to the storage control module thereby making the storage control module unable to decrypt the encrypted data from that time on
decryption key store (claim 7, 10, 16, and 21)	a location for storing at least one decryption key
the decryption key is made unavailable for decryption thereby disabling the decryption (claim 29)	make the decryption key inaccessible to the storage control module thereby making the storage control module unable to decrypt the encrypted data from that time on
make at least some of the cryptographic information unavailable to the storage control module to prevent decryption (claim 40)	make the cryptographic information inaccessible to the storage control module thereby making the storage control module unable to decrypt the encrypted data from that time on
sanitization control step (claim 29)	step for controlling sanitization

Dkt. No. 34 at 2.

In view of the parties' agreements on the proper constructions of each of the identified terms, the Court adopts the parties' Agreed Constructions. The agreed constructions shall govern this case.

B. Disputed Terms

1. Control Module Terms:

"Sanitization Control Module" (claims 1, 18, 40)
"Storage control Module" (claims 1, 18, 21, 40)

Claim	Plaintiff's Proposed Construction	Defendants' Proposed Construction
storage control module	a controller, at least one function of which is to control storage of data	data storage controller
sanitization control module	a controller, at least one function of which is to control sanitization	a component for controlling sanitization

Dkt. No. 49 at 9-10.

(1) Parties' Positions

Plaintiff explains that the difference between the parties' constructions is "whether the controller(s) or component(s) which perform(s) functions relating to data storage and to sanitization must be controller(s) or component(s) dedicated to performing only a single function, i.e. whether the controller(s) or component(s) can be capable of performing any function(s) other than storage or sanitization." Dkt. No. 38 at 11. Plaintiff contends that neither the specification nor the claims require a restrictive construction. *Id*. (citing E.I. Du Pont de Nemours & Co. v. Phillips Petroleum Co., 849 F.2d 1430, 1433 (Fed.Cir.1988)). Plaintiff notes that the claim language itself provides that the storage control module performs functions other than storage operations, such as encryption and decryption, and similarly for the sanitization control module. *Id*. at 12 (citing '661 Patent, 7:35-48). Plaintiff states that "control module" is not used in the specification, which uses the term "controller" to perform the functions claimed as "control modules." *Id*. at 13-14 (citing '661 Patent, 4:13-20, 4:21-28, 5:17-26, 5:39-42).

Defendants respond with agreement that a "controller" in the specification was claimed as a "module." Dkt. No. 42 at 7. Defendants state that they "do not believe the claimed controller is dedicated [to particular data storage control tasks such that it cannot perform other tasks such as encryption] and there is nothing in their proposed construction which suggests that it is so dedicated." *Id*. Thus, Defendants aver that the "dedication" is a non-issue. *Id*. Defendants assert that its construction of "data storage controller" is applicable "because it is a known term in the sense that it is a controller that controls the basic tasks of data storage" and cites to the patent for support. *Id*. at 8 (quoting '661 Patent, 4:13-20). Defendants seek to prevent a construction of "not requiring the storage control module to control the basic operations of data storage, such as managing physical and logical access to the storage medium." *Id*. at 9.

As for "sanitization control module," Defendants respond that the specification describes that the key may be disabled in many ways that do not require a "controller." Dkt. No. 42 at 10. Defendants contend that Plaintiff's construction excludes many of the disclosed methods that do not require a controller, whereas

Defendants' construction captures the other methods. *Id*.

Plaintiff responds that its construction of "storage control module" includes that one function is to "control storage of data." Dkt. No. 48 at 5. Thus, Plaintiff contends that Defendants' fear is addressed. *Id*. Plaintiff argues that Defendants are attempting to import limitations that are not in the specification. *Id*. Regarding "sanitization control module," Plaintiff replies that the embodiments to disable keys do not mention a "component", just as they do not require a "controller." *Id*. at 6. Plaintiff questions how a "component" may exist without a corresponding controller. *Id*.

Defendants reply that Plaintiff is attempting to "attenuate the relationship between the data storage controller and the required function of controlling the basic functions of data storage." Dkt. No. 51 at 3. Defendants state that Plaintiff's concern is that a "data storage controller" may be read as not performing other functions, which Defendants again consider a non-issue because they acknowledge that a data storage controller can perform other functions. Defendants offer an alternative construction that a "storage control module" is "a controller whose functions include controlling the basic operations of data storage." Dkt. No. 51 at 3.

With regard to "sanitization control module," Defendants state that the only difference is whether the module is a "controller" or a "component." Dkt. No. 51 at 4. Defendants note that Plaintiff admits that "embodiments in the patent sanitize the memory *without* using a controller for the sanitization." *Id*. Defendants contend that a "component" is not as limiting as a "controller," but offers "module" as a compromise term.

At the Markman Hearing, the parties further clarified their differences, which they agreed to be whether the "storage control module" must perform the "basic functions" of data storage. Markman Hr'g Tr. 30:6-11 (Plaintiff's arguments); 50:4-6 (Defendants' arguments). Plaintiff was concerned that Defendants' construction would require that certain "undefined basic functions" must be performed. *Id*. at 30:11-16. Defendants referred to the specification and indicated that it discloses "buffering data to be stored and buffering data to be retrieved," information passing through the user's computer to the storage medium and back, etc. *Id*. at 50:16-24. Defendants argued that they "just want it to be clear that the controller is performing basic functions of data storage, such as scheduling read and write requests and buffering data to be stored or retrieved." *Id*. at 51:20-25.

Defendants proposed an alternative construction of "a controller that performs the basic function of ... controlling data storage, such as scheduling of storage and retrieval operations, buffering of data to be stored, and buffering of data to be retrieved." *Id*. at 52:19-23. Plaintiff disagreed with the "such as" language because "if it's required that there are other functions that the storage controller perform, some subsidiary storage function that the Defendant considers to be a basic function and [Plaintiff does not], there is some ambiguity in 'such as.' " *Id*. at 53:3-7. Plaintiff offered an alternative construction, adding "basic functions, namely scheduling of storage and retrieval operations, buffering of data." *Id*. at 53:7-9. Defendants agreed to this, but Plaintiff's added the clarification that "it's not uncommon for data not to be buffered in a controller." *Id*. at 54:3-6. Defendants agreed that "different systems will operate differently" but emphasized that the "basic functions of data storage" from the specification should be described, but that the basic functions are "not necessarily limited to those." *Id*. at 54:20-24.

(2) Construction

Regarding "storage control module," the parties agree that a "controller" or "module" can perform functions other than storage. As discussed at the Markman Hearing, the issue is whether the "basic functions" should

be included. Defendants primarily rely on the section of the specification which states:

The controller performs a number of operations in connection with the mass storage subsystem 12, including scheduling of storage and retrieval operations by the respective disk storage units 11(n), buffering of data to be stored in a storage operation pending storage in a disk storage unit 11(n), buffering of data retrieved from a disk storage unit 11(n) prior to transmission to the destination data utilization device by the interface 13, and the like.

'661 Patent, 4:13-20.

As has been explained by the Federal Circuit, it is a cardinal sin to read a limitation from the written description into the claims. Phillips, 415 F.3d at 1320. Defendants may have been seeking to help the jury understand functions that may be included during storage; however, by importing the specification's functions into the construction, the Defendant's proposed construction improperly limited the claim term. Defendants concede that the storage function need not necessarily be limited to the operations disclosed, but they also concede that different systems operate differently. Thus, each system may not require all the functional limitations disclosed in the specification.

Therefore, the Court construes the term "storage control module," to mean "a module for controlling storage, though the module need not be solely dedicated to controlling storage."

Regarding "sanitization control module," the Plaintiff agreed with Defendants' compromise. Markman Hr'g Tr. 7:8-10. Specifically, Plaintiff stated:

What Defendants offered as a compromise in their sur-reply was a module for controlling sanitization. Now, let me say that we agree to that, but we want it understood, and I think there is no issue on this, that the module is not dedicated to controlling sanitization.

Markman Hr'g Tr. 31:6-15.

The Defendants agreed to this. Therefore, the Court construes "sanitization control module" to mean "a module for controlling sanitization, though the module need not be solely dedicated to controlling sanitization."

2. "using a selected encryption key" (claims 1, 18, and 29);

"using a selected decryption key" (claims 1, 18, and 29)

Plaintiff's Proposed Construction	Defendants' Proposed Construction
using a specific encryption/decryption key corresponding to the storage medium	No construction necessary. If construed: using a specific encryption/decryption key

Dkt. No. 49 at 11.

(1) Parties' Positions

Plaintiff explains that a "selected" encryption key means that "each of the one or more storage media or units has a corresponding decryption key which is used to decrypt data retrieved from that storage medium

or unit, and that the 'selected' decryption key is simply the decryption key that corresponds to that particular storage medium or unit on and from which data is to be stored and retrieved." Dkt. No. 38 at 16. Plaintiff acknowledges that the claims use "storage medium" and that "[f]or the purposes of this claim construction, the term 'storage medium' used in the claims will be understood to mean the same thing as the term 'storage unit' used in the specification." *Id*. at 15 n. 7. Plaintiff contends that the encryption key used to encrypt data may be the same as the decryption key which is made unavailable during sanitization of the "storage medium or unit." *Id*. at 16. Plaintiff emphasizes that the decryption key corresponds to a particular storage medium or unit. *Id*. at 17. Plaintiff contends that the claim itself provides that a decryption key is made unavailable "thereby disabling the storage control module from thereafter decrypting the encrypted digital data stored on the storage medium." *Id*. at 17 (citing '661 Patent, 7:49-54).

For support for its proposition, Plaintiff avers that the title, "sanitizing of disk storage units," supports his construction that keys correspond to "storage media or storage units, as opposed to specific files contained on a storage medium or unit." Dkt. No. 38 at 19. Plaintiff indicates that further support is found in the Abstract as well as the specification (*Id*. at 17-18 (citing '661, 1:8-11; 2:18-34; 3:12-25; 3:30-33;4:39-55; 5:47-49; 6:28-38). Plaintiff clarifies one section of the specification, which provides that there may be "N" storage units encrypted in "N" key stores, by explaining that while "there is correspondence between multiple key stores and multiple storage media or units," that the claim scope "is broader in that a single key can correspond to multiple storage media or units." *Id*. at 19 n. 8 (citing '661 Patent, Fig. 1; 4:28-33). Plaintiff emphasizes that the key corresponds to a storage medium and "not a file contained on the storage medium or unit." Id.

Plaintiff argues that there is support in the prosecution history because U.S. Patent 6,134,660 ("the Boneh Patent") was cited as prior art during the prosecution of the '661 Patent. Dkt. No. 38 at 19. Plaintiff explains that the Boneh Patent is directed to encrypting/decrypting files with an encryption/decryption key. *Id* . at 20. Plaintiff concludes that this prior art, "which discloses a decryption key corresponding to a file, clearly illustrates that the claimed 'selected' key corresponds to a storage medium or unit, not a file stored on the storage medium or unit." *Id*. Plaintiff contends that prior art cited in the prosecution history is intrinsic support for its construction. *Id*. (citing Phillips, 415 F.3d at 1317, Kumar v. Ovonic Battery Co., Inc., 351 F.3d 1364, 1368 (Fed.Cir.2003); Tate Access Floors, Inc. v. Interface Architectural Resources, Inc., 279 F.3d 1357, 1371 n. 4 (Fed.Cir.2002); Tessera, Inc. v. Micron Technology, Inc., 423 F.Supp.2d 624, 629 (E.D.Tex.2006)).

Plaintiff also argues that Defendants' construction simply replaces "selected" with "specific" and renders the word "selected" meaningless. Dkt. No. 38 at 20 (citing Innova/Pure Water, Inc. v. Safari Water Filtration Sys., Inc., 381 F.3d 1111, 1119 (Fed.Cir.2004)).

Defendants argue that no construction is necessary. Dkt. No. 42 at 11. Defendants assert that the specification provides "several alternatives for selecting a specific encryption key, including concatenating techniques ['661 Patent, 2:63-64], XOR techniques ['661 Patent, 2:65-68], and other techniques known to those skilled in the art for selecting specific keys ['661 Patent, 3:1-5]. Defendants provide that the selection of specific keys was the focus of the invention. Id. (citing '661 Patent, 6:14-20, Claims 12, 13, 14, 25, 26, 27, 36, 37, 38). Defendants contend that Plaintiff seeks to narrow its claims over invalidating prior art by construing "selected" to mean "that the claimed key can only work as an all-or-nothing sanitizer of an entire storage medium, but cannot operate on some of the data on the storage medium such as particular files." *Id*. at 12. Defendants explain that the "purpose of the invention is not only to allow an entire storage medium to be rendered inaccessible, but in fact contemplates rendering inaccessible selected portions of the storage

medium such as a particular set of files." *Id*. Defendants cite to the language of claim 40 which provides that for certain keys only " *some of* the files on the storage medium are rendered inaccessible." *Id*. (emphasis in original). Defendants reason that claim 40 "covers keys that 'correspond' to some, but not all, of the data on the storage medium." *Id*.

As further support, Defendants explain that the sanitization of the system as claimed is not limited to "an entire storage medium, but that could work at the file level as well." Dkt. No. 42 at 13. Defendants argue that the patent explains that it is flexible as to "digital data storage arrangements" and can be used with "all kinds of computer structures, including general purpose and special purpose computer structures." *Id*. (citing '661 Patent, 7:1-6; 7:6-11). Defendants argue the claims are not "limited rigidly" to the specification which covers "various variations and modifications." *Id*. (citing '661 Patent, 7:23-26).

Defendants also look to the claim text to define "selected." Specifically, Defendants argue that claim 1 states "at least one *selected* portion of the encrypted digital data' is retrieved and is decrypted "using a *selected* decryption key." Dk. No. 42 at 13 (emphasis in original). Defendants contend that the parallel use of "selected" implies that keys "can exist on something other than a per storage medium basis" because "keys can be selected that relate to only selected data from within the storage medium, and not necessarily *all* data in the storage medium as Plaintiff insists." *Id*. at 13-14 (emphasis in original).

Defendants equate selecting a key to choosing a pass phrase. Dkt. No. 42 at 14. Defendants argue that ordinary usage in the cryptographic arts, citing to Plaintiff's own cryptography book, explains that a pass phrase allows one to read encrypted files, where, in the specific context, the pass phrase are used to encrypt both files and the secret keys. *Id*. Defendants states that if " 'selected' refers to picking one of many pre-existing keys, and not selecting a specific combination of numbers to create a key," then it would be inconsistent with the claims. *Id*. at 15. Defendants explain that all 41 claims describe that all the data is encrypted, decrypted, and stored on a single "storage medium" and if there were only one preexisting key for the entire storage medium, there would be no need to select a key from a group of keys. *Id*.

Referring to the prosecution history, Defendants note that the examiner rejected claim 1 as anticipated by U.S. Patent No. 5,265,159 ("the Kung Patent"). Dkt. No. 42 at 15 (citing Kung Patent, 1:44-45). Defendants explain that the Kung Patent taught a file-specific method which covered the limitations of encrypting and decrypting data using a selected encryption/decryption key. *Id*. at 15-16 (citing '661 Patent File History, Dkt. No. 42, Exh. F., Paper No. 7 at 3). Defendants argue that Plaintiff's response indicates that the invention made "selected decryption keys unavailable" and that Plaintiff did not distinguish the Kung Patent based on a selected key corresponding to a storage medium. *Id*. at 16. Defendants counter Plaintiff's citation to the Boneh Patent by stating that neither the Examiner nor the Applicant discussed the patent. *Id*. at 16 n. 4.

Plaintiff responds by arguing that "Defendants confuse *selection* of an encryption/decryption key with the *generation* of the key." Dkt. No. 48 at 7. Plaintiff explains that the section of the specification cited by the Defendants regarding concatenation and XOR functions relate to techniques to form a key, not selection of a key. *Id*. (citing '661 Patent 2:63-68). Plaintiff argues that Defendants focus on the word "selected" rather than the term in the context of the entire phrase. *Id*. at 8.

Regarding claim 40, Plaintiff avers that the language in the claim is consistent "with the remainder of the '661 patent in that it is in fact directed to the sanitization of all of the data on a storage medium." Dkt. No. 48 at 8. Plaintiff reiterates that the patent does not cover "a system that works on the file level." *Id*. Plaintiff defines a "storage medium" to be "a device or recording medium into which data can be stored and from

which data can be retrieved, and can take on different forms." *Id*. Plaintiff explains that a storage medium may be a "hard drive, a number of logical partitions in a single hard drive, or a number of physical separate hard drives associated with each other." *Id*. Plaintiff defines a partition to be a "logically distinct portion of memory or a storage device that functions as though it were a physically separate unit." *Id*. at 8 n. 6 (quoting Computer Dictionary 292 (Microsoft Press, 2nd Ed.1994), Dkt. No. 48, Exh. 7 at 5). Plaintiff contrasts this with "file" which it defines as a "complete, named collection of information, such as a program, a set of data used by a program, or a user-created document." *Id*. at 8 (quoting Dkt. No. 58, Exh. 7 at 3).

Plaintiff explains that claim 40 is directed to a "mass storage subsystem" with "multiple storage media (i.e. multiple partitions or multiple hard disks)." *Id*. at 9. Plaintiff explains that the patent teaches transfer of data to the " *entire* mass storage subsystem 10-and not to any particular storage unit 11(1).. 11(N)." *Id*. As an example, Plaintiff provides that a single decryption key K corresponds to a mass storage subsystem may have storage mediums (A B C D), wherein the decryption key K could have multiple parts (K_A, K_B, K_C, K_D) that correspond to a specific part (i.e. K_A to A). *Id*. at 10. Accordingly, Plaintiff avers that "deletion of a portion of decryption key K for disk storage unit A (i.e.K_A) would disable decryption of all data stored on disk storage unit A." *Id*.

Plaintiff disagrees with Defendants' arguments that "selecting a key" means "choosing a password" and construes "selecting a key" to mean "choosing a key from a group of pre-existing keys." Dkt. No. 48 at 10. Plaintiff avers that the term is "selected decryption key" and the term "selecting" is not used in the claims. *Id*. Plaintiff argues that when used in light of the claim, a "selected decryption key" is one that "corresponds to a selected storage medium." *Id*. Plaintiff also cites to his own book to explain that a pass phrase is not a password but rather an input to a hash function used to generate a 128-bit code. *Id*. at 10-11. Finally, Plaintiff explains that a "selected decryption key refers to a key that corresponds to a storage medium from which data is to be retrieved, whether the system includes one or more storage media." Dkt. No. 48 at 11.

Defendants reply that a key is like a password, whether it may be said to be chosen, selected, or generated. Dkt. No. 51 at 5. Defendants note that Plaintiff's initial theory was that "a 'selected' key means there is a **single key per storage medium,** and not multiple keys for different files or sets of files on the storage medium." *Id*. Defendants then note that Plaintiff's reply indicates that a single key can have multiple parts corresponding to sub-sets of data, which Defendants indicate has "no basis in the record." *Id*. at 6. Defendants also state that Plaintiff divides a single "storage medium" into a plurality of "storage mediums" wherein the mediums may be different storage mediums or partitions within a single hard drive. *Id*. Defendants state that "[b]ecause a partition is nothing more than a way of apportioning data on a storage medium, [Plaintiff's] proposed construction would mean that keys could correspond to certain portions of a storage medium (i.e.partitions) but could not correspond to other portions of a storage medium (i.e.files)." *Id*. Defendants state that this position is untenable particularly when claim 40 allows selected keys to decrypt "some of the encrypted data passed to the storage medium." *Id*.

(2) Construction

As explained by the Federal Circuit, "words of a claim 'are generally given their ordinary and customary meaning.' " Phillips, 415 F.3d at 1312 (quoting Vitronics Corp. v. Conceptronic, Inc., 90 F.3d 1576, 1582 (Fed.Cir.1996)). Under the plain reading of the terms, the selection of the encryption or decryption key does not require that the key correspond to a storage medium. Rather, the language of the claim and the disclosure of the specification focuses on disabling access to data. The limitation that Plaintiff seeks to

include is not found in the specification, either as a disclaimer or disclosed as a specific embodiment. To overcome this lack of teachings, and in support of its attempt to limit the claims, Plaintiff provides a highly modified version of Figure 1 of the Patent. *See Plaintiff's Reply Claim Construction Brief,* Dkt. No. 48 at 9-10.

Though the terms at issue are directed to selecting an encryption key, the primary contention between the parties is actually directed to whether a key corresponds to an entire storage medium. The relationship between the selection of an encryption/decryption key is inexorably intertwined with the removal of the decryption key, because a key is necessary to encrypt, and more importantly to decrypt, data. Without the key the associated data would remain encrypted. The "sanitization" FN2 of the data necessitates the elimination of the key. Therefore, while Plaintiff contends that a key corresponds to an entire storage medium, wherein the removal of the key renders the entire storage medium inaccessible, Defendants counter that a key can be associated with a single file, in other words, less than an entire storage medium.

FN2. As the patent describes, to sanitize a disk storage unit is "to erase the data stored in a disk storage unit, to over-write the data with other data, or to perform other sanitizing operations," but as the Court understands, the focus of the invention is to prevent any possibly recovery of the erased or over-written data as would be possible with other sanitizing techniques. *See* '661 Patent, 1:40-48.

The Court must first resolve the preliminary matter of the construction of a "storage medium." The term "storage medium" is only used in the claims and is not found in the specification. Plaintiff avers that a "storage medium" and "storage unit" are synonymous for purposes of the claim construction. Dkt. No. 38 at 15 n. 7. The Defendants do not address this matter, but their discussion appears to concede that the Plaintiff's interpretation is acceptable. At the tutorial the Plaintiff described a storage medium FN3 to be "any device into which data can be stored and held until some later time and from which the entire original data can be retrieved or obtained." Tutorial Hr'g Tr. 8:21-24. Plaintiff provided examples of a USB Flash Storage, a hard drive in a desktop computer, and a Redundant Array of Inexpensive Disks (RAID) FN4. Plaintiff further states that a "storage medium" may be a "single unit such as a hard drive, a number of logical partitions in a single hard drive, or a number of physically separate hard drives associated with each other." Dkt. No. 48 at 8. Thus, a "storage medium" may also be a logical partition, wherein the Plaintiff defined "partition" to mean a "logically distinct portion of memory or a storage device that functions as though it were a physically separate unit." Dkt. No. 48 at 8 n. 6; Markman Hr'g Tr. 18 at 3-7.

FN3. This is similar to the definition it provided in its reply briefing, wherein the Plaintiff defined a storage medium to be "a device or recording medium into which data can be stored and from which data can be retrieved." Dkt. No. 48 at 8 n. 6.

FN4. The Plaintiff explains that a RAID can be "separate hard disks housed in a single housing" but appearing as a "single storage medium." Tutorial Hr'g Tr. 57:7-10.

The Court agrees with the interpretation that "storage medium" and "disk storage unit" are synonymous for the purposes of claim construction. The Court notes that the intrinsic evidence also indicates that a storage medium or unit is an entire device. For example, the specification describes removing a "disk storage unit" from a computer. '661 Patent, 1:17-19. The specification also describes that the "data storage capacity of

disk storage units is quite large and growing," implying that a disk storage unit has a fixed capacity or has physical limitations, like that of a hard drive. *See* '661 Patent, 1:48-50. Therefore, for purposes of claim construction, the Court interprets a "storage medium" to be synonymous with a "disk storage unit."

The Court next addresses whether a key is only associated with a single storage medium or whether it can also correspond to a single file. Defendants note that the language of claim 40 indicates that the system described by the patentee is not "limited only to an all or nothing sanitization of an entire storage medium, but that could work at the file level as well." Dkt. No. 42 at 13. Specifically, the language of claim 40 provides:

a sanitization control module configured to receive a sanitization request and to make at least some of the cryptographic information unavailable to the storage control module to prevent decryption **of at least some of the encrypted data passed to the storage medium.**

'661 Patent, 11:1-5 (emphasis added).

The parallel language of claim 1 provides:

a sanitization control module configured, in response to a sanitization request, make the decryption key unavailable to the storage control module, thereby disabling the storage control module from thereafter decrypting the encrypted digital data stored on the storage medium.

'661 Patent, 7:49-54.

Unlike claim 1, claim 40 uses the term "cryptographic information" rather than "key." The term "cryptographic information" is another term that only appears in the claims, and it is another term that the parties have asked the Court to construe. The Plaintiff and Defendants recognize the relationship between the term "cryptographic information" of claim 40 and key of the other claims, stating:

Defendants agree that "there is no meaningful difference between the arguments for [the cryptographic information and selecting an encryption/decryption key] disputed terms...."

Plaintiff's Reply Claim Construction Brief, Dkt. No. 48 at 11.

Therefore, the Court determines that the language and use of "cryptographic information" of claim 40 is relevant to the construction of "key" in claim 1. FN5 Claim 40 explains that when some of the "cryptographic information" is made unavailable, decryption is prevented for only "some of the encrypted data." The Federal Circuit has explained that the "context in which a term is used in the asserted claim can be highly instructive." Phillips, 415 F.3d at 1314. The use of "cryptographic information" in claim 40 indicates that a key may be associated with a portion of the "storage medium."

FN5. The Court recognizes that while claim construction doctrine presumes that different terms in different claims have different meanings, claim drafters may also "use different terms to define the exact same subject matter." Curtiss-Wright Flow Control Corp. v. Velan, Inc., 438 F.3d 1374, 1380 (Fed.Cir.2006). While the Court is not addressing the scope or construction of "cryptographic information" here, the Court finds that the "cryptographic information" and "key" have a similar relationship with the data that is encrypted, and thus the context of the use of the term in claim 40 may be applied to claim 1.

As noted earlier, Plaintiff attempts to resolve the inconsistency of its construction with that of claim 40 by providing a lawyer-modified version of Figure 1 of the '661 Patent. Dkt. No. 48 at 9. Plaintiff relies on this newly created technical diagram to support his argument that a "storage medium" in the context of claim 40 may actually comprise "multiple storage media (i.e. multiple partitions or multiple hard disks)." Dkt. No. 48 at 9. The Plaintiff argues that claim 40 is directed to a "mass storage subsystem," and at the Markman Hearing the Plaintiff specifically states that claim 40 "refers to an embodiment where the storage medium comprises more than one storage media, such as two hard drives in a RAID." The Court notes that both of the figures of the '661 Patent are embodiments of a "mass storage subsystem," differing largely in the method of generating keys. *See* '661 Patent, 3:17-25; 5:58-67. Thus the concepts of a "mass storage subsystem," while pertinent to claim 40, would still apply to the other claims of the patent. Plaintiff explains that a single storage medium may consist of multiple disk storage units, which combined form a single storage medium. Markman Hr'g Tr. 18:8-13. Finally, Plaintiff argues that there is a single key K for the storage medium and that this is divided into sub-parts K_A through K_D, each corresponding to a disk storage unit A through D. Markman Hr'g Tr. 18:14-22. Thus, deletion of a sub-part only make a disk storage unit unavailable, and the "at least some of the encrypted data" of the storage medium refers to the single disk. *See* Markman Hr'g Tr. 19:15-24.

The foregoing Plaintiff's arguments are fatally flawed in at least two respects. First, and foremost, there is no intrinsic or extrinsic evidence in the record to support Plaintiff's position. The modified Figure 1 from the ' 661 Patent and the arguments in reliance on this figure have little probative value in construing the claims of this patent. *See* Akamai Technologies Internet Servs ., Inc., 344 F.3d 1186, 1194 (Fed.Cir.2003) (stating that "what the patentee subjectively intended his claims to mean is largely irrelevant to the claim's objective meaning and scope") (quoting Solomon v. Kimberly-Clark Corp., 216 F.3d 1372, 1379 (Fed.Cir.2000). Second, Plaintiff's argument that a single key K, when subdivided into sub-parts, is still just a single key for the unit and is a mere exercise in semantics. Each sub-part would necessarily require a different encryption so each must, in fact, be a separate key. Thus, this argument supports Defendants' position, not Plaintiff's. Finally, there is no technical support to demonstrate that Plaintiff's example of a RAID is practical in the context of claim 40.

Plaintiff cites to the Boneh patent in support of its position, stating that if the prior art encrypts files, then the '661 Patent must claim a key corresponding to a storage medium and not an individual file. *See* Dkt. No. 38 at 20. Plaintiff contends that the "patent examiner was aware of this patent during the examination and understood ... that the Garfinkel invention was quite different from the Boneh patent in that the keys ... were not file specific but were in fact specific to storage media." Markman Hr'g Tr. 14:25-15:4.

The Court finds that Plaintiff's reasoning as to the Boneh patent is without merit. The Boneh prior art was not referenced in any of the Examiner's Office Actions or in any response by the applicant. Therefore, the file history does not provide a way to determine any implications of the reference and silence on the issue is a far cry from any type of explicit prosecution disclaimer. Omega Eng'g, Inc. v. Raytec Corp., 334 F.3d 1314, 1324, 1326 (Fed.Cir.2003); *see also* Northern Telecom Ltd. v. Samsung Electronics Co., 215 F .3d 1281 (Fed.Cir.2000); Rexnord Corp. v. Laitram Corp., 274 F.3d 1336 (Fed.Cir.2001). The only reference to the Boneh patent is an Information Disclosure Statement (IDS) submitted by the Applicant. Dkt. No. 38, Exh. 3-2 at 1 & 30. Although *Phillips* indicates that prior art cited during examination is considered part of the prosecution history, it also emphasizes that "the prosecution history provides evidence of how the PTO and the inventor understood the patent." Phillips, 415 F.3d at 1317. Neither side discussed the Boneh Patent,

thus little weight is given to its disclosure because there is no way to tell how the Examiner viewed the reference and whether the Examiner considered that the claims had other limitations not found in the Boneh reference.FN6 On the other hand, the Kung patent, which Plaintiff did not address in his Markman presentation, was discussed in the prosecution history by both the Examiner and the Applicant. The Kung Patent described file-level encryption, but applicant did not distinguish the Kung Patent based on this limitation. *See* Dkt. No. 38, Exh. 3-2 at 21-28, 31-44. Ultimately, use of prior art should be tempered by the language of the claims and the written description. Here, the language of the claims, as explained above, provides a reading that would not exclude files.

FN6. In the cases cited by the Plaintiff, the prior art at issue played a greater role in the prosecution history. For example, in *Kumar,* the prior art patent was "not simply cited ... as pertinent prior art .... [r]ather the [prior art] patent was considered by both the applicant and the examiner to be highly pertinent prior art." Kumar, 351 F.3d at 1368. In fact, the prior art patent was "extensively discussed and distinguished during prosecution" and thus the Federal Circuit determined that the definition provided in the prior art was "to be preferred over the general dictionary definition." Id. at 1367-68. In Arthur A. Collins, Inc. v. Northern Telecom Ltd., 216 F.3d 1042 (Fed.Cir.2000), cited by *Kumar,* the specification's Background of the Invention specifically referenced prior art patents, which the Federal Circuit used to interpret the terms in the "absence of any indication in [the asserted patents] or in their prosecution histories that the term was meant to have a different meaning." Arthur A. Collins, 216 F.3d at 1045. In *Tate Access Floors,* the Federal Circuit determined that the prior art of record could not compel a narrower construction and held that "where claim language is clear we must accord it full breadth even if the result is a claim that is clearly invalid." Tate Access Floors, 279 F.3d at 1371.

Therefore, the Court finds that a "selected" key is a "specific" key that is related to data that a requester wants encrypted and stored. Although the abstract of the '661 Patent speaks in terms of "an arrangement sanitizes a digital data storage unit," the Court finds that it is the data/information that is to be encrypted/decrypted/sanitized, not the unit per se.

Therefore, and in light of the foregoing analysis, the Court construes the term "using a selected encryption/decryption key" to mean "using a specific encryption/decryption key corresponding to data, wherein the data may range from a single file, a portion of data on a storage medium, or to all the data on the storage medium."

D. "Cryptographic Information" (claims 40 and 41)

Plaintiff's Proposed Construction	Defendants' Proposed Construction
information corresponding to the storage medium and used in encrypting and/or decryption	No Construction necessary. If construed: information used for encrypting/decrypting

Dkt. No. 49 at 15.

(1) Parties' Positions

Plaintiff notes that the "cryptographic information" language of claim 40 has a parallel claim structure as that of claim 1, and as such, should correspond to the storage medium. Dkt. No. 38 at 21 (citing Research Plastics, Inc. v. Federal Packaging Corp., 421 F.3d 1290, 1295 (Fed.Cir.2005)). Plaintiff argues that the

portions of the specification relevant to "selected encryption key" and "selected decryption key" are applicable for "cryptographic information." *Id*. at 22 (citing '661 Patent, 1:8-11, 2:18-34, 3:12-25, 3:30-33, 4:39-55, 5:47-49, 6:28-38).

Defendants respond that the issue is the same as the dispute concerning "selected encryption/decryption keys" and incorporates its arguments from the prior terms. Dkt. No. 42 at 17. Plaintiff agrees and similarly incorporates its arguments regarding "keys" into its argument relating to "cryptographic information." Dkt. No. 48 at 11.

(2) Construction

The parties have agreed that whatever the arguments relating to "selected encryption/decryption key" apply with equal force to that of "cryptographic information." The Court similarly incorporates its arguments from above and construes "cryptographic information" to mean "information used for encrypting/decrypting data, wherein the data may range from a single file, a portion of data on a storage medium, or to all the data on the storage medium."

E. "sanitization request" (claims 1, 18, 29, and 40)

Plaintiff's Proposed Construction	Defendants' Proposed Construction
an indication of a desire to sanitize	No construction necessary. If construed: a request to sanitize the encrypted data.

Dkt. No. 49 at 16.

(1) Parties' Positions

Plaintiff argues that the specification explains that "sanitization requests are indications of the desire of a user to sanitize the storage unit." Dkt. No. 38 at 23 (citing '661 Patent, 4:65-5:1, 5:17-26, 6:20-25, 6:34-43). Plaintiff provides a dictionary definition of "request" to mean "To express a desire for; ask for" (THE AMERICAN HERITAGE DICTIONARY OF THE ENGLISH LANGUAGE (5th ed.2000) or "the act of asking for something to be given or done; solicitation or petition" (RANDOM HOUSE WEBSTER'S COLLEGE DICTIONARY (2d ed.1999). Id. at 24 (citing Dkt. No. 38, Exh. 5). Plaintiff further argues against Defendant's construction is not satisfactory because it deals with "encrypted data" while the patent deals with "sanitization of storage media, not data." *Id*.

Defendants respond that a sanitization request renders the encrypted data unreadable, while Plaintiff's construction introduces ambiguity as to whose desire matters and how one skilled in the art would know whether there is an "indication." Dkt. No. 42 at 18-19. Defendants argue that while the Plaintiff contends that the "desire of the user" matters, the specification does not provide who initiates the request. *Id*. at 19. Defendants state that Plaintiff's own expert thought it was the desire of person trying to steal the data, not the user protecting it. *Id*. at 19-20 (citing Deposition of Dr. Fu, Dkt. No. 42, Exh. G at 150:14-151:3). Defendants indicate that the construction is deficient because it does not indicate the type of "indication" required, which would cause it to be completely subjective. *Id*. at 20 (citing Datamize, LLC v. Plumtree Software, Inc., 417 F.3d 1342, 1350-53 (Fed.Cir.2005)).

Plaintiff clarifies that Dr. Fu correctly testified that "it is a person who is in possession of the system who indicates his/her desire to sanitize." Dkt. No. 48 at 12. Plaintiff also declares that the word "indication" is not vague but broadly "encompasses all forms and types of communications that may be made by a user." *Id*.

(2) Construction

The Plaintiff cites to the specification in support of its construction. One example phrase states: "Accordingly, *if it is desired* to make the data stored on a disk storage unit 11(n) unavailable for access, at least in unencrypted form, the key that is used for decryption is discarded." '661 Patent, 4:65-5:1 (emphasis added). The Plaintiff states that the indication is a desire to sanitize the storage medium. As already explained above in the selection of encryption/decryption keys, the sanitization is related to data, not specifically to the entire storage medium.

Plaintiff also cites to dictionary definitions of the term "request" which mean "to express a desire for" and "the act of asking for something to be given or done." *See* Dkt. No. 38 at 24. Defendants contend that an "indication" is vague and questions "whose desire matters." Although neither party cites this extrinsic evidence with respect to the term at issue, the definition of "controller" provided by Defendants is instructive:

controller: (1) the entity that **enforces the desired behavior**-as specified by the control objectives-of the controlled process by adjusting the manipulated inputs....

(2) a device that generates the input to the plant or process. The role of the controller is to force the controlled variable of the plant or process to **behave in a desired manner.**

Comprehensive Dictionary of Electrical Engineering, Dkt. No. 43, Exh. B (emphasis added).

These definitions rebut Defendants' position that the use of the term "desire" in defining "sanitization request" would introduce vagueness and subjectivity into the claim construction. Use of this term in technical definitions, as above, is a strong indication that a person of ordinary skill would understand the meaning of the terms "sanitization request" to be "an indication of a desire to sanitize." Likewise, the Court is of the view that the jury could readily understand and apply Plaintiff's requested definition of the disputed terms.

Moreover, Defendants question whose desire it would be to sanitize. From the context of the claims and the patent, it is clear that the user that is seeking to protect the data would want to sanitize and not the user seeking to steal the data as Defendants would suggest. The Court is mindful of the claim construction principle to read the claim term in the context of not only the claim, but also "in the context of the entire patent, including the specification." Phillips, 415 F.3d at 1313.

Therefore, the Court construes the term "sanitization request" to mean "an indication of a desire to sanitize."

IV. CONCLUSION

Accordingly, the Court hereby **ORDERS** the disputed claim terms construed consistent herewith.

E.D.Tex.,2008.

Garfinkel v. Decru, Inc.

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