

UNITED STATES DISTRICT COURT
CENTRAL DISTRICT OF CALIFORNIA

CIVIL MINUTES - GENERAL

Case No. 8:22-cv-1599-JVS-DFM Date December 21, 2023
Title MR Technologies, GMBH v. Western Digital Technologies, Inc.

Present: The Honorable **James V. Selna, U.S. District Court Judge**

Elsa Vargas

Not Present

Deputy Clerk

Court Reporter

Attorneys Present for Plaintiffs:

Attorneys Present for Defendants:

Not Present

Not Present

Proceedings: **[IN CHAMBERS] Order Regarding Claim Construction**

I. INTRODUCTION

Plaintiff and Counter-Defendant, MR Technologies, GmbH (“MR Tech”) filed this patent infringement action against Defendant and Counter-Claimant, Western Digital Technologies, Inc. (“Western Digital”) alleging infringement of U.S. Patent Nos. 9,928,864 (the “’864 patent”) and 11,138,997 (the “’997 patent”). (First Amended Complaint (“FAC”), Dkt. Nos. 87-2 (redacted), 89 (unredacted).) The parties now seek construction of nine claim terms and have submitted an Amended Joint Claim Construction and Prehearing Statement with their proposed constructions. (Dkt. No. 158.) Both parties submitted opening briefs (MR Tech Op. Br., Dkt. Nos. 165 (unredacted), 166 (redacted); Western Digital Op. Br., Dkt. Nos. 161-1 (redacted), 169 (unredacted).) and responsive briefs (MR Tech Resp. Br., Dkt. Nos. 174 (redacted), 175 (unredacted); Western Digital Resp. Br., Dkt. No. 173). The parties submitted a Second Amended Joint Claim Construction and Prehearing Statement. (Dkt. No. 182.) The Court held a claim construction hearing on December 18, 2023.

The Court construes the disputed terms as stated herein.

II. TECHNICAL BACKGROUND

The ’864 and ’997 patents concern “multilayer exchange spring recording media.” The ’997 patents claims priority as a continuation of the ’864 patent’s application and the specification of the two are largely the same. (Bertero Decl. ¶¶ 3, 24, Dkt. No. 161-2.) The patents describe a multilayered recording concept used in magnetic hard disk

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drives. Both patents describe recording media “consisting of two or more magnetic layers, with one layer referred to as a ‘hard magnetic storage layer’ and another layer or layers referred to as a ‘nucleation host.’” (*Id.* ¶ 25.) The patents describe a “nucleation host with layers of increasing anisotropy.” (Re Decl. ¶ 6, Dkt. No. 121-21.) Anisotropy refers to “the excess energy required to magnetize the grains in a layer from the easy direction to the hard direction.” (Bertero Decl. ¶ 26.) The direction of the magnetization reflects the zeros and ones of recorded computer information. (*Id.*) The layers of the nucleation host “act[] magnetically as steps, assist in decreasing the amount of energy require[d] to write to the hard magnetic storage layer or layers. As a result, this improves the storage density of the recording media allowing for greater stability and writability.” (Re Decl. ¶ 6.) In one embodiment, the nucleation host consists of one layer that may have uniform or “spatially varying anisotropy $K(z)$, where z is the direction of the thickness of the nucleation host” which sits on top of a harder storage layer.” (Bertero Decl. ¶ 42.) In another embodiment, the nucleation host comprises two or more layers. (*Id.*)

Claim 1 of the '864 Patent recites:

1. A magnetic recording medium, comprising:

an essentially non-magnetic substrate;

an underlayer formed on the non-magnetic substrate; and

an exchange coupled magnetic multilayer structure, including

a hard magnetic storage layer, having a first coercive field $H_s > 0.5$ T, formed on the underlayer; and

a nucleation host, having a second coercive field H_n without the hard magnetic storage layer, lower than the first coercive field, $H_n < H_s$, wherein

said nucleation host

is formed on the hard magnetic storage layer such that the hard

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magnetic storage layer is between the nucleation host and the non-magnetic substrate,

is exchange coupled to the hard magnetic storage layer, and

comprises ferromagnetic layers with increasing anisotropy constant K from layer to layer.

('864 patent at 12:19–36.)

Claim 1 of the '997 patent recites:

1. A magnetic recording system, comprising:

a writing head; and

a disk, including a magnetic recording medium, comprising

an essentially non-magnetic substrate

an underlayer formed on the non-magnetic substrate; and

an exchange coupled magnetic multilayer structure, including

a hard magnetic storage layer, having a first coercive field $H_s > 0.5$ T, formed on the underlayer; and

a nucleation host, having a second coercive field H_n without the hard magnetic storage layer, lower than the first coercive field, $H_n < H_s$, wherein

said nucleation host

is formed on the hard magnetic storage layer such that the hard magnetic storage layer is between the nucleation host and the non-magnetic substrate,

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is exchange coupled to the hard magnetic storage layer, and

comprises ferromagnetic layers with increasing anisotropy constant K from layer to layer.

('997 patent at 14:22–43.)

Claim 7 of the '997 patent recites:

7. A magnetic recording medium, comprising:

an essentially non-magnetic substrate;

an underlayer formed on the non-magnetic substrate; and

an exchange coupled magnetic multilayer structure, including a hard magnetic storage layer, having a first coercive field $H_s > 0.5$ T, formed on the underlayer; and

a nucleation host, having a second coercive field H_n without the hard magnetic storage layer, lower than the first coercive field, $H_n < H_s$, wherein

said nucleation host

is formed on the hard magnetic storage layer such that the hard magnetic storage layer is between the nucleation host and the non-magnetic substrate,

is exchange coupled to the hard magnetic storage layer, and

comprises ferromagnetic layers with increasing anisotropy constant K from layer to layer, wherein at least two of the ferromagnetic layers are coupled with a thin exchange coupling layer.

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(Id. at 14:61–15:14.)

III. LEGAL STANDARD

A. *Claim Construction*

It is well settled that claim construction is “exclusively within the province of the court.” Markman v. Western Instruments, Inc., 517 U.S. 370, 372 (1996). Such construction “must begin and remain centered on” the claim language itself, Interactive Gift Express, Inc. v. Compuserve, Inc., 256 F.3d 1323, 1331 (Fed. Cir. 2001), but extrinsic evidence may also be consulted “if needed to assist in determining the meaning or scope of technical terms in the claims,” Pall Corp. v. Micron Separations, Inc., 66 F.3d 1211, 1216 (Fed. Cir. 1995).

In construing the claim language, the Court begins with the principle that “the words of a claim are generally given their ordinary and customary meaning.” Phillips v. AWH Corp., 415 F.3d 1303, 1312 (Fed. Cir. 2005) (en banc) (internal quotation marks omitted). Further, this ordinary and customary meaning “is the meaning that the [claim] term would have to a person of ordinary skill in the art [(“POSITA”)] in question at the time of the invention as of the effective filing date of the patent application.” Id. at 1313. “[T]he person of ordinary skill in the art is deemed to read the claim term not only in the context of the particular claim in which the disputed term appears, but in the context of the entire patent, including the specification.” Id.

“In some cases, the ordinary meaning of claim language as understood by a person of skill in the art may be readily apparent even to lay judges, and claim construction in such cases involves little more than the application of the widely accepted meaning of commonly understood words. In such circumstances general purpose dictionaries may be helpful.” Id. at 1314 (internal citation omitted). In other cases, “determining the ordinary and customary meaning of the claim requires examination of terms that have a particular meaning in a field of art.” Id. In those cases, “the court looks to those sources available to the public that show what a person of skill in the art would have understood disputed claim language to mean.” Id. (internal quotation marks omitted). These sources include “the words of the claims themselves, the remainder of the specification, the prosecution history, and extrinsic evidence concerning relevant scientific principles,

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the meaning of technical terms, and the state of the art.” *Id.* (internal quotation marks omitted).

However, it is improper to read limitations from the specification into the claim. *Callicrate v. Wadsworth Mfg., Inc.*, 427 F.3d 1361, 1368 (Fed. Cir. 2005) (“[I]f we once begin to include elements not mentioned in the claim, in order to limit such claim . . . we should never know where to stop.” (quoting *Phillips*, 415 F.3d at 1312)). “We do not import limitations into claims from examples or embodiments appearing only in a patent’s written description, *even when a specification describes very specific embodiments of the invention* or even describes only a single embodiment, unless the specification makes clear that ‘the patentee . . . intends for the claims and the embodiments in the specification to be strictly coextensive.’” *JVW Enterprises, Inc. v. Interact Accessories, Inc.*, 424 F.3d 1324, 1335 (Fed. Cir. 2005) (internal citations omitted) (emphasis added).

B. Indefiniteness

A patent’s specification must conclude “with one or more claims particularly pointing out and distinctly claiming the subject matter which the inventor or a joint inventor regards as the invention.” 35 U.S.C. § 112(b); *see also* 35 U.S.C. § 112 ¶ 2 (2006). In order to meet this “definiteness” requirement, “a patent’s claims, viewed in light of the specification and prosecution history, [must] inform those skilled in the art about the scope of the invention with reasonable certainty.” *Nautilus, Inc. v. Biosig Instruments, Inc.* (“*Nautilus I*”), 572 U.S. 898, 910 (2014). The Supreme Court in *Nautilus I* emphasized that patents must be precise enough to afford clear notice of what is claimed, thereby “appris[ing] the public of what is still open to them,” while recognizing that absolute precision is unobtainable given “the inherent limitations of language.” *Id.* at 899, 910 (quoting *Markman*, 517 U.S. at 373).

General claim construction principles apply to indefiniteness challenges, but the burdens are different. *See Enzo Biochem, Inc. v. Applera Corp.*, 599 F.3d 1325, 1332 (Fed. Cir. 2010) (“In the face of an allegation of indefiniteness, general principles of claim construction apply”) (internal quotations and citations omitted). Although courts construing claim language sit in relative equipoise, a patent is “presumed valid under 35 U.S.C. § 282.” *Biosig Instruments, Inc. v. Nautilus, Inc.* (“*Nautilus II*”), 783 F.3d 1374, 1377 (Fed. Cir. 2015). “[C]onsistent with that principle, a fact finder is instructed to

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evaluate . . . whether an invalidity defense has been proved by clear and convincing evidence.” Id. (quoting Microsoft Corp. v. i4i Ltd. P’ship, 564 U.S. 91, 111 (2011)) (emphasis added and brackets removed); Young v. Lumenis, Inc., 492 F.3d 1336, 1345 (Fed. Cir. 2007) (“Because a patent is presumed to be valid, the evidentiary burden . . . is one of clear and convincing evidence.”).

To establish indefiniteness, “an accused infringer [must] show[] by clear and convincing evidence that a skilled artisan could not discern the boundaries of the claim based on the claim language, the specification, and the prosecution history, as well as her knowledge of the relevant art area.” Halliburton Energy Servs., Inc. v. M-I LLC, 514 F.3d 1244, 1249-50 (Fed. Cir. 2008). “Proof of indefiniteness requires such an exacting standard because claim construction often poses a difficult task over which expert witnesses, trial courts, and even the judges of this court may disagree.” Id. at 1249 (quotation marks omitted).

IV. DISCUSSION

A. *Agreed Upon Claim Terms*

The parties agree that the following claim terms should be construed as listed below. The Court adopts the parties’ agreed-upon constructions.

Claim Term(s)	Agreed-Upon Construction
“coercive field”	Plain meaning - a property of magnetic materials that provides a measure of the ability of a ferromagnetic material to withstand an external magnetic field without becoming demagnetized

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“exchange coupled magnetic multilayer structure”	A structure including a nucleation host that is exchange coupled to a hard magnetic storage layer “Exchange coupled” means the magnetic moments in the nucleation host interact through exchange with the moments in the hard magnetic storage layer
“wherein: $H_c(\alpha=20^\circ) < H_c(\alpha=45^\circ)$ ”	Plain meaning - wherein the coercive field if angle alpha (between an external field and a normal of the recording medium) = 20 degrees, is less than the coercive field if alpha = 45 degrees
“coupling layer”	“Layer that alters the coupling between adjacent layers”
“the nucleation host is coupled to the hard magnetic storage layer by an exchange coupling layer”	The nucleation host is coupled to the hard magnetic storage layer by a layer that alters the exchange coupling between the nucleation host and the hard magnetic storage layer
“an exchange coupling sufficiently strong to enable a formation of a domain wall across an interface of the hard magnetic storage layer and the nucleation host during reversal”	Plain meaning - the exchange coupling between the nucleation host and the hard magnetic storage layer is sufficiently strong to enable the formation of a domain wall that propagates through the nucleation host and reverses the hard magnetic storage layer during writing

B. Disputed Claim Terms

The parties brief construction of nine terms.

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1. Disputed Term 1: “nucleation host . . . comprises ferromagnetic layers with increasing anisotropy constant K from layer to layer”

MR Tech’s Proposed Construction	Western Digital’s Proposed Construction
Plain meaning - nucleation host includes two or more ferromagnetic layers which have anisotropy constants K, and the values of the anisotropy constants K for the layers increase as the layers get closer to the hard magnetic storage layer, such that the nucleation host has an overall increase in anisotropy toward the hard magnetic storage layer	Plain meaning - nucleation host where the anisotropy constant K increases from each ferromagnetic layer to the next ferromagnetic layer, either towards or away from the hard magnetic storage layer

a. The Positions of the Parties

MR Tech argues that the claim language’s use of the word “comprises” means “includes but is not limited to,” consistent with the Federal Circuit’s interpretation of the word. (MR Tech Op. Br. at 9 (citing CIAS, Inc. v. Alliance Gaming Corp., 504 F.3d 1356, 1360 (Fed. Cir. 2007)).) MR Tech asserts that the specification “describes a nucleation host that includes two or more ferromagnetic layers with respective anisotropy constants K that increase layer to layer toward the hard storage layer.” (Id. at 10.) MR Tech argues that “layer to layer” means “from one layer to another layer, rather than within a layer.” (Id.) MR Tech also argues that “a POSITA understood the anisotropy constants K must increase toward the hard storage layer.” (Id. at 11.) MR Tech provides several reasons that it is improper to construe that “the anisotropy constant K to *successively* increase from one layer to the next layer across *all* ferromagnetic layers in the nucleation host.” (Id.) First, MR Tech argues that “comprises” does not mean “consists of” such that “the nucleation host *only* has ‘ferromagnetic layers with increasing anisotropy constant K from layer to layer.’” (Id. at 11–12.) Second, MR Tech argues that a POSITA would understand “‘layer to layer’ to mean the anisotropy increases from one layer to a next layer (another layer closer to the hard storage layer).” (Id. at 12.) Third, MR Tech argues that Western Digital excludes disclosed embodiments “where the anisotropy constants do not successively increase at each layer,” such as those “where a nucleation host has multiple layers, the anisotropy

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spatially varies, layer to layer,” and those with “plateaus or steps, connected by rising segments.” (*Id.* at 12–13.) MR Tech contends that Western Digital dismisses such embodiments as “appl[ying] only to single layer nucleation host embodiments,” but a “POSITA would understand that anisotropy varies as a function of ‘z’ whether the host has a single layer” or multiple layers, and “multiple layers with different anisotropies can be used to approximate the varying anisotropy function within a single layer.” (*Id.* at 13–14.) Fourth, MR Tech asserts that “[t]he examiner repeatedly recognized the claims permit unrecited layers.” (*Id.* at 14.)

In arguing for its proposed construction, Western Digital makes a distinction between two principal embodiments, one with a single-layer nucleation host and one with a multilayer nucleation host. (Western Digital Op. Br. at 6.) Western Digital points to the quote from both patents, “In embodiments where the host layer comprises more than one layer the anisotropy increases from one layer to the next layer.” (*Id.*) Western Digital asserts that the patent does not explain how a “decrease in the coercive field resulting from such a stepwise increase in anisotropy . . . can be achieved if there are layers where the anisotropy goes down or remains the same.” (*Id.* at 7.) Western Digital posits that if the anisotropy goes down, “the coercive field required to ‘climb back up the additional stairs’ would increase, thus interfering with the object of the invention to lower the coercive field.” (*Id.*) Western Digital argues that MR Tech wants to “‘pick any two layers’ where there is increasing anisotropy, even if there is an overall decrease across layers.” (*Id.* at 8.) Western Digital argues that MR Tech’s construction would read “from layer to layer” out of the claim “and does not say that the nucleation host ‘comprises two or more layers with increasing anisotropy constant K.’” (*Id.*) Moreover, Western Digital asserts that the prosecution history supports its construction, such as the quote that the *Honda* prior art reference that “*Honda* teaches a magnetic recording media in which an upper magnetic layer has a higher coercivity than a lower magnetic layer. Thus, *Honda* actually teaches away from the currently claimed invention.” (*Id.*) Western Digital also argues that the specification states that “anisotropy may increase or decrease towards the substrate” but MR Tech argues one direction now. (*Id.*) Western Digital contends that “the specification never describes an embodiment that includes layers not increasing from layer to layer, nor a rationale for including such layers.” (*Id.*) Western Digital argues that the discussion of “plateaus or steps” refers to “the unclaimed embodiment disclosing a single-layer nucleation host.” (*Id.* at 10.)

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MR Tech responds that Western Digital's argument that there must be a stepwise increase in anisotropy across all ferromagnetic layers in the nucleation host is based on an improper enablement defense that the specification does not explain how writability improves from anisotropy going down or remaining the same. (MR Tech Resp. Br. at 2.) MR Tech also argues that Western Digital misreads the disclosure and that the different forms of spatially varying anisotropy, including those with plateaus, is not limited to a particular embodiment. (*Id.* at 5.) Moreover, MR Tech asserts that Western Digital's construction that accounts for a decrease in anisotropy across the nucleation host is not accurate because "no recording media at issue in this case has an overall decrease in anisotropy across the nucleation host." (*Id.* at 6.) MR Tech argues that Western Digital's allegations regarding the prosecution history are also inaccurate and the *Honda* prior art is distinguished "because the anisotropy decreased across the only two layers shown, rather than increase." (*Id.* at 7.) MR Tech asserts that prior to amending the claim, it recited "said nucleation host . . . has an anisotropy increasing towards the non-magnetic substrate," and in response to a written description rejection MR Tech amended to recite "ferromagnetic layers with increasing anisotropy constant K from layer to layer." (*Id.* at 11.)

Western Digital responds that "the claim does not say 'two or more layers with increasing anisotropy' or an 'overall increase.'" (Western Digital Resp. Br. at 4.) Western Digital contends that its construction "permits the nucleation host to include unrecited elements (e.g., layers) that are not ferromagnetic layers, but would preserve the claim requirement that the ferromagnetic layers must have increasing anisotropy constant K from layer to layer." (*Id.*) Western Digital argues that "[t]he addition of the word 'each' in [Western Digital's] proposed construction is necessary to make it clear that the claim does not cover storage media that includes ferromagnetic layers for which anisotropy does not increase 'from layer to layer.'" (*Id.* at 5.) Western Digital denies that it excludes a disclosed embodiment and argues that the Dr. Re admits that the "disclosed embodiment with 'plateaus or steps, connected by rising segments' is the bilayer embodiment with a single-layer nucleation host." (*Id.*)

b. Analysis

The Court begins its analysis as it does with all issues of claim constructions: the patent's language. See *Vederi, LLC v. Google, Inc.*, 744 F.3d 1376, 1382 (Fed. Cir.

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2014) (noting that the claim language itself is the best guide to the meaning of a claim term).

First, the parties dispute whether the words “comprises” and “layer to layer” convey that the nucleation host “includes two or more ferromagnetic layers which have anisotropy constants K” that “increase as the layers get closer to the hard magnetic storage layer” or that “each ferromagnetic layer” must have increasing anisotropy. The specification and the generally accepted definition of “comprises” in the patent context support the former.¹

Both parties and their experts agree that there are two principal embodiments, one with a single-layer nucleation host and one with multiple layers in the nucleation host. (MR Tech Op. Br. at 10; Western Digital Op. Br. at 6; Re Decl. Ex. E ¶ 19, Dkt. No. 166-6; Bertero Dep. Ex. B 24:2–23, Dkt. No. 165-2.) The specification goes to great lengths to draw the distinction. “In some embodiments of the magnetic recording medium, the nucleation host, comprises of ferromagnetic layers with increasing

¹ Western Digital also argues for a narrow reading of the term “comprises” because it “is not a weasel word with which to abrogate claim limitations.” (Western Digital Op. Br. at 9 (quoting Spectrum Int’l v. Sterilite Corp., 164 F.3d 1372, 1380 (Fed. Cir. 1998)).) Such a concern does not exist here. In each of Western Digital’s cited cases, courts held that “comprises” could not exclude or negate claim limitations that are not otherwise supported. Spectrum, 164 F.3d at 1379–80 (holding that claims for a patent on crates required a particular structure that differed from a structure embodied in the prior art, and as such “the claim term ‘comprising’ cannot restore this excluded subject matter”); Trading Techs. Int’l, Inc. v. eSpeed, Inc., 595 F.3d 1340, 1354 (Fed. Cir. 2010) (holding that “comprising” could not cover un-recited automatic re-centering of commodities trading software that is rendered impossible by the claims’ restrictive limitation that “the price axis *never* changes positions unless by manual re-centering or re-positioning”); Apple Inc. v. Samsung Elecs. Co., 695 F.3d 1370 (2012) (“[D]espite the use of ‘comprising,’ the patent’s claim was “not amenable to the addition of other modules that do not use different . . . algorithms because such an addition would impermissibly wipe out the express limitation that requires every module to have a unique . . . algorithm.”); Liberty Ammunition, Inc. v. United States, 835 F.3d 1388, 1399 (Fed. Cir. 2016) (reading “including” in the claim language of a firearm projectile patent narrowly to exclude certain constructions because they would “significantly diminish[]” or “render[] the claim language a nullity”). Unlike the language in the cited cases, which led to a narrow interpretation of “comprises” because of conflicts, exclusions, or limiting language like “never,” the reference to an increase in anisotropy here is not subject to any such limitations that would necessitate a departure in Ninth Circuit precedent and read “comprises” narrowly to require that anisotropy increase “from each ferromagnetic layer to the next ferromagnetic layer.”

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anisotropy from layer to layer. In some embodiments of the magnetic recording medium, the nucleation host, comprises a ferromagnetic layer with a continuous change of anisotropy in the film normal direction.” (’864 Patent at 50:50–56.) “Layer to layer” appears in the context of differentiating how the anisotropy increases—the increase in anisotropy occurs not within a layer, but from one to another. What the specification does not do, though, is mandate that the increase occur between every ferromagnetic layer, as Western Digital’s limitation “increases from each ferromagnetic layer to the next” would convey. This is due in part to the broad construction of ferromagnetic layer, *infra*, and the broad descriptions of the embodiments that account for “varying anisotropy.” “In the patent claim context the term ‘comprising’ is well understood to mean ‘including but not limited to.’” *CIAS*, 504 F.3d at 1360. Accordingly, some layers may increase from one to the next, but it is not an explicit requirement. “In some embodiments nucleation host 21 contains more than one layer which have different anisotropy K. In other embodiments nucleation host 21 is characterized by a spatially varying anisotropy K(z). . . . In this sense, embodiments differ from disks which have a single layer nucleation host 21 and a spacer layer.” (’864 Patent at 5:66–6:11.)

Western Digital’s proposed construction would unduly restrict the claim terms by “exclud[ing] embodiments disclosed in the specification.” *Oatey Co v. IPS Corp.*, 514 F.3d 1271, 1276 (Fed. Cir. 2008). In addition to the above embodiments, Western Digital excludes the description of figure 2, which speaks to both embodiments (“bilayer” and “trilayer”): “[t]he variation of K(z) can take many different form. The rise can be linear, or follow any polynomial or other rising function. It can have plateaus or steps, connected by rising segments. It can also have decreasing segments.” (’864 Patent at 8:34–37.) This is not limited to a single-layer embodiment as Western Digital contends, and it conflicts with Western Digital’s construction. As Dr. Re explains, “a multilayer film can have a spatially varying anisotropy in the (z) direction, what K(z) is describing. So it can be a single layer, it can be a multilayer, and still have this functionally varying anisotropy in the normal set of plane.” (Re Dep. ¶¶ 127:11–16, Dkt. No. 166-5.)

At oral argument, MR Tech asserted that there are no dips in anisotropy from one ferromagnetic layer to another ferromagnetic layer in the nucleation host of the accused devices, and Western Digital contended that there are. This is a factual dispute not to be resolved at this stage, but it raises a point relevant to claim construction. The specification itself, notably, includes “polynomial” functions that may themselves

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account for dips in anisotropy. To adopt a construction that forecloses such a dip would be counter to this language.

The second dispute is over the directionality of the increasing anisotropy toward or away from the hard magnetic storage layer. While Western Digital proposes a construction that accounts for both, it would not be consistent with the plain language of the claim to construe increasing anisotropy away from the hard magnetic storage layer. As MR Tech notes, “no recording media at issue in this case has an overall decrease in anisotropy across the nucleation host.” (MR Tech Resp. Br. at 6.) While the embodiments account for varying anisotropy levels within the nucleation host, the claim itself still conveys an overall increase toward the hard magnetic storage layer. Dr. Bertero understood that the direction of the increase in anisotropy is toward the hard magnetic storage layer. (Ex. C ¶ 70, Dkt. No. 166-4.)

For the foregoing reasons, the Court construes Disputed Claim Term 1 as follows: “nucleation host includes two or more ferromagnetic layers which have anisotropy constants K , and the values of the anisotropy constants K for the layers increase as the layers get closer to the hard magnetic storage layer, such that the nucleation host has an overall increase in anisotropy toward the hard magnetic storage layer.”

2. Disputed Term 2: “ferromagnetic layers”

MR Tech’s Proposed Construction	Western Digital’s Proposed Construction
Layers in the nucleation host that have a net magnetic moment M_s greater than zero in the absence of an applied magnetic field, which layers may optionally be separated by thin coupling layers	Plain meaning - layers with a net magnetic moment M_s greater than zero in the absence of an applied magnetic field

a. **The Positions of the Parties**

MR Tech argues for a construction “to avoid jury confusion.” (MR Tech Op. Br. at 15.) MR Tech seeks to clarify that “the claimed ‘ferromagnetic layers with increasing

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anisotropy constant K from layer to layer’ do not include these other layers [such as the hard storage layer and the coupling layers] which are separated described and claimed as distinct from the claimed ‘ferromagnetic layers.’” (*Id.*) MR Tech argues that the claim’s references to ferromagnetic layers only refer to those in the nucleation host, rather than the hard storage layer and coupling layers as suggested by Western Digital’s expert Dr. Bertero. (*Id.* at 15–16.) Additionally, MR Tech seeks to clarify that the “‘thin exchange coupling layer’ separates at least two of the ferromagnetic layers in the nucleation host—and does not separate the nucleation host and the hard storage layer, counter to Dr. Bertero’s assertion that the thin exchange coupling layer separates the nucleation host and the hard storage layer.” (*Id.* at 15.)

Western Digital argues that the term “‘ferromagnetic layers’ is clear and well understood in the art,” and MR Tech “attempts to add three qualifications, neither required nor supported by the specification.” (Western Digital Op. Br. at 13.) Western Digital asserts that ferromagnetic layers “are not limited to be only ‘in the nucleation host,’” and, for example, “the hard magnetic storage layer has higher anisotropy and must be a ‘ferromagnetic layer.’” (*Id.*) Western Digital also argues that “there is no requirement in the plain meaning, or in the written description, that the ferromagnetic layers must assist in switching the hard magnetic storage layer.” (*Id.*) Additionally, Western Digital contends that the limitation that “the ferromagnetic ‘layers may optionally be separated by thin coupling layers’ . . . contradicts the specification’s recognition that the coupling layers themselves may be ferromagnetic.” (*Id.* at 14.) “Most importantly,” Western Digital argues that MR Tech seeks to “make out a case of infringement under the guise of claim construction when it “attempt[s] to inject the concept of ‘coupling layers’ into the construction of ‘ferromagnetic layers.’” (*Id.* at 14.)

MR Tech responds that the specification and claims make clear that ferromagnetic layers can be separated by coupling layers. (MR Tech Resp. Br. at 12.) MR Tech asserts that while “the specification consistently distinguishes the ferromagnetic layers of the nucleation host from the coupling layers and the hard magnetic storage layer, even though the coupling layers and hard storage layer may be ferromagnetic or antiferromagnetic,” Claim 7 of the ’997 Patent states that “at least two of the ferromagnetic layers are coupled with a thin exchange coupling layer.” (*Id.*) MR Tech contends that a construction stating that the “‘ferromagnetic layers’ are not limited to layers in the nucleation host and can thus include the separately claimed ‘hard magnetic storage layer’ also risks confusion as the experts would argue this claim construction

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issue to the jury.” (*Id.*) MR Tech argues that “although other layers may also be ferromagnetic (e.g., the underlayer, hard storage layer, and optional coupling layers), the asserted claims never refer to those other layers as ‘ferromagnetic layers.’” (*Id.* at 12–13.)

Western Digital responds that the patent discloses that coupling layers may be ferromagnetic, and it would be incorrect to construe them as otherwise. (Western Digital Resp. Br. at 9.) Western Digital contends that the patents “do not even disclose coupling layers between the multiple layers of the nucleation host,” just a “single coupling layer . . . always disclosed as between the nucleation host and the hard magnetic storage layer.” (*Id.*) Western Digital also asserts that the patents do not disclose any reason for coupling layers in the nucleation host, and references to “strong exchange coupling . . . teach away from including coupling layers that reduce coupling in the nucleation.” (*Id.* at 10–11.)

b. Analysis

The dispute over this term relates to whether the layers should be specified to be in the nucleation host and that they “may optionally be separated by thin coupling layers.” MR Tech’s construction needlessly muddies the waters of a term that is otherwise well served by its plain meaning. While the claims recite “said nucleation host . . . comprises ferromagnetic layers,” the word “comprises,” as MR Tech itself argues regarding the previous disputed term, means “including but not limited to.” Any exchange coupling layers in the nucleation host may or may not be ferromagnetic, and there may be other layers not in the nucleation host that are ferromagnetic.

After amending its construction, MR Tech adds “which layers may be optionally separated by thin coupling layers.” This, however, confuses more than it helps. Coupling layers may themselves be ferromagnetic, as the patent states when referring to the coupling layer in between the nucleation host and hard magnetic storage layer. “The coupling between the nucleation host and the hard magnetic storage layer may be ferromagnetic or antiferromagnetic.” (’864 Patent at 5:56–58.)

For the foregoing reasons, the Court construes Disputed Claim Term 2 as follows: “layers with a net magnetic moment M_s greater than zero in the absence of an applied magnetic field.”

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3. Disputed Term 3: “nucleation host”

MR Tech’s Proposed Construction	Western Digital’s Proposed Construction
A structure that includes ferromagnetic layers that assist in switching the hard magnetic storage layer, and optional coupling layers	A structure that includes ferromagnetic layers that assist in switching the hard magnetic storage layer

a. **The Positions of the Parties**

The dispute of this term focuses on the inclusion of “and optional coupling layers.” Echoing its arguments from the prior term, MR Tech contends that “the claims and specification expressly disclose that the nucleation host may include coupling layers.” (MR Tech Op. Br. at 19.) Western Digital recites a similar argument as above, challenging that the “one and only optional coupling layer described in the patents is between the nucleation host and the hard magnetic storage layer, not between the layers and the nucleation host.” (Western Digital Op. Br. at 11.)

b. **Analysis**

Unlike the construction of “ferromagnetic layers,” which would cause confusion with a limitation noting “thin coupling layers” that may themselves be ferromagnetic, the inclusion of “optional coupling layers” in the construction of “nucleation host” captures an aspect of the claim that would be confusing if left out. Claim 7 of the ’997 patent states that “said nucleation host . . . is exchange coupled to the hard magnetic storage layer, and comprises ferromagnetic layers with increasing anisotropy constant K from layer to layer, wherein at least two of the ferromagnetic layers are coupled with a thin exchange coupling layer.” (’997 Patent at 15:4–13.) Not only does the claim confirm the coupling of ferromagnetic layers in the nucleation host by a “thin exchange coupling layer,” but it also distinguishes the “thin exchange coupling layer” within the nucleation host with the exchange coupling between the nucleation host and the hard magnetic

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storage layer. Without the inclusion of “and optional coupling layers,” the makeup of the nucleation host would be unclear and potentially misleading.

For the foregoing reasons, the Court construes Disputed Claim Term 3 as follows: “a structure that includes ferromagnetic layers that assist in switching the hard magnetic storage layer, and optional coupling layers.”

4. Disputed Term 4: “hard magnetic storage layer”

MR Tech’s Proposed Construction	Western Digital’s Proposed Construction
Plain meaning - a magnetic layer that has higher anisotropy than the nucleation host and which stores information in magnetically oriented bits	A magnetic layer that has the highest anisotropy of the layers in the recording medium and primarily determines the thermal stability of the recording medium, and which stores information in magnetically oriented bits

a. **The Positions of the Parties**

MR Tech argues that Western Digital’s limitation that the “hard magnetic storage layer have a higher anisotropy than any other layer in the stack” is “contrary to the language of the claim, which does not impose any such requirement.” (MR Tech Op. Br. at 21.) The only limitation is an inference that the anisotropy of the hard layer is higher than that of the nucleation host “because the claim specifies that the coercivity of the hard layer is higher than the coercivity of the nucleation host, and coercivity is closely related to anisotropy.” (*Id.*)

Western Digital argues that the construction “the hard magnetic storage layer ‘has higher anisotropy than the nucleation host’” is ambiguous because it could mean that its anisotropy is higher than the average anisotropy of the nucleation host, higher than the lowest nucleation host layer, higher than the adjacent nucleation host layer, or higher than the highest nucleation host layer. (Western Digital Op. Br. at 18.) Despite these

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possible interpretations, Western Digital contends, the description and Seuss's illustration show that the magnetic hard storage layer is the hardest layer. (Id.)

MR Tech responds that Western Digital's addition of "primarily determines the thermal stability of the recording medium" raises new issues and disputes. (MR Tech Resp. Br. at 14–15.) MR Tech asserts that "[t]he claim language says nothing about thermal stability" and to include Western Digital's construction would "add[] confusion" by introducing new concepts like determining thermal stability. (Id. at 15.)

Western Digital responds that the unclaimed bilayer embodiment's requirement that the hard magnetic storage layer is harder than the nucleation host "is equally applicable to the multi-layer nucleation host embodiments." (Western Digital Resp. Br. at 12.) Western Digital contends that MR Tech's construction that the hard magnetic storage layer has "higher anisotropy than the nucleation host" injects ambiguity because the hard magnetic storage layer could be "harder only than some layers of the nucleation host, but not others." (Id.) Western Digital proposes the language stating that the hard magnetic storage layer is the layer that "primarily determines the thermal stability of the recording medium" to clarify that "a thin hard layer in the nucleation host is not [a hard magnetic storage layer] because it does not provide the thermal stability" required of such a layer. (Id. at 13.)

b. Analysis

The dispute concerns whether the construction should state that the magnetic layer has a "higher anisotropy than the nucleation host" or "the highest anisotropy of the layers in the recording medium" and that the layer "primarily determines the thermal stability of the recording medium."

MR Tech notes that a requirement that "the hard magnetic storage layer have a higher anisotropy than any other layer in the stack" is contrary to the language of the claim, and "the only limitation in the claims is that the coercive field of the hard storage layer is higher than the coercive field of the nucleation host." (MR Tech Op. Br. at 21.) The comparison of anisotropies of the nucleation host and hard magnetic storage layer is, as MR Tech puts it, "[a]t most . . . inferred." (Id.) This inference is neither required nor helpful. Western Digital raises valid points about how exactly to conduct the comparison, whether the hard magnetic storage layer has a higher anisotropy than the

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lowest, adjacent, or highest layer, or an average of all of the nucleation host's layers. (Western Digital Op. Br. at 18.) MR Tech's construction that the hard storage layer has "higher anisotropy than the nucleation host" does nothing to allay this problem. To broaden the anisotropy measurement to any of the "layers in the recording medium," as Western Digital proposes, is needlessly ambiguous and does nothing to help a jury understand the term. Western Digital's modified proposal of "higher anisotropy than any anisotropy in the nucleation host" does not fare better. Given that the claim itself does not clearly state a comparison of the relative anisotropy levels between the nucleation host and hard magnetic storage layer, the construction does not benefit from inclusion of the limitation.

Western Digital's proposed addition of "primarily determines the thermal stability of the recording medium" is not supported by the claims or specification. See Phillips, 415 F.3d at 1313–14 ("[T]he claims of a patent define the invention," as interpreted "in the context of the written description and the prosecution history."). Absent a compelling reason to do otherwise, the Court will not read in claim limitations that are not present in the claim language. See Renishaw PLC v. Marposs Societa' per Azioni, 158 F.3d 1243, 1248 (Fed. Cir. 1998) (noting that claim construction "begins and ends" with the words of the claim). As MR Tech notes, the addition of this language presents new questions such as "how to determine the thermal stability" and "whether a particular layer 'primarily determines' the thermal stability," neither of which are addressed in the specification.

For the foregoing reasons, the Court construes Disputed Claim Term 4 as follows: "a magnetic layer that stores information in magnetically oriented bits."

5. Disputed Term 5: "underlayer"

MR Tech's Proposed Construction	Western Digital's Proposed Construction
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One or more layers on which the hard magnetic storage layer is formed	This claim term is indefinite because it fails to inform, with reasonable certainty, those skilled in the art about the scope of the invention as it relates to “underlayer.” In the alternative, the term should be construed as: a single layer on which the hard magnetic storage layer is formed.
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a. The Positions of the Parties

MR Tech argues that its construction reflects the plain meaning of “‘underlayer’ in the context of [perpendicular recording media] to a POSITA [which] refers to one or more layers between the substrate and the hard storage layer.” (MR Tech Op. Br. at 22.) MR Tech asserts that a soft underlayer “typically consists of one or more layers and sits between the substrate and the hard storage layer,” and the specification “does not disclaim a multilayered underlayer.” (*Id.* at 22–23.) MR Tech points to the prior art *Girt* that “discloses a multilayered underlayer,” which the Examiner cited. (*Id.* at 24.)

Western Digital argues that the “plain and ordinary use” of “underlayer” is singular and not “one or more layers” as construed by MR Tech. (Western Digital Resp. Br. at 15.) Western Digital asserts that MR Tech does not explicitly disclose or imply that an “interlayer” can be included in an “underlayer” the way *Girt* does. (*Id.*) Western Digital also argues that Claim 1 of the ’864 Patent does not specify whether underlayer 7 or underlayer 11b is claimed, and it cannot be both because it is claimed in the singular. (*Id.* at 16.)

b. Analysis

Western Digital fails to show “by clear and convincing evidence that a skilled artisan could not discern the boundaries of the claim” with respect to the term “underlayer.” Dr. Re explains how the patent itself specifies multiple underlayers, specifically layers 7, 9, and 11, and states that “[o]ne of skill in the art would understand that they are each, separately and collectively, the underlayers on which the hard magnetic storage layer (24) is formed.” (Re Decl. ¶ 50.) Continuing on, Dr. Re states

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that “[a] POSITA is familiar with underlayer, and would consider underlayer to simply refer to the layer or layers between the substrate and the hard magnetic storage layer.” (*Id.* ¶ 51.) Western Digital’s alternative construction, which limits the underlayer to “a single layer,” expressly contradicts the specification.

For the foregoing reasons, the Court construes Disputed Claim Term 5 as follows: “one or more layers on which the hard magnetic storage layer is formed.”

6. Disputed Term 6: “wherein $H_m(\alpha)$ is a field to reduce a normalized magnetization from a saturation to -0.5”

MR Tech’s Proposed Construction	Western Digital’s Proposed Construction
Plain meaning	Indefinite because the reduction of magnetization is time and temperature dependent.

a. The Positions of the Parties

MR Tech, relying on its expert Dr. Re, argues for plain meaning because “a POSITA would understand that the measurements of $H_m(\alpha)$ should reflect normal operating conditions.” (MR Tech Op. Br. at 25.) Western Digital argues indefiniteness because “the claim language would require one to determine the field strength necessary to achieve a particular degree of switching of the magnetization” but it is “time and temperature dependent.” (Western Digital Op. Br. at 21.) Western Digital also asserts that “how to measure $H_m(\alpha)$ from saturation to -0.5 magnetization is not standard in the industry. Thus, without clear and specific instructions, such measurements would produce widely different outcomes.” (*Id.* at 22.)

b. Analysis

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Western Digital does not carry its burden of showing by clear and convincing evidence that the term is indefinite in light of a POSITA's understanding of the plain meaning. Even accepting that "the reduction of magnetization is time and temperature dependent," it is no barrier for a POSITA. As Dr. Re states, "A POSITA would understand that determining whether $H_m(\alpha=20^\circ) < H_m(\alpha=45^\circ)$ should reflect normal operating conditions. . . . The temperature should be around room temperature given that computer hard drives implementing the claimed recording medium are typically used in indoor environments." (Re Decl. ¶ 9.) That the claim language does not specifically disclose every testing parameter does not render the claims indefinite. See BASF Corp. v. Johnson Matthey Inc., 875 F.3d 1360, 1366 (Fed. Cir. 2017) ("an inventor need not explain every detail because a patent is read by those skilled in the art").

For the foregoing reasons, the Court finds that Disputed Claim Term 6 "wherein $H_m(\alpha)$ is a field to reduce a normalized magnetization from a saturation to -0.5" requires no construction.

7. Disputed Term 7: "a thin exchange coupling layer"

MR Tech's Proposed Construction	Western Digital's Proposed Construction
"A layer that is sufficiently thin to alter but not prevent exchange coupling between adjacent ferromagnetic layers"	Indefinite

a. **The Positions of the Parties**

MR Tech argues that a POSITA "understood that the 'thin exchange coupling layer' . . . is sufficiently thin to allow the magnetic moments of adjacent layers to interact." (MR Tech Op. Br. at 28.) MR Tech disputes that "thin" is a relative term and points to statements by Dr. Bertero in which he "used the synonymous term 'thin exchange break layer' to describe a purported shift in the industry" and Dr. Re in which he explained that a POSITA would determine that the thin exchange coupling layers "are

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sufficiently thin to control (by reducing but not preventing) the exchange coupling between adjacent layers.” (Id. at 29.) MR Tech also points out that “the Examiner raised an indefiniteness rejection as to a different term,” but not to “thin” or “thin exchange coupling layer.” (Id.)

Western Digital argues that “a thin exchange coupling layer” is indefinite because it neither has an “ordinary meaning in the field” nor is it defined in the ’997 Patent. (Western Digital Op. Br. at 23.) Western Digital asserts that the diagram and written description both lack “guidance on either the purpose or thickness of any such coupling layer in the nucleation host.” (Id.) Western Digital contends that MR Tech’s proposed definition based on the thin exchange coupling layer’s purpose is “not inherent in the claim language, nor is it described in the specification.” (Id. at 24.)

MR Tech argues that Dr. Bertero understood “that an exchange coupling layer is a layer that reduces the exchange coupling between adjacent layers” and a “[a] POSITA thus understood that a ‘thin’ exchange coupling layer is simply an exchange coupling layer that is sufficiently thin to reduce but not prevent this exchange coupling.” (MR Tech Resp. Br. at 18.) MR Tech argues against indefiniteness by contending that a descriptive rather than numerical boundary suffices, particularly that the “whether an exchange coupling layer is sufficiently thin to alter but not prevent exchange coupling between adjacent ferromagnetic layers would depend on its magnetic properties as well as the magnetic properties of the adjacent layers.” (Id. at 20.) MR Tech also asserts that Western Digital’s arguments are directed at layer 22, which “is not the claimed ‘thin exchange coupling layer.’”

Western Digital responds that there are no upper or lower bounds to “thin.” (Western Digital Resp. Br. at 18.) Western Digital argues that because an exchange coupling layer “by definition, is a layer that ‘alters but [does] not prevent exchange coupling,” then the “requirement that the ‘thin’ coupling layer ‘not prevent’ exchange coupling leaves room for ‘normal’ or ‘thick’ coupling layers.” (Id.) Western Digital also refutes MR Tech’s assertion that the Examiner did not object to “thin,” asserting that regarding the claim element “wherein at least two of the ferromagnetic layers are exchange coupled with a thin coupling layer,” the Examiner stated that “‘large’ and ‘thin’ in Claim 1 are relative terms which render the claim indefinite.” (Id. at 20.)

b. Analysis

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The dispute primarily focuses on the use of the word “thin.” MR Tech’s construction rests on the notion that “a thin exchange coupling layer” is one that “reduces but does not prevent exchange coupling between layers.” Western Digital asserts indefiniteness, but this argument is undermined by the understanding of both Dr. Re and Dr. Bertero in using the term “thin exchange coupling layer” or the related “thin exchange break layer.” Given the definition of an exchange coupling layer, which reduces exchange coupling, such a layer could entirely break exchange coupling if it were thick enough. Thus, MR Tech’s construction clarifies the term by conveying its role—the thinness of an exchange coupling layer is a matter of function. “A POSITA would thus understand that the ‘thin exchange coupling layer’ alters but maintains exchange coupling between adjacent ferromagnetic layers—i.e., that it is sufficiently thin to allow the magnetic moments of adjacent layers to interact such that they generally align in the same direction when a write field is applied to the recording medium.” (Re Decl. ¶ 17.)

For the foregoing reasons, the Court construes Disputed Claim Term 7 as follows: “a layer that is sufficiently thin to alter but not prevent exchange coupling between adjacent ferromagnetic layers.”

8. Disputed Term 8: “domain wall”

MR Tech’s Proposed Construction	Western Digital’s Proposed Construction
The domain wall is the region over which magnetic moments of the material are changing from one direction to another in response to a magnetic field	The domain wall is the region over which magnetic moments of the material are progressively changing from one easy direction to another easy direction in response to a magnetic field

a. **The Positions of the Parties**

MR Tech argues that its construction “reflects a POSITA’s understanding in view of the claim language and the specification, and is consistent with the plain meaning.” (MR Tech Op. Br. at 26.) Specifically, MR Tech points to the claim’s recitation that “the

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nucleation host is coupled to the hard magnetic storage layer by an exchange coupling layer to provide an exchange coupling sufficiently strong to enable a formation of a domain wall across an interface of the hard magnetic storage layer and the nucleation host during reversal.” (*Id.*) MR Tech contends that the “progressively” limitation that Western Digital seeks to import is unclear and “excludes a domain wall between two layers that are separated by an exchange break layer,” but the claim “expressly recites that the domain wall forms across an exchange break layer—an exchange coupling layer is an exchange break layer.” (*Id.* at 27.)

Western Digital argues that “not all instances where a ‘region over which magnetic moments of the material are changing from one direction to another in response to a magnetic field’ . . . would be understood to be a ‘domain wall.’” (Western Digital Op. Br. at 27.) Western Digital asserts that, according to Dr. Bertero, “[t]here are various types of domain walls,” and “[a] person of skill in the art would understand that a domain wall is a region over which the magnetic moments are *progressively* changing—this is what distinguishes domain wall switching from coherent switching.” (*Id.* at 26.)

MR Tech responds that Western Digital’s construction “contradicts the claim language and specification” because “there is no limitation specifying whether switching must be coherent or incoherent” and “the claim itself recites that the domain wall forms across an exchange break layer between the nucleation host and the hard storage layer.” (MR Tech Resp. Br. at 24.)

Western Digital argues that MR Tech’s construction “ignores the difference between coherent switching (no domain wall) and incoherent switching (domain wall).” (Western Digital Resp. Br. at 20.) Western Digital asserts that MR Tech’s patent citations “describe only what a domain wall does, not what it is,” and that “coherent switching without a domain wall is explicitly excluded by the claim language.” (*Id.* at 21.) Western Digital does not dispute “a domain wall between two layers that are separated by an exchange break layer.” (*Id.*)

b. Analysis

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The addition of the word “progressively” into the construction opens the door to confusion between multi-layer and single-layer embodiments, and it is potentially contrary to the patent. The “progressively” limitation would exclude the domain wall formation across an exchange break layer. The Court will not read in a limitation that seemingly contradicts the specification: “[t]he exchange coupling between hard magnetic storage layer 24 and nucleation host 21 can be sufficiently strong to enable the formation of a domain wall across the interface of these layers during reversal.” (’864 Patent at 5:12–16.) Moreover, “progressively” could inaccurately and confusingly convey to a jury that anisotropy is always increasing, which the Court rejected above.

For the foregoing reasons, the Court construes Disputed Claim Term 8 as follows: “The domain wall is the region over which magnetic moments of the material are changing from one direction to another in response to a magnetic field.”

9. Disputed Term 9: “the recording medium is usable for at least one of perpendicular recording or recording on patterned element”

MR Tech’s Proposed Construction	Western Digital’s Proposed Construction
Plain meaning – the recording medium is capable of being used as either perpendicular recording media or bit patterned media	Indefinite

a. The Positions of the Parties

Western Digital argues that “[n]either the claim nor the written description provide any guidance for determining whether a recording medium is ‘usable’ for a particular type of recording.” (Western Digital Op. Br. at 30.) Western Digital asserts, through Dr. Bertero, that “media used for perpendicular recording differs significantly from media used for recording on patterned elements. (Id.) Western Digital contends that the term is indefinite because it “does not teach how the structure claims would be used or optimized in each case or why it would even be advantageous for bit patterned media.”

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(Id.) Western Digital also takes issue with the term “usable” for “perpendicular recording” or “recording on patterned elements” because it is highly subjective, as a POSITA would understand usability “for a specific purpose includes a determination of the error rate of the medium when used for that purpose.” (Id.) Thus, Western Digital argues that the claim term is indefinite because it fails to inform of “the scope of the invention with reasonable certainty and would require undue experimentation.” (Id.)

MR Tech argues that its construction reflects the plain meaning of “usable”: “capable of being used.” (MR Tech Resp. Br. at 25.) MR Tech asserts that “the specification explains that embodiments of the invention are ‘potential candidate[s] for patterned media since the switching field distribution due to an easy axis distribution is reduced.’” (Id.) MR Tech argues that the term is not indefinite as Western Digital alleges, and Western Digital “largely relies on written description and/or enablement defenses, which do not remotely suggest the term cannot be understood.” (Id.) Moreover, MR Tech contends that “usable” is not subjective because “there is no dispute the accused products use perpendicular magnetic recording (PMR) media” and “MR Tech does not allege any recording media in this case is usable for ‘recording on patterned elements.’” (Id.)

b. Analysis

As noted above, in order to meet the “definiteness” requirement, “a patent’s claims, viewed in light of the specification and prosecution history, [must] inform those skilled in the art about the scope of the invention with reasonable certainty.” Nautilus I, 572 U.S. at 910. The party alleging indefiniteness must prove invalidity by clear and convincing evidence. See Nautilus II, 783 F.3d at 1377. The Court concludes that Western Digital has not met its burden

Western Digital does not show by clear and convincing evidence that the term, “the recording medium is usable for at least one of perpendicular recording or recording on patterned element,” is indefinite. Western Digital argues that the patent “does not teach how the structure claims would be used or optimized in each case or why it would even be advantageous for bit patterned media.” While not a focus of the patent, the specification does not skip over at least some discussion of the reason for its use for patterned media: “[t]his makes exchange spring media also a potential candidate for patterned media since the switching field distribution due to an easy axis distribution is

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reduced.” (’864 Patent at 3:44–46.) To ignore this would be to exclude an embodiment. Still, this case, as MR Tech points out, relates to perpendicular magnetic recording media.

MR Tech, in its reply brief,² proposes a “plain meaning” construction that essentially replaces “usable” with the synonymous “capable of being used.” The claim term is commonly used in the industry, is not ambiguous, and does not require any construction for a POSITA to know what it means. See *Phillips*, 415 F.3d at 1314 (“In some cases, the ordinary meaning of claim language as understood by a person of skill in the art may be readily apparent even to lay judges.”). Thus, claim construction for this term “involves little more than the application of the widely accepted meaning of commonly understood words.” *Id.* The term “usable” is not one likely to be misunderstood by a jury, or construed differently by a POSITA, such that construction of that word is necessary—especially one that adds no additional information or clarity like “capable of being used.” The minor adjustments of MR Tech’s construction, however, such as the clarification of “media” rather than “element” and the use of “either” rather than “usable for at least one of” make the disputed term far more clear and understandable for a future jury.

For the foregoing reasons, the Court construes Disputed Claim Term 9 as follows: “the recording medium is capable of being used as either perpendicular recording media or bit patterned media.”

IV. CONCLUSION

For the foregoing reasons, the Court construes the disputed claim terms as follows:

No.	Term	Court’s Construction
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² MR Tech did not brief this term in its opening brief.

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1.	“nucleation host . . . comprises ferromagnetic layers with increasing anisotropy constant K from layer to layer”	“Nucleation host includes two or more ferromagnetic layers which have anisotropy constants K, and the values of the anisotropy constants K for the layers increase as the layers get closer to the hard magnetic storage layer, such that the nucleation host has an overall increase in anisotropy toward the hard magnetic storage layer.”
2.	“ferromagnetic layers”	“Layers with a net magnetic moment Ms greater than zero in the absence of an applied magnetic field”
3.	“nucleation host”	“A structure that includes ferromagnetic layers that assist in switching the hard magnetic storage layer, and optional coupling layers”
4.	“hard magnetic storage layer”	“A magnetic layer that stores information in magnetically oriented bits”
5.	“underlayer”	“One or more layers on which the hard magnetic storage layer is formed”
6.	“wherein Hm(α) is a field to reduce a normalized magnetization from a saturation to -0.5”	No construction necessary.
7.	“a thin exchange coupling layer”	“A layer that is sufficiently thin to alter but not prevent exchange coupling between adjacent ferromagnetic layers”
8.	“domain wall”	“The domain wall is the region over which magnetic moments of the material are changing from one direction to another in response to a magnetic field”

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9.	“the recording medium is usable for at least one of perpendicular recording or recording on patterned element”	“The recording medium is capable of being used as either perpendicular recording media or bit patterned media”
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IT IS SO ORDERED.