United States District Court,
C.D. California.

ORMCO CORP,
v.
ALIGN TECHNOLOGY, INC.

No. SACV 03-16 CAS (ANx)

Oct. 3, 2008.

Richard Marschall, David DeBruin, for Plaintiffs.

Heidi Kim, Anne Rogaski, for Defendants.

Proceedings: Order Construing Claims 37, 38, 45, and 69 of the '444 Patent

CHRISTINA A. SNYDER**, Judge.**

Catherine Jeang Deputy Clerk

Laura Elias Court Reporter / Recorder

I. INTRODUCTION

Plaintiff Ormco Corp. ("Ormco") filed the instant action against defendant Align Technology, Inc. ("Align") on January 6, 2003, alleging that defendant is infringing three related Ormco patents: (1) U.S. Patent No. 5,447,432 ("the '432 patent"); (2) U.S. Patent No. 5,683,243 ("the '243 patent"); and (3) U.S. Patent No. 6,244,861 ("the '861 patent"). Plaintiff later amended its complaint to allege infringement of a fourth patent, U.S. Patent No. 6,616,444 ("the '444 patent").

On May 13, 2004, the Court granted defendant's motion for summary judgment of noninfringement of plaintiff's patents. *See* Ormco, 498 F.3d 1307, 1311 (Fed.Cir.2007), citing *Ormco Corp. v. Align Tech., Inc.,* No. 03-cv-00016 slip. op. (C.D.Cal. May 13, 2004). On August 20, 2004, the Court granted defendant's motion for summary judgment of nonenablement of plaintiff's patents. *See id.,* citing *Ormco Corp. v. Align Tech., Inc.,* No. 03-cv-00016, slip. op. (C.D.Cal. Aug. 20, 2004).

Plaintiff appealed to the Federal Circuit. On August 24, 2007, the Federal Circuit affirmed the Court's grant of summary judgment of noninfringement and nonenablement as to claims 1, 9, and 10 of the '432 patent, claims 1 and 2 of the '243 patent, claims 1, 3, 4, 9-12 and 16-18 of the '861 patent, and claims 1-5, 8-36, 41-44, 46-68, and 70-79 of the '444 patent. Ormco, 498 F.3d at 1320. However, the court reversed the grant of summary judgment of noninfringement and nonenablement of claims 37-40, 45, and 69 of the '444 patent, and remanded. Id.

On March 24, 2008, defendant moved for a Markman hearing, requesting construction of terms in the remaining '444 patent claims at issue. On May 23, 2008, plaintiff and defendant each filed an opening claim construction brief. On June 6, 2008, plaintiff and defendant each filed a reply to the other's opening claim construction brief.

On July 11, 2008, pursuant to a stipulation submitted by the parties, the Court ordered further briefing on additional claim construction. On July 18, 2008, plaintiff and defendant each filed a supplemental opening claim construction brief. On July 25, 2008, plaintiff and defendant each filed a reply to the other's supplemental opening claim construction brief.

On September 22, 2008, this Court issued an order requesting further briefing from plaintiff regarding the consistency of its proposed claim construction with arguments it had made before the Federal Circuit. On September 24, 2008, plaintiff filed a supplemental brief responding the Court's request.

A hearing was held on October 3, 2008. After carefully considering the arguments set forth by the parties, the Court finds and concludes as follows.

II. THE '444 PATENT

The '444 patent, which is the only patent at issue herein, is a patent for "a system and method by which an orthodontic appliance is automatically designed and manufactured from digital low jaw and tooth shape data ..." The ' 444 Patent, Abstract. The system involves scanning a model of the patient's mouth to "produce two or three dimensional images and digitizing contours of selected points." Id. The system allows for a computer to be programmed "to calculate finish positions of the teeth, then to design an appliance to move the teeth to the calculated positions." Id.

In its decision overturning the Court's grant of summary judgment for defendant on claims 37-40, 45, and 69 of the '444 patent, the Federal Circuit distinguished these claims from the others on the ground that claims 37-40, 45, and 69 did not relate to "automatic design or automatic calculation of finish tooth positions." Ormco, 498 F.3d at 1317. Instead, the Court held, they relate to "the preliminary gathering and organization of tooth data as an aid to further unspecified orthodontic treatment or for use in creation of a digital model." *Id*. Because defendant relies on "skilled operators rather than a fully automated computerized process to determine finish positions of the teeth," summary judgment was only proper as to those claims that referred to automatic calculation or design but not to the six claims at issue. *Id*.

III. LEGAL STANDARD

Claim construction begins with an examination of the intrinsic evidence of record, which includes the patent claims, FN1 the specification, FN2 and, if in evidence, the prosecution history FN3 and prior art.FN4 *Vitronics,* 90 F.3d at 1582, 1584; Phillips v. AWH Corp., 415 F.3d 1303, 1316-17 (Fed.Cir.2005) (en banc); V-Formation, Inc. v. Benetton Group SAP et al., 401 F .3d 1307, 1310 (Fed.Cir.2005). Courts also may use extrinsic evidence, for example expert or inventor testimony, to resolve ambiguities in the disputed claim terms, but only if the intrinsic evidence does not resolve the ambiguities.FN5 *Vitronics,* 90 F .3d at 1583-84; Phillips, 415 F.3d at 1317-18. Further, technically extrinsic evidence, such dictionaries, encyclopedias, and technical treatises may be consulted at any time to help determine the meaning of claim terms.FN6 *Vitronics,* 90 F.3d at 1584 n. 6; Texas Digital Sys., Inc. v. Telegenix, Inc., 308 F.3d 1193, 1203 (Fed.Cir.2002); Inverness Med. Switz. GmbH v. Princeton Biomeditech Corp., 309 F.3d 1365, 1378

(Fed.Cir.2002). All such evidence-both intrinsic and extrinsic-should be viewed from the perspective of a person of ordinary skill in the relevant art. Markman v. Westview Instruments Inc., 52 F.3d 967, 979-80 (Fed.Cir.1995) (en banc).FN7

FN1. The first source courts turn to in order to define the scope of the invention is "the words of the claims themselves, both asserted and nonasserted." *Vitronics,* 90 F.3d at 1582. In fact, often, "the most important indicator of meaning" of a disputed claim term "is its usage and context, within the claim itself." Middleton v. 3M, 311 F.3d 1384, 1387 (Fed.Cir.2002). Additionally, claim language cannot be interpreted differently in different claims because claim terms must be interpreted consistently. Southwall Technologies, Inc. v. Cardinal IG Co., 54 F.3d 1570, 1579 (Fed.Cir.1995).

FN2. "When the claim language itself lacks sufficient clarity to ascertain the scope of the claims," the court should turn to the specification. Deering v. Vector Distrib. Sys., 347 F.3d 1314 (Fed.Cir.2003). The specification "contains a written description of the invention that must enable one of ordinary skill in the art to make and use the invention. It is the primary source for claim construction." Phillips v. AWH Corp., 415 F.3d 1303, 1320-21 (Fed.Cir.2005) (en banc); *see also Vitronics,* 90 F.3d at 1582 ("[T]he specification is always highly relevant to the claim construction analysis. Usually, it is dispositive; it is the single best guide to the meaning of a disputed term."); Renishaw PLC v. Marposs Societa Per Azioni, 158 F.3d 1243, 1250 (Fed.Cir.1998) ("Ultimately, the interpretation to be given a term can only be determined and confirmed with a full understanding of what the inventors actually invented and intended to envelop with the claim .... The construction that stays true to the claim language and most naturally aligns with the patent's description of the invention will be, in the end, the correct construction."). However, "[a]lthough claims must be read in light of the specification of which they are a part, ... it is improper to read limitations from the written description into a claim." Tate Access Floors, Inc. v. Maxcess Technologies, Inc. 222 F.3d 958, 966 (Fed.Cir.2000); *see also* Kraft Foods, Inc. v. Int'l Trading Co., 203 F.3d 1362, 1366 (Fed.Cir.2000) ("Although the written description may aid in the proper construction of a claim term, limitations, examples, or embodiments appearing only there may not be read into the claim.").

FN3. The prosecution history "contains the complete record of all the proceedings before the Patent and Trademark Office, including any express representations made by the applicant regarding the scope of the claims [and] is often of critical significance in determining the meaning of the claims." *Vitronics,* 90 F.3d at 1583. In particular, the prosecution history "limits the interpretation of claim terms so as to exclude any interpretation that was disclaimed during prosecution." Southwall, 54 F.3d at 1576.

FN4. In construing asserted claims, courts may consider "prior art proffered by one of the parties, whether or not cited in the specification or the file history, ... to demonstrate how a disputed term is used by those skilled in the art." *Vitronics,* 90 F.3d at 1584; *see also* In re Cortright, 165 F.3d 1353, 1358 ("Prior art references may be 'indicative of what all those skilled in the art generally believe a certain claim term means.' ") (quoting *Vitronics,* 90 F.3d at 1584).

FN5. "The sequence of steps used by the judge in consulting various sources is not important; what matters is for the court to attach the appropriate weight to be assigned to those sources in light of the statutes and policies that inform patent law." Phillips, 415 F.3d at 1324.

FN6. However, in *Phillips,* the Federal Circuit cautioned that "heavy reliance on the dictionary divorced from the intrinsic evidence risks transforming the meaning of the claim term to the artisan into the meaning of the term in the abstract, out of its particular context, which is the specification." Phillips, 415 F.3d at 1321 (holding that a court should not start with a dictionary to determine the plain meaning of a term, and only then turn to the specification in order to determine whether to narrow that meaning in light of the intrinsic evidence).

FN7. By examining relevant dictionaries, encyclopedias and treatises to ascertain possible meanings that would have been attributed to the words of the claims by those skilled in the art, and by further utilizing the intrinsic record to select from those possible meanings the one or ones most consistent with the use of the words by the inventor, the full breadth of the limitations intended by the inventor will be more accurately determined and the improper importation of unintended limitations from the written description into the claims will be more easily avoided.

Texas Digital Systems, 308 F.3d at 1205.
Generally, courts begin with a "heavy presumption" that "the terms in the claim are to be given their ordinary and accustomed meaning." Johnson Worldwide Assoc., Inc. v. Zebco Corp., 175 F .3d 985, 989 (Fed.Cir.1999); *see also* Gart v. Logitech, Inc., 254 F.3d 1334, 1341 (Fed.Cir.2001). This ordinary and customary meaning is the meaning a claim term "would have to a person of ordinary skill in the art at the time of the invention." Innova/Pure Water, Inc. v. Safari Water Filtration Sys., 381 F.3d 1111, 1116 (Fed.Cir.2004). "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." Phillips v. AWH Corp., 415 F.3d 1303, 1314 (Fed.Cir.2005) (en banc).

"An accused infringer may overcome this 'heavy presumption' and narrow a claim term's ordinary meaning, but he cannot do so simply by pointing to the preferred embodiment or other structures or steps disclosed in the specification or prosecution history." CCS Fitness, Inc. v. Brunswick Corp., 288 F.3d 1359, 1366 (Fed.Cir.2002) (quoting Johnson Worldwide, 175 F.3d at 989). Rather, "a court may constrict the meaning of a claim term in at least one of four ways." *Id*. First, the claim term will not be given its ordinary meaning "if the patentee has chosen to be his or her own lexicographer by clearly setting forth an explicit definition for a claim term." Johnson Worldwide, 175 F.3d at 990; *see also* Texas Digital Systems, Inc. v. Telegenix, Inc., 308 F.3d 1193, 1204 (Fed.Cir.2002) ("Indeed, the intrinsic record may show that the specification uses the words in a manner clearly inconsistent with the ordinary meaning reflected, for example, in a dictionary definition. In such a case, the inconsistent dictionary definition must be rejected."). Second, a claim term will not have its ordinary meaning "if the intrinsic evidence shows that the patentee distinguished that term from prior art on the basis of a particular embodiment, expressly disclaimed subject matter, or described a particular embodiment as important to the invention." CCS Fitness, 288 F.3d at 1366-67; *see e.g.,* Spectrum Int'l, Inc. v. Sterilite Corp., 164 F.3d 1372, 1378 (Fed.Cir.1998); SciMed Life Sys., Inc. v. Adv. Cardiovascular Sys., Inc., 242 F.3d 1337, 1343-44 (Fed.Cir.2001); Toro Co. v. White Consol. Indus., Inc., 199 F.3d 1295, 1301 (Fed.Cir.1999). Third, a claim term will not receive its ordinary meaning "if the term 'chosen by the patentee so deprive[s] the claim of clarity' as to require resort to the other intrinsic evidence for a definite meaning." CCS Fitness, 288 F.3d at 1367 (quoting Johnson Worldwide, 175 F.3d at 990). Fourth, if a claim is phrased in step-or mean-plus-function format, a claim term does not cover more than

the corresponding structure or step disclosed in the specification, and the equivalents thereto. 35 U.S.C. s. 112 para. 6; *CCS Fitness,* 28 F.3d at 1367.

Thus, although courts may look to intrinsic and extrinsic evidence, courts "perform this consultation" to determine whether any of the reasons for abandoning the ordinary meaning are applicable. Gart v. Logitech, Inc., 254 F.3d 1334, 1341 (Fed.Cir.2001). In the absence of one or more of the circumstances set forth above, courts must follow the general rule that claim terms are to be given their ordinary meaning. *Id.;* Inverness Med. Switz. GmbH v. Princeton Biomeditech Corp., 309 F.3d 1365, 1370-73 (Fed.Cir.2002) (holding that nothing in the patent's claim language, specification, or prosecution history contradicted or altered the plain meaning of the unambiguous claim term "mobility" and thus it was error for the district court to construe the claim term at issue not in accordance with its plain meaning).

IV. DISCUSSION

Plaintiff and defendant dispute the proper construction of the term "landmark parameters" as used in claim 38, and the terms "data," "data thereof," "shape," "shapes," "representations," and "represent" as used in claims 37, 45, and 69.

As stated above, the Court begins with the "heavy presumption" that a claim term should be construed according to its ordinary and accustomed meaning as viewed by a person skilled in the art. Johnson Worldwide Assocs. v. Zebco Corp., 175 F.3d 985, 989 (Fed.Cir.1999). In determining the ordinary and customary meaning of claim terms, the Court relies heavily on the intrinsic evidence. First, the Court looks to the claim language. *See Dow Chem Co. v.. Sumitomo* Chem. Co., 341 F.3d 1370, 1372 (Fed.Cir.2001); Vitronics Corp., 90 F.3d 1576, 1582 (Fed.Cir.1996). Second, the Court will turn to the specification, which, as stated above, is the "single best guide to the meaning of a disputed term." Phillips v. AWH Corp., 415 F.3d 1303, 1315 (Fed.Cir.2005) (en banc). In doing so the Court will, of course, take care to avoid "importing limitations [from the specification] into the claims." FN8 Texas Digital, 308 F.3d at 1204.

FN8. Additionally, dictionaries, a special form of extrinsic evidence, are particularly useful as well. *Tex Digital Sys., Inc. v. Telegenix, Inc., 308* F.3d 1193, 1203 (Fed.Cir.2002); Inverness Med. Switz. Gmbh v. Princeton Biomeditech Corp., 309 F.3d 1365, 1372 (Fed.Cir.2002). In *Phillips,* the Federal Circuit affirmed that courts may "consult dictionaries and technical treatises 'at any time to better understand claim terms.' " Phillips, 415 F.3d at 1321 (quoting Vitronics Corp. v. Conceptronic, 90 F.3d 1576, 1584 n. 6 (Fed.Cir.1996)). However, *Phillips* cautioned that courts must take care to attach the appropriate weight to dictionary definitions. *Id.* at 1324. Thus, it is important to compare the general dictionary meanings of a claim term with the use of the claim term in the context of the patent. Brookhill-Wilk 1, LLC v. Intuitive Surgical, Inc., 334 F.3d 1294, 1300 (Fed.Cir.2003). The intrinsic record should be consulted to ensure that the meaning (or meanings) chosen is the one "most consistent with the use of the words by the inventor." *Id* .

A. CONSTRUCTION OF "LANDMARK PARAMETERS" IN CLAIM 38

i. CLAIM LANGUAGE AND SPECIFICATION

Claim 38 of the '444 patent reads:

The method of claim 37 wherein: the producing of the separate digital representations from the generated

data includes the operator-interactive selection on a computer display of *landmark parameters* of individual teeth. ' 444 Patent, Col. 71:29-34 (emphasis added).

Because claim 37 is explicitly referenced in claim 38, the text of claim 37 is relevant for the purposes of claim construction as well. Claim 37 reads:

A method of processing digital data for use in facilitating the orthodontic treatment of a patient comprising: scanning three-dimensional surfaces that have the shapes of a plurality of the teeth of a patient and generating data thereof; from the generated data, producing separate digital representations of the shapes of each of a plurality of individual teeth of the patient." '444 Patent, Col. 71: 21-29.

Plaintiff argues that the proper construction of "landmark parameters" is "locations on the tooth used to derive attributes of the tooth for modeling tooth movement." Plaintiff's Opening Brief ("POB") at 8. In other words, "landmark parameters" should be construed to refer to "more than mere locations on the teeth." POB at 9. This construction is proper, plaintiff argues, because it is consistent with the "scope and meaning given to that term in the '444 patent's specification." Plaintiff's Reply Brief ("PRB") at 1. Plaintiff explains how its construction of landmark parameters fits within the context of the patent:

To model orthodontic treatment, 3D data associated with individual teeth must be identified from the data generated by the scan ... After the profiles [of the teeth] are obtained, additional information is added to the profiles so that the movement of the teeth to new positions can be modeled. The additional information added to the profiles includes the 'landmark parameters' referred to in claim 38 ... Without the selection of landmark parameters and derivation of other attributes of the tooth, the tooth movement steps that follow could not be performed. POB at 4-5.

Thus, the specification as a whole, plaintiff argues, clearly entails an operator selecting a series of points on the tooth (the "landmark parameters"), from which other parameters are derived, which are then used to model tooth movement. POB at 4-5; *See* '444 Patent, Col. 24:35-47. Therefore, a key attribute of the landmark parameters is that they give the operators the ability to model tooth movement. POB at 5.

To further support this argument that the term "landmark parameters" refers "to more than mere locations on the teeth," plaintiff cites passages in the specification which indicate that "landmark parameters" are specifically used to "derive other attributes of the tooth, which are then used in calculation to model tooth movement." POB at 9-10. Apart from claim 38, the specification's only other mention of the term "landmark parameters," is in the context of Figures 6A-6E, which depict "mathematical tooth profile plots." *See* Defendant's Opening Brief ("DOB") at 8; '444 Patent, Col. 9: 38-40. The figures depict "selected landmark parameters" is specific points on the tooth, but the term is not explicitly defined. *See* '444 Patent, Col. 9: 38-40. However, plaintiff argues that these figures help to support its construction. For example, Figure 6E depicts individual tooth data, with landmark parameters included, and with "the CLA tilt for each tooth" set to the "desired LAI angle." POB at 6; *See* ' 444 Patent, Col. 44: 12-28. Plaintiff argues that "[b]ecause the CLA is necessary to model tooth movement and the CLA cannot be derived without the operator selected landmark parameters, the landmark parameters are required in order to model tooth movement." POB at 6.

Furthermore, the terms "landmarks" and "parameters" are used throughout the specification. For example, plaintiff cites the following passages which use the terms "landmark" and "parameter":

(600) The dental analysis step in which the orthodontic landmarks of the teeth are identified:

A minimum number of points on the tooth profiles are selected. From the selected points, for each tooth, other parameters are derived ... POB at 9, citing '444 Patent, Col. 24: 35-47.

(600) Tooth Landmark Identification Analysis Step ...

Using the displayed images ... specific landmark points are chosen ... from these landmarks, (615) the crown long axis CLA of each molar and bicuspid is determined. POB at 10, citing '444 Patent, Col. 39: 55; 40: 5-18.

Plaintiff cites to these passages to illustrate that the specification "describes the use of the selected landmark parameters to 'derive' other attributes of the tooth, which are then used in calculations to model tooth movement." POB at 10.

Defendant, however argues that plaintiff's definition goes beyond the scope of claims 37 and 38, and that the proper construction of "landmark parameters" is instead "more than one professionally recognized anatomical feature of teeth." DOB at 2. To support this position, defendant argues that while the references to "landmarks," "parameters," and "landmark parameters" in the specification are instructive on what "landmark parameters" are, they are not instructive on how landmark parameters are used in the step described in claim 38. DOB at 9.

Specifically, defendant argues that the specification language cited by plaintiff indicating that landmark parameters are used to "derive attributes of the tooth for modeling tooth movement" does not support plaintiff's construction, because it describes a different step in the overall system than that described by claim 38. Claim 38, defendant argues, refers to the step which involves "scanning teeth, digitizing data, and separating the data into smaller digital representations." Defendant's Reply Brief ("DRB") at 1. Plaintiff, defendant argues, supports its definition by relying on specification language regarding the use of landmark parameters in the "finish tooth profile analysis step," a step that comes *after* the step described in claim 38. DRB at 1. Defendant references a flow chart in the patent depicting "one preferred embodiment of the process of the present invention," which delineates two separate steps in the process: step 94 ("digitize and input information") and step 95 ("finish tooth position analysis"). *See* '444 Patent, Col 7: 17-19; Fig 2. Defendant argues that it "is abundantly clear that the 'operator-interactive selection on a computer display of landmark parameters of individual teeth' occurs during the process of producing separate digital representations of teeth," in other words, as part of step 94. DRB at 4. It is not, defendant argues, for any purpose of "modeling tooth movement." DRB at 4. This step comes later, during step 95, the "finish tooth position analysis." DRB at 11, citing Fig. 2. Therefore, defendant argues, references by plaintiff "to the selection or derivation of 'landmark parameters' during the 'tooth profile analysis' step (step 95) is outside the scope of the 'producing step' (step 94) of Claim 38 and the particular use of 'landmark parameters' in step 95 cannot bear on the meaning of that term in Claim 38." DRB 14.

Furthermore, defendant argues that there is no language in claims 37 or 38 limiting claim 38 to the purpose of "modeling tooth movement." DRB at 4. The preamble to claim 37-"for use in orthodontic treatment"-is not limiting, defendant argues, because it only states an intended use, but does not recite "essential structures or steps of the claim." *See* Symantec Corp., v. Computer Ass'ns, Int'l, Inc., 522 F.3d 1279, 1288 (Fed.Cir.2008) ("a preamble is construed as a limitation if it recites essential structure or steps, or if it is necessary to give life, meaning, and vitality to the claim. A preamble is not limiting, however, "where a patentee defines a structurally complete invention in the claim body and uses the preamble only to state a

purpose or intended use for the invention.") In other words, defendant argues that

[n]othing in the body of Claims 37 and 38 limits the scanning and digitizing steps to orthodontic treatment, let alone 'modeling tooth movement.' Similarly, nothing in the body of Claims 37 and 38 would prevent these processes from being used in other dental applications or orthodontic applications other than moving teeth." DRB at 7.

Plaintiff, defendant argues, is essentially trying to extract a limitation from the specification-"modeling tooth movement"-and add it to claim 38. DRB at 8, citing Teleflex Inc. v. Ficosa N. Am. Corp., 299 F.3d 1313, 1326 (Fed.Cir.2002) ("claims must be read in view of the specification, but limitations from the specification are not to be read into the claims.")

Keeping in mind that the specification is the "single best guide to the meaning of a disputed term," the Court finds that plaintiff's proposed claim construction is persuasive. *See* Phillips v. AWH Corp., 415 F.3d 1303, 1315 (Fed.Cir.2005).FN9 As plaintiff argues, the specification as a whole indicates that a key attribute defining "landmark parameters" is that they are used to derive positions to model tooth movement, and thus are distinguishable from "other more generic locations on the tooth that are not used to derive other tooth attributes needed for modeling tooth movement." *See* POB at 10, 11. Although defendant argues that the specification language cited by plaintiff is not instructive because it describes steps in the overall process other than that which occurs in claim 38, this argument is not persuasive, because the references in the specification that indicate the purposes of "landmark parameters" are relevant to the determination of what "landmark parameters" are. *See* DOB at 9. Similarly, rather than reading a limitation from the specification into the claim, as defendant argues, plaintiff's proposed construction merely defines "landmark parameters" in a way that is consistent with the specification.FN10

FN9. At oral argument, defendant argued that under Phillips, 415 F.3d at 1316, the Court should read the claim terms as broadly as possible. In *Phillips,* the Court held that the claims should be given "their broadest reasonable construction *in light of the specification as it would be interpreted by one of ordinary skill in the art*." *Id*. at 1316 (emphasis added). In other words, "it is entirely appropriate for the court, when conducting claim construction to rely heavily on the written description [in the specification] for guidance as to the meaning of the claims." *Id* . at 1217. Thus, while the Court seeks to interpret the terms within the claims broadly, it does so within the context of the specification, as "the words of patent claims have the meaning and scope with which they are used in the specification ..." Id. at 1315.

FN10. As plaintiff argued at oral argument, the Federal Circuit decision in the instant action demonstrates that interpreting claims in light of the specification is not equivalent to reading limitations into the claims. *See* Ormco, 498 F.3d at 1313. In its decision, the Federal Circuit held that all but the remanded claims must be read to require "automatic determination of finish tooth positions," regardless of the fact that the plain language of the claims themselves did not contain such express limitations, because such a reading "most naturally aligns with the patent's description of the invention." *Id*.

Moreover, plaintiff's construction is preferable to defendant's, because plaintiff's construction gives meaning to both "landmark" and "parameter," while defendant uses the terms more or less interchangeably. *See* POB at 8; DOB at 12; *See* Merck & Co. v. Teva Pharms, USA, Inc., 395 F.3d 1364, 1372 (Fed.Cir.2005) ("claim construction that gives meaning to all the terms of the claim is preferred over one that does not do so").

Defendant argues that the term "landmark parameters" is used in the same way that the terms "landmarks" and "parameters" are used in other places throughout the specification, which suggests that all three terms are intended to interchangeably refer to "professionally recognized anatomical features of teeth." DOB at 12. Plaintiff's definition, however, is more specific, construing "landmark parameters" as specific types of "landmarks." PRB at 6. In other words, plaintiff's construction, unlike defendant's, gives independent meaning to the term "parameter," which "conveys the purpose served by these particular landmarks in the disclosed system, i.e., the landmarks are used to derive attributes of the teeth ... for modeling tooth movement." PRB 4-5. This construction of the term "parameter" is also consistent with dictionary definitions of "parameter," which, plaintiff demonstrates, "connote the idea that a parameter is some sort of value or variable that is used to obtain or derive further information." POB at 10-11. Therefore, it is reasonable to construe the claim term "landmark parameters" to "refer to the selected locations as well as the ability of those locations to derive additional attributes of the tooth, which enables the modeling of tooth movement." POB at 11.

Furthermore, plaintiff is persuasive in arguing that defendant's proposed construction-"more than one professionally recognized anatomical feature of teeth"-is flawed, because "landmark parameters do not necessarily have to correspond to professionally recognized locations on the teeth." PRB at 7. For example, plaintiff points to the fact that some of the points labeled "landmark parameters" depicted on figure 6D are somewhat arbitrarily chosen; "because the goal is to get a midpoint of the line between these two points and derive further information ... the locations of the points themselves are not critical and can vary ." PRB at 7.

For these reasons, the Court adopts plaintiff's proposed construction of the term "landmark parameters."

ii. PLAINTIFF'S POSITION BEFORE THE FEDERAL CIRCUIT

Defendant argues that plaintiff's claim construction is inconsistent with the position plaintiff took before the Federal Circuit. Specifically, defendant cites plaintiff's brief before the Federal Circuit, in which plaintiff stated that claims 37-40, 45, and 69 "are directed to methods of processing digital data about the teeth, not to determining finish tooth positions." DRB at 5; Ex. 3 at 5. Furthermore, the brief stated "no limitation in claim 37 imposes requirements regarding the movement or arrangement of teeth or the determination of tooth positions." DRB at 5; Ex 3 at 6. Defendant argues that these positions are the exact opposite of plaintiff's present position that claim 38 "does involve tooth movement." DRB at 5. However, an argument that claims 37-40, 45, and 69 do not involve determining finish tooth positions is not inconsistent with the construction urged by plaintiff, which is that claim 38 is directed to processing digital data about the teeth, including selection of "locations on the tooth used to derive attributes of the tooth for modeling tooth movement."

Defendant also argues that the Federal Circuit remanded claim 38 specifically because the court determined that claim 38 did not involve tooth movement. DRB at 2. The Federal Circuit distinguished the six remanded claims on the ground that, unlike the other claims, they did not relate to "automatic design or automatic calculation of finish tooth positions." Ormco Corp., 498 F.3d at 1317. Instead, they relate to "the preliminary gathering and organization of tooth data as an aid to further unspecified orthodontic treatment or for use in creation of a digital model." *Id*. The Federal Circuit stated that "such preliminary gathering and organization do not, by themselves, determine finish tooth positions." *Id*.

However, defendant's argument is not persuasive. As plaintiff argues in its September 24, 2008 brief, the phrase in plaintiff's proposed claim construction "for modeling tooth movement" does not indicate that the

claim itself requires the digital representations of teeth be moved to finish positions. *See* Plaintiff's September 24, 2008 Brief at 2. Therefore, the construction urged by plaintiff does not contradict the Federal Circuit's finding that the "preliminary gathering and organization" described in claim 38 does not, in itself "determine finish tooth positions." *See* Ormco Corp, 498 F.3d at 1317. Instead, the proposed construction merely defines which specific locations on the tooth are chosen in the step described in claim 38, regardless of whether or not representations of the teeth are eventually moved to finish tooth positions. Plaintiff's September 24, 2008 Brief at 2.

B. CONSTRUCTION OF "DATA," "SHAPE," "SHAPES," "DATA THEREOF," "REPRESENTATIONS" AND "REPRESENT" IN CLAIMS 37, 45, AND 69 OF THE '444 PATENT

Plaintiff and defendant also dispute the proper construction of the following terms and phrases, as they appear in claims 37, 45, and 69:(1) [claim 37] "scanning three-dimensional surfaces that have the shapes of a plurality of the teeth of a patient and generating data thereof;" (2) [claim 45] "scanning the shapes of the teeth ... and generating data thereof;" (3) [claim 69] "receiving initial data that contains a 3D representation of a plurality of the patient's teeth;" (4) "shape" and "shapes;" (5) "data thereof;" and (6) "representations" and "represent." The Court begins by examining the language of each of the claims at issue:

Claim 37: A method of processing digital data for use in facilitating the orthodontic treatment of a patient comprising:

scanning three-dimensional surfaces that have the shapes of a plurality of the teeth of a patient and generating data thereof;

from the generated data, producing separate digital representations of the shapes of each of a plurality of individual teeth of the patient. '444 Patent, Col. 71: 21-29.

Claim 45: A method of processing digital data for use in facilitating the orthodontic treatment of a patient comprising:

scanning the shapes of the teeth of a patient directly from the mouth of the patient and generating date thereof;

grouping the generated data into separate digital representations of the shapes of each of a plurality of individual teeth. '444 Patent, Col. 71: 66-67; 72: 1-5.

Claim 69: A computer-implemented method for use in generating digital models of a patient's teeth, the method comprising:

receiving initial data that contains a 3D representation of a plurality of the patient's teeth;

identifying multiple groups of data, each group containing a plurality of points from the initial data that separately digitally represent the shape of one of the teeth. '444 Patent, Col. 74:12-19.

Plaintiff proposes that the term "data" in claim 37 ("scanning three-dimensional surfaces that have the shapes of a plurality of the teeth of a patient and generating data thereof"), claim 45 ("scanning the shapes of the teeth ... and generating data thereof"), and claim 69 ("receiving initial data that contains a 3D

representation of a plurality of the patient's teeth") should be construed as "three dimensional data from two or more teeth that is undifferentiated in the sense that the data points are not identified as data associated with a particular tooth." Plaintiff's Opening Supplemental Brief (POSB), Appendix 1. Defendant, however, argues that the term "data" in claims 37 and 45 should be construed as data that "can be two-dimensional or three-dimensional." Defendant's Opening Supplemental Brief (DOSB), Appendix 1.

Plaintiff also argues that the term "shape" or "shapes" (of a tooth or teeth) as used in the claims should be construed to mean "the geometric shape of the tooth (or teeth) in three dimensions." POSB, Appendix 1. Defendant argues that the term "shape" or "shapes" should be construed as "part or all of geometric forms of an object in two or three dimensions." DOSB, Appendix 1.

Plaintiff further argues that "data thereof" as used in the claims should be construed as "data in three dimensions of the three-dimensional surfaces that have the shapes of multiple teeth." POSB, Appendix 1. Defendant, however, argues that "data thereof" should be construed as "data thereof (where the data can be two-dimensional or three-dimensional)." DOSB, Appendix 1.

Finally, plaintiff argues that "representation" (of) or "represent" (the shape of the teeth) as used in the claims should be construed as "a representation in three-dimensions of the shape of teeth." POSB, Appendix 1. Defendant, however, argues that "representation" and "represent" should be construed as "representation or represent in two or three dimensions." DOSB, Appendix 1.

i. CLAIM CONSTRUCTION WITH REGARD TO DIMENSIONS

The dispute between the parties largely centers on the question of whether the terms "data," "shape," "shapes," "data thereof," "representation" and "represent" in claims 37, 45, and 69 refer only to three-dimensional "data," "shapes," and "representations," or whether they include two-dimensional "data," "shapes," and "representations" as well.

Plaintiff argues that the specification supports its construction of the term "data" as being limited to three-dimensional data. Plaintiff explains that the patent contains two methods for generating three-dimensional digital representations of teeth. The first method uses a scanning process to display a two-dimensional image of the patient's teeth. POSB at 2. The two-dimensional data is then combined to form a three-dimensional representation of the shapes of the patient's teeth. Plaintiff's Responding Supplemental Brief (PRSB) at 3. By contrast, the second method "uses a laser or other 3D scanning technique to input undifferentiated 3D data of the shapes of a plurality of teeth, which then must be separated into 3D digital representations of the shapes of each of the individual teeth." POSB at 1. The three claims at issue, plaintiff argues, are directed to this second method; none of them "cover a process that only generates two-dimensional data or two-dimensional tooth profiles," because "such data is insufficient to model the tooth movement in accordance with the patent." POSB at 1. Therefore, "data," as used in the three claims at issue, must be construed as being limited to three-dimensional data exclusively.

Plaintiff further argues that construing "shape," "shapes," "represent," and "representations" to refer to three-dimensional representations of teeth is also consistent with how the terms are used in both the claims and specification. POSB at 7. For example, it argues that because the first part of claim 37 specifically refers to three-dimensional shapes, the second part of the claim must be read as referring to three-dimensional shapes as well. POSB at 7. Claim 69, plaintiff argues, also clearly refers to three-dimensional shapes, because it specifies that the data containing those shapes is three-dimensional. POSB at 10. Plaintiff also argues that

when "the '444 patent disclosure refers to digital 'shapes' of the teeth, it refers to digital 3D representations of the teeth ... [t]he '444 patent disclosure never refers to 2D tooth profiles as representing the 'shapes' of the teeth." POSB at 7. Defendant disputes this last contention however, arguing that certain passages in the patent do, in fact, refer to two-dimensional shape data.FN11 Defendant's Responding Supplemental Brief (DRSB) at 6.

FN11. Passages from the patent cited by defendant: "[j]aw and horizontal tooth dimensional and *shape* information [are] derived from a video image produced by the video scanner." (Arguing that a person of ordinary skill in the art would know that images produced by a video scanner are two-dimensional); "In certain embodiments of the invention, images are digitized to produce the tooth and jaw *shape* data. Preferably, the images include a scanner which, in one form, generates a video image from which selected points are digitized to produce data ... Alternatively, three dimensional imaging of the teeth and jaw of the patient is carried out with laser or other scanner to form full three dimensional images ..." (Arguing that it is clear that the preferred embodiment is therefore two-dimensional shape data, and the alternative is three-dimensional shape data)

Defendant, however, argues that "claim limitations that do not specify that three-dimensional ("3D") data is required should not now be rewritten to require 3D data." DOSB at 1. Defendant argues that throughout the claims and specifications, plaintiff in many cases specified whether two-dimensional or three-dimensional data, shapes, and representations were at issue; therefore, defendant argues, where plaintiff did not specify, it did not intend to limit claim terms to three-dimensions. DOSB at 1; *See* DOSB at 4 (arguing that claims 37 and 45 specify that the shapes being scanned must be three-dimensional, but do not specify the data resulting from the scans must be three-dimensional; claim 70 specifically requires data to be expressed in three dimensions.); DRSB at 6 (claim 61 refers to "a three dimensional representation;" claim 60 refers to "three-dimensional tooth shape geometry").

However, this argument, alone, is not sufficient to defeat the evidence presented by plaintiff indicating that interpreting "data" "shapes" and "representation" as exclusively three-dimensional is consistent with the specification. The fact that the patent does not explicitly specify that three-dimensional "data" "shapes" and "representations" are envisioned is not dispositive, because, as plaintiff points out, the context in which a term is used can make it clear to a scientific audience what the term is referring to without requiring more explicit definition. PRSB at 1.FN12

FN12. Furthermore, at oral argument, plaintiff persuasively refuted defendant's argument that the patent clearly specifies when shapes are exclusively three-dimensional. Although defendant argues that claims 23 and 60 explicitly refer to three-dimensional "shapes," in fact these claims refer to three-dimensional "tooth shape geometry," indicating that three-dimensional modifies "geometry" and distinguishing these claims from the claims at issue, where "geometry" is not used. '444 Patent, Col. 70: 12-25; '444 Patent, Col. 73: 22-29. Plaintiff argues that, in fact, the term shape is consistently unmodified throughout the patent, indicating that the term "shape" consistently refers to three-dimensional shapes.

In fact, defendant's construction of "data," "shape," and "representation" as allowing both two-dimensional and three-dimensional data is flawed in that it is at times inconsistent with the plain terms of the claim. For example, defendant's argument that nothing in the language of claim 69 requires the "multiple groups of data" to be three-dimensional does not appear to be the best construction, because the first step of the claim-

"receiving initial data that contains a 3D representation of a plurality of the patient's teeth"-strongly indicates that the second step-"identifying multiple groups of data" and "separately digitally represent the shape of one of the teeth"-contemplates data and shapes in three dimensions. *See* PRSB at 8; DOSB at 4, n. 2.

Defendant also attempts to support its construction by arguing that plaintiff's proposed construction improperly excludes embodiments disclosed in the specification, including one disclosed in the patent abstract: "a system and method ... provides for preferably scanning a model of the patient's mouth to produce two or three dimensional images and digitizing contours and selected points ." DOSB at 9, quoting the '444 Patent, Abstract. However, as plaintiff argues, the Federal Circuit has explicitly held that when the language of a claim indicates that it is limited to one or more embodiments, other preferred embodiment can be excluded. PRSB at 3; *See* TIP Systems., LLC v. Phillips & Brooks/Gladwin, Inc., 2008 WL 2437754, (Fed. Cir. June 18, 2008).

Defendant also disputes plaintiff's argument that "3D data must be required to allow tooth movement to be modeled," on the basis that the claims at issue do not have to do with tooth movement. DRSB at 4. The three claims at issue, defendant argues, were not remanded by the Federal Circuit specifically because they do not involve tooth movement. DRSB at 4. Moreover, defendant cites plaintiff's argument before the Federal Circuit that the claims at issue "are directed to methods of processing digital data about the teeth, not to determining finish tooth positions." DRSB at 4, citing Ex 3, p35 (Plaintiff's Brief before Fed. Cir. at 35.) However, the same reasons that the Court rejected these arguments with regard to the construction of "landmark parameters" apply here as well. *See* Part IV.A.ii. Specifically, the Court finds that plaintiff's constructions do not impose a requirement that digital representations of teeth be moved to finish positions in the steps described in the claims at issue, but rather seek to define the terms in the context of the overall system and method described in the specification.

Finally, although defendant argues that dictionary definitions of "data," "shape," and "representation" do not include a three-dimensional requirement, this argument is not dispositive. DOSB at 7. The Federal Circuit has held that "[i]t is well established that dictionary definitions must give way to the meaning imparted by the specification." In re Johnston, 435 F.3d 1381, 1384 (Fed.Cir.2006). Thus, as plaintiff argues, "the issue is not what these words mean in the abstract but how those terms are used to describe the invention disclosed in the '444 patent." PRSB at 10.

ii. PLAINTIFF'S PROPOSED "UNDIFFERENTIATED" CONSTRUCTION

In addition, the parties also dispute whether the claims should be construed to require that the "data" generated be "undifferentiated." *See* POSB at 5. Plaintiff uses the language of the claims themselves to support its argument that "data" should be construed as "undifferentiated in the sense that the data points are not identified as data associated with a particular tooth." *See* POSB, Appendix 1. For example, plaintiff argues that "the data from the scanning step," that is, the first step, contained in claim 37 must be undifferentiated, "because the second step of the claim assumes that the data used in the second step is not yet in a format where it is correlated to the shapes of each tooth." POSB at 5-6. "The second step of claim 37-'producing *separate* digital representations of the shapes of each of a plurality of teeth'-would make no sense and be rendered meaningless if this data was already separated and differentiated on a tooth-by-tooth basis as it was scanned." POSB at 6. Plaintiff argues that similar requirements in claims 45 and 69 further support its argument. For example, the second step of claim 45 ("grouping the generated data into separate digital representations of the shapes of each of a plurality of individual teeth") would be rendered

meaningless if the data was already separated and differentiated when it was scanned. POSB at 9.

Defendant, however, argues that "nothing in the language of the asserted claims or otherwise in the specification precludes scanning individual teeth one at a time or requires 'separation' of the data of the first step." DRSB at 9. For example, defendant argues that plaintiff's argument that defendant's construction would render the second step of claim 37-"producing separate digital representations"-meaningless is unfounded, because "producing separate digital representations" can occur regardless of whether the teeth were scanned one at a time or all at once. DRSB at 9. Specifically, defendant argues that the scan, which occurs in the first step, "captures information that is extraneous to the tooth or teeth being scanned." DRSB at 9. The second step addresses this by producing separate representations of the teeth, eliminating the extraneous information about the gumlines or neighboring teeth. DRSB at 9.

Despite defendant's arguments to the contrary, the Court finds that plaintiff's construction comports more closely with the plain language of the claims. The reference in the second step of claim 37 to "producing separate digital representations of the shapes of each of a plurality of teeth," for example, would most clearly be read to indicate that the data generated in the first step did not already contain separate representations but was instead "undifferentiated in the sense that the data points are not identified as data associated with a particular tooth."

IV. CONCLUSION

For the foregoing reasons, the Court determines that the proper construction of "landmark parameters" in claim 38 is "locations on the tooth used to derive attributes of the tooth for modeling tooth movement." Furthermore, the Court concludes that the term "data" as used in claims 37, 45, and 69 is properly construed as "three dimensional data from two or more teeth that is undifferentiated in the sense that the data points are not identified as data associated with a particular tooth." Furthermore, the terms "shape" or "shapes" of tooth or teeth as used in claims 37, 45, and 69 is properly construed as " 'shape' or 'shapes' in three dimensions." The term "data thereof" as used in claims 37 and 45 should be construed as "data in three dimensions of the three-dimensional surfaces that have the shapes of multiple teeth." Finally, the terms "representation" of or "represent" as used in claims 37, 45, and 69 is also limited to "representation in three-dimensions."

IT IS SO ORDERED.

C.D.Cal.,2008.
Ormco Corp. v. Align Technology, Inc.