UNITED STATES DISTRICT COURT
CENTRAL DISTRICT OF CALIFORNIA

CIVIL MINUTES - GENERAL

Case No.	CV 12-10322-GW(FFMx)	Date	July 11, 2018
Title	*McRO, Inc., v. Namco Bandai Games America, Inc., and Related Actions*		

Present: The Honorable	GEORGE H. WU, UNITED STATES DISTRICT JUDGE	
Javier Gonzalez	None Present	
Deputy Clerk	Court Reporter / Recorder	Tape No.

Attorneys Present for Plaintiffs:	Attorneys Present for Defendants:
None Present	None Present

PROCEEDINGS: IN CHAMBERS - COURT ORDER

Attached hereto is the Court's Amended Tentative Ruling on Scheduled Motions.

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Initials of Preparer JG

McRO, Inc., d.b.a. Planet Blue v. Namco Bandai Games America, Inc., Case No. CV 12-10322-GW (FFMx) (LEAD TRACK 1 CONSLIDATED CASE). Amended Tentative Ruling on Scheduled Motions:

(1) **Defendants' Motion for Summary Judgment of Non-Infringement or Invalidity** (Docket No. 643); Plaintiff's Opposition (Docket No. 668 (public); Docket No. 686 (sealed)); Defendants' Reply (Docket No. 709); Defendants' Response to Statement of Alleged Disputes of Material Fact (Docket No. 710); Defendants' Request for Evidentiary Rulings on Specified Objections (Docket No. 711); Plaintiff's Response to Defendants' Request for Evidentiary Rulings (Docket No. 727)

(2) **Plaintiff's Motion for Summary Judgment of No Anticipation** (Docket No. 640); Defendants' Opposition (Docket No. 681); Plaintiff's Reply (Docket No. 697); Plaintiff's Response to Statement of Genuine Disputes (Docket No. 698)

(3) **Defendants' Motion for Summary Judgment or Partial Summary Judgment of Non-Infringement Under 35 U.S.C. § 271(g)** (Docket No. 638); Plaintiff's Opposition (Docket No. 675 (public); Docket No. 690 (sealed)); Defendants' Reply (Docket No. 704); Defendants' Response to Statement of Genuine Disputes (Docket No. 705); Defendant Square's Request for Evidentiary Ruling on Specified Objections (Docket No. 706-3 (public – attached to application to seal); Docket No. 732 (sealed)); Plaintiff's Response to Request for Evidentiary Rulings (Docket No. 729 (public); Docket No. 726-1 (sealed – attached to application to seal))

(4) **Defendants' Motion for Summary Judgment of No Willful Infringement** (Docket No. 634 (public notice of motion); Docket No. 655 (sealed)); Plaintiff's Opposition (Docket No. 678 (public); Docket No. 691 (sealed)); Defendants' Reply (Docket No. 712 (public); Docket No. 719 (sealed)); Defendants' Response to Statement of Genuine Disputes (Docket No. 713 (public); Docket No. 720 (sealed)); Defendants' Request for Evidentiary Ruling on Specified Objections (Docket No. 715); Plaintiff's Response to Defendants' Request for Evidentiary Rulings (Docket No. 728)

(5) **Defendant Square's Motion to Strike Portions of Gleicher Expert Report** (Docket No. 628); Plaintiff's Opposition (Docket No. 680 (public); Docket No. 693 (sealed)); Defendant's Reply (Docket No. 699)

(6) **Defendant Square's [Corrected] Motion for Summary Judgment of Non-Infringement Due to Failure of Proof** (Docket No. 632; *see also* Docket No. 629 (original Motion for Failure of Proof; still marked as pending)); Plaintiff's Opposition (Docket No. 672 (public); 688 (sealed)); Defendant's Reply (Docket No. 702); Defendant's Response to Statement of Genuine Disputes (Docket No. 703); Defendant Square's Request for Evidentiary Ruling on Specified Objections (Docket No. 706-3 (public – attached to application to seal); Docket No. 732

(sealed)); Plaintiff's Response to Request for Evidentiary Rulings (Docket No. 729 (public); Docket No. 726-1 (sealed – attached to application to seal))

(7) **Defendant Square's Motion for Summary Judgment that Plaintiff's Claims are Barred by 35 U.S.C. § 287(b)(2)** (Docket No. 635); Plaintiff's Opposition (Docket No. 670); Defendant's Reply (Docket No. 700); Defendant Square's Response to Statement of Genuine Disputes (Docket No. 706-4 (public – attached to application to seal); Docket No. 734 (sealed)); Defendant Square's Request for Evidentiary Ruling on Specified Objections (Docket No. 706-3 (public – attached to application to seal); Docket No. 732 (sealed)); Plaintiff's Response to Request for Evidentiary Rulings (Docket No. 729 (public); Docket No. 726-1 (sealed – attached to application to seal)).

I. INTRODUCTION

Plaintiff McRO, Inc., d.b.a. Planet Blue ("Plaintiff" or "Planet Blue") filed numerous patent infringement cases in this District.[1] Plaintiff alleges that the remaining Defendants[2] directly or indirectly infringe independent Claim 1 and dependent claims 4 and 13 of U.S. Patent No. 6,611,278 ("the '278 Patent"). *See* Defendants' Response to Plaintiff's Statement of Alleged Disputes of Material Fact ("Ds' Resp.") ¶¶ 13, 14, Docket No. 710. The '278 Patent relates to automatically animating the lip synchronization and facial expressions of 3-D characters.

Before the Court are seven motions:

- Defendants' Motion for Summary Judgment of Non-Infringement or Invalidity (Docket No. 643);
- Plaintiff's Motion for Summary Judgment of No Anticipation (Docket No. 640);
- Defendants' Motion for Summary Judgment or Partial Summary Judgment of Non-Infringement Under 35 U.S.C. § 271(g) (Docket No. 638);

[1] The remaining cases are: *McRO, Inc. v. Electronics Arts, Inc.*, CV 12-10329; *McRO, Inc. v. Naughty Dog, Inc.*, CV 12-10335; *McRO, Inc. v. Square Enix, Inc.*, CV 12-10338; *McRO, Inc. v. Sucker Punch Productions, LLC*, CV 14-332; *McRO, Inc. v. Activision Blizzard Inc.*, CV 14-336; *McRO, Inc. v. Infinity Ward, Inc.*, CV 14-352; *McRO, Inc. v. LucasArts Entertainment Company LLC*, CV 14-358; *McRO, Inc. v. Sony Computer Entertainment America, LLC*, et al., CV 14-383. One other case, *McRO, Inc. v. Disney Interactive Studios, Inc.*, CV 12-10333, also remains pending but stayed pending settlement discussions. The Defendants in that case, Disney Interactive Studios, Inc. and LucasArts, a division of Lucasfilm Entertainment Company Ltd. LLC, have requested leave to join three of the pending motions and be bound by the Court's rulings on those motions, including Defendants' Motion for Summary Judgment of Non-Infringement. *See* Docket No. 733. The Court **GRANTS** Disney's and LucasArts' request.

[2] The remaining Defendants are: Electronic Arts Inc.; Naughty Dog, Inc.; Square Enix, Inc.; Activision Publishing, Inc.; Blizzard Entertainment, Inc.; Infinity Ward, Inc.; Sony Computer Entertainment America LLC (now known as Sony Interactive Entertainment America LLC); Sucker Punch Productions LLC; Disney Interactive Studios, Inc.; and LucasArts, a division of Lucasfilm Entertainment Company Ltd. LLC (collectively, "Defendants").

- Defendants' Motion for Summary Judgment of No Willful Infringement (Docket No. 634 (public notice of motion); Docket No. 655 (sealed));
- Defendant Square's Motion to Strike Portions of Gleicher Expert Report (Docket No. 628);
- Defendant Square's [Corrected] Motion for Summary Judgment of Non-Infringement Due to Failure of Proof (Docket No. 632; *see also* Docket No. 629 (original Notice of Motion for Failure of Proof)); and
- Defendant Square's Motion for Summary Judgment that Plaintiff's Claims Are Barred by 35 U.S.C. § 287(b)(2) (Docket No. 635).

All motions have been fully briefed.

In the tentative order on Defendants' previous summary judgment motion, the Court expressed concerns about whether the "first set of rules" limitation of the asserted claims meets the enablement requirements of 35 U.S.C. § 112.[3] The Court again questions why Defendants failed to challenge the patents on the basis of enablement. Even though the Court provides a tentative herein regarding some of the parties' briefed summary judgment motions, the Court will not issue a final ruling until the parties have submitted − and the Court has considered − briefing regarding the question of whether the "first set of rules" limitation of the asserted claims is enabled. The Court **ORDERS** the parties to submit a joint proposed schedule for summary judgment on the issue of enablement as to this limitation within seven (7) days of this Order.

The Court would tentatively **GRANT** Defendants' Motion for Summary Judgment of Non-Infringement. Docket No. 643. The Court would also **OVERRULE** Defendants' Objections to Plaintiff's Opposition to Defendants' Motion for Summary Judgment of Non-Infringement or Invalidity. *See* Docket Nos. 711, 727. The Court would **DENY** all of the Defendants' other pending motions before this Court as **MOOT**.[4] The Court would **GRANT-IN-PART** Plaintiff's Motion for Summary Judgment of No Anticipation except as to two prior art references: (1) Catherine Pelachaud, "Communication and Coarticulation in Facial

[3] The Court has questions, for instance, about how the asserted claims would adequately inform a person of ordinary skill in the art to apply a phoneme to a character's face when that character is actively moving.

[4] This includes Defendants' still-pending early Motion for Summary Judgment of Non-Infringement, filed June 23, 2017. *See* Docket No. 431; *see also* Docket No. 448 (Plaintiff's *ex parte* application for leave to file a sur-reply to Defendants' early summary judgment motion); Docket No. 455 (Minutes of Hearing on early summary judgment motion and attached tentative ruling).

Animation" (1991); and (2) Antai Peng, "Speech Expression Modeling and Synthesis" (1996).

II. BACKGROUND

A. The Asserted Patent

The '278 Patent issued on August 26, 2003 to inventor Maury Rosenfeld. It is titled "Method for Automatically Animating Lip Synchronization and Facial Expression of Animated Characters."

Much of the factual background regarding the '278 Patent is explained in the Court's Final Ruling on Claim Construction (Dkt. 298) and in the Federal Circuit's opinion regarding the patent eligibility of the '278 Patent and its parent patent, U.S. Patent No. 6,307,576 ("the '576 Patent").[5] *See McRO, Inc. v. Bandai Namco Games Am. Inc.*, 837 F.3d 1299, 1303-07 (Fed. Cir. 2016). Briefly, the patent "relate[s] to automating part of a preexisting 3-D animation method." *Id.* at 1303; *see also* '278 Patent Abstract, *id.* at 1:35-52. The animation method relies on a "neutral model" of a character's face in conjunction with "morph targets." *Id.* at 1:48-59. A "morph target" is a character's expression as it pronounces a particular phoneme, *i.e.*, makes a certain sound. *Id.* Points "in certain places on the face" of the neutral model ("vertices") correspond to vertices on the morph targets. *McRO, Inc.*, 837 F.3d at 1303; *see also* '278 Patent 1:54-59 ("Each morph target has the same topology as the neutral model, the same number of vertices, and each vertex on each model logically corresponds to a vertex on each other model."). "The set of differences in the location of these vertices (and the corresponding point on the face) between the neutral model and the morph target form a 'delta set' of vectors representing the change in location of the vertices between the two models." *McRO, Inc.*, 837 F.3d at 1303; *see also* '278 Patent 1:60-63 ("The deltas of each vertex on each morph target relative to the neutral are computed as a vector from each vertex n on the reference to each vertex n on each morph target. These are called the delta sets."). Each morph target corresponds to a delta set "consisting of the vectors by which the vertices on that morph target differ from the neutral model." *McRO, Inc.*, 837 F.3d at 1303; *see also* '278 Patent 1:63-65.

Facial expressions are "described as a function of the amount each morph target, and its corresponding delta set, is applied to modify the character model." *McRO, Inc.*, 837 F.3d at 1304; *see also* '278 Patent 2:1-2:13. "In producing animation products, a value usually from 0 to

[5] Plaintiff originally alleged that Defendants infringed claims of the '576 Patent as well, but has dropped those allegations. Docket No. 710 ¶¶ 13, 14.

1 is assigned to each delta set by the animator and the value is called the 'morph weight.'" '278 Patent 1:65-67. The set of morph weights for all the delta sets is called a "morph weight set." *Id.* at 4:35-38. "For each morph weight set, the resulting facial expression is calculated by determining the displacement of each vertex from the neutral model as the product of the morph weights in the morph weight set and the corresponding delta sets for the morph targets." *McRO*, 837 F.3d at 1304 (citing '576 Patent 2:2-15); *see also* '278 Patent 2:4-20.

Animators previously accomplished lip synchronization using a "keyframe approach" where the artist manually set morph weights "at certain important times ('keyframes')." '278 Patent 2:29–32. "Animators knew what phoneme a character pronounced at a given time from a 'time aligned phonetic transcription' ('timed transcript')." *McRO*, 837 F.3d at 1304. The purported aim of the '278 Patent was to automate this keyframe approach. It "provide[s] a method for automatically animating lip synchronization and facial expression." '278 Patent 2:44-45. In particular, the claims require using a computer to obtain and apply a set of rules to data to ultimately "generate an output sequence of animated characters with lip and facial expression synchronized to said audio sequence." *Id.* at Claim 1.

B. Accused Products/Bone Animation

Defendants develop a wide variety of computer and video games. Plaintiff alleges that Defendants' accused games infringe the '278 Patent by using a method called "bone animation" in conjunction with one of two third-party software products, *i.e.* FaceFX and Annosoft. Docket No. 710 ¶ 27. For purposes of the parties' summary judgment dispute regarding non-infringement, the parties focus on bone animation.

Defendants do not appear to dispute Plaintiff's expert's overall description of bone animation, and for purposes of Defendants' summary judgment motion, the Court will accept the following description of bone animation from Plaintiff's expert as undisputed. According to Plaintiff's expert, bone animation systems "create[] configurations of a character's skin by moving the vertices of a base mesh." *See* Ex. F of Malloy Declaration, "Gleicher Decl.," ¶¶ 2.12. Docket No. 658-5 (sealed). Bone animation works by attaching the vertices of a character's facial model to special control objects, sometimes referred to as "bones." *Id.* at ¶ 2.7. Many vertices can be attached to a single bone. *Id.* at ¶ 2.14 ("The set of 'bones' used to control a character is typically much smaller than the number of vertices."). A particular vertex may also be attached to one or more bones "with a weight." *Id.* at ¶ 2.7. "The 'bones' serve to

control the vertices of a character, they typically are not drawn as part of the character." *Id.* at 2.11. A user manipulates the smaller number of bones, rather than the individual vertices on the face, in order to animate the facial model. *Id.* at ¶ 2.14 ("For any particular pose (e.g., frame of animation), only the configurations of the 'bones' need to be specified, reducing the workload of the artist.").

Plaintiff's expert further explains that "[e]ach 'bone' is a linear transformation (i.e., a matrix) that defines how vertices connected to it should move." *Id.* at ¶ 2.7. Bones can be represented as a 4x4 matrix. *Id.* at ¶ 2.10. Plaintiff's expert further opines that "[t]hese matrices can be represented as 'vectors' of length 16. To simplify control, 'bones' are sometimes specified or represented as simpler linear transformations such as rotations, translations, scales, or combinations of these." *Id.*

III. LEGAL STANDARD

A. Summary Judgment

Under Federal Rule of Civil Procedure ("Rule") 56, a party may move for summary judgment, identifying each claim or defense – or the part of each claim or defense – on which summary judgment is sought, and the court shall grant it when the pleadings, the discovery and disclosure materials on file, and any affidavits show that "there is no genuine issue as to any material fact and that the movant is entitled to judgment as a matter of law." Fed. R. Civ. P. 56(a); *see also Miranda v. City of Cornelius*, 429 F.3d 858, 860 n.1 (9th Cir. 2005). As to materiality, "[o]nly disputes over facts that might affect the outcome of the suit under the governing law will properly preclude the entry of summary judgment." *Anderson v. Liberty Lobby, Inc.*, 477 U.S. 242, 248 (1986). A dispute as to a material fact is "genuine" if there is sufficient evidence for a reasonable jury to return a verdict for the nonmoving party. *Id*.

To satisfy its burden at summary judgment, a moving party with the burden of persuasion must establish "beyond controversy every essential element of its [claim or defense]." *S. Cal. Gas Co. v. City of Santa Ana*, 336 F.3d 885, 888 (9th Cir. 2003); O'Connell & Stevenson, *Rutter Group Prac. Guide: Fed. Civ. Proc. Before Trial* ("*Federal Practice Guide*") § 14:126 (2016). By contrast, a moving party without the burden of persuasion "must either produce evidence negating an essential element of the nonmoving party's claim or defense or show that the nonmoving party does not have enough evidence of an essential element to carry its ultimate burden of persuasion at trial." *Nissan Fire & Marine Ins. Co., Ltd. v. Fritz Cos.*, Inc., 210 F.3d

1099, 1102 (9th Cir. 2000); *see also Devereaux v. Abbey,* 263 F.3d 1070, 1076 (9th Cir. 2001) (en banc) ("When the nonmoving party has the burden of proof at trial, the moving party need only point out 'that there is an absence of evidence to support the nonmoving party's case.'") (quoting *Celotex Corp. v. Catrett,* 477 U.S. 317, 325 (1986), and citing *Fairbank v. Wunderman Cato Johnson,* 212 F.3d 528, 532 (9th Cir. 2000) (holding that the *Celotex* "showing" can be made by "pointing out through argument . . . the absence of evidence to support plaintiff's claim")).

> If the party moving for summary judgment meets its initial burden of identifying for the court the portions of the materials on file that it believes demonstrate the absence of any genuine issue of material fact, the nonmoving party may not rely on the mere allegations in the pleadings in order to preclude summary judgment[, but instead] must set forth, by affidavit or as otherwise provided in Rule 56, specific facts showing that there is a genuine issue for trial.

T.W. Elec. Serv., Inc., v. Pac. Elec. Contractors Ass'n, 809 F.2d 626, 630 (9th Cir. 1987) (internal citations and quotation marks omitted) (citing, among other cases, *Celotex*, 477 U.S. at 323). "A non-movant's bald assertions or a mere scintilla of evidence in his favor are both insufficient to withstand summary judgment." *See FTC v. Stefanchik*, 559 F.3d 924, 929 (9th Cir. 2009). In addition, the evidence presented by the parties must be admissible. *See* Fed. R. Civ. P. 56(e). Conclusory, speculative testimony in affidavits and moving papers is insufficient to raise genuine issues of fact and defeat summary judgment. *See Thornhill Publ'g Co., Inc. v. GTE Corp.*, 594 F.2d 730, 738 (9th Cir. 1979). Relatedly, "[a]ny objections to declarations or other evidence must be made at or (preferably) before the hearing, and should be ruled upon by the court before ruling on the motion itself." *Federal Practice Guide* § 14:333 (citing *Hollingsworth Solderless Terminal Co. v. Turley*, 622 F.2d 1324, 1335 n.9 (9th Cir. 1980); *Sigler v. American Honda Motor Co.*, 532 F3d 469, 480 (6th Cir. 2008)). In judging evidence at the summary judgment stage, however, courts do not make credibility determinations or weigh conflicting evidence at the summary judgment stage, and must view all evidence and draw all inferences in the light most favorable to the non-moving party. *See T.W. Elec.*, 809 F.2d at 630-31 (citing *Matsushita Elec. Indus. Co., Ltd. v. Zenith Radio Corp.*, 475 U.S. 574 (1986)); *Anderson*, 477 U.S. at 255 ("The evidence of the non-movant is to be believed and all justifiable inferences are to be drawn in [the non-movant's] favor.").

"If the court does not grant all the relief requested by the motion, it may enter an order

stating any material fact – including an item of damages or other relief – that is not genuinely in dispute and treating the fact as established in the case." Fed. R. Civ. P. 56(g); *see also* Federal Practice Guide § 14:352 ("A partial summary judgment may be granted on motion of either party for adjudication of particular claims or defenses.") (citing *id.* § 14:33).

B. Infringement

A determination of patent infringement requires a two-step analysis. *Markman v. Westview Instruments, Inc.*, 52 F.3d 967, 976 (Fed. Cir. 1995). The first step is to construe the claims; *i.e.*, to determine the scope and meaning of what is allegedly infringed. *Id*. This step is a question of law. *Id*. at 970-71. The second step is to compare the properly construed claims to the accused product to determine whether each of the claim limitations is met, either literally or under the doctrine of equivalents.[6] *Id*. at 976; *CCS Fitness, Inc. v. Brunswick Corp.*, 288 F.3d 1359, 1365 (Fed. Cir. 2002); *Tex. Instruments Inc. v. U.S. Int'l Trade Comm'n*, 988 F.2d 1165, 1173 (Fed. Cir. 1993) (although no literal infringement of a claim, an accused device may still infringe under the doctrine of equivalents.). This determination is a question of fact. *Bai v. L & L Wings Inc.*, 160 F.3d 1350, 1353 (Fed. Cir. 1998); *Schoell v. Regal Marine Indus., Inc.*, 247 F.3d 1202, 1207 (Fed. Cir. 2001).

"Since the ultimate burden of proving infringement rests with the patentee," an accused infringer may establish that summary judgment is proper "either by providing evidence that would preclude a finding of infringement, or by showing that the evidence on file fails to establish a material issue of fact essential to the patentee's case." *Novartis Corp. v. Ben Venue Labs., Inc.*, 271 F.3d 1043, 1046 (Fed. Cir. 2001). If the moving party meets this initial criterion, the burden shifts to the party asserting infringement to provide by affidavit or as otherwise provided in Rule 56, "specific facts showing there is a genuine issue for trial." *Anderson*, 477 U.S. at 248; *accord, Novartis*, 271 F.3d at 1046. If the non-moving party fails to make a sufficient showing on an essential element of its case with respect to which it has the burden of proof, the moving party is entitled to judgment as a matter of law. *Celotex*, 477 U.S. at 325.

IV. ANALYSIS

A. Claim Construction of "Delta Set[s]" as It Relates to "Morph Weight Set[s]"

The parties' non-infringement dispute hinges entirely on a claim construction dispute.

[6] It is undisputed that "[t]here is no allegation in this case of infringement via the doctrine of equivalents – only literal infringement." *See* Ds' Resp. ¶ 85, Docket No. 710.

Namely, the parties' disagree in their interpretations of the Court's construction of the term "morph weight sets." Specifically, they dispute how a person of ordinary skill in the art at the time of the invention would interpret delta set[s] and the vectors that make up delta set[s] in the context of the claim phrase "morph weight set[s]." Plaintiff posits that "vector" is a term of art with a broader meaning. Docket No. 686 at 6, 9-10. Plaintiff specifically notes that its understanding of the term "vector" would cover any "ordered set of numbers" and is "not limited to a vector in three-dimensional space." *Id.* at 6. Plaintiff asserts, for instance, that vectors representing bones would be covered by a proper understanding of the term "vector" as it is used in the patent specification. *Id.* at 6-7. In the context of its infringement arguments, Plaintiff describes the relevant one or more bones transformations corresponding to a particular vertex on a facial model as "the set of vectors associated with three basic bone transforms: translation (change in position), scale (change in size) and rotation (change in orientation)." *Id.* at 12. Defendants, meanwhile, argue that the term "vector" as used in the context of the patent specification should be understood as a 3-vector, or a vector representing a direction in 3-dimensional space. Docket No. 709 at 13-17. Defendants rely heavily on the Court's tentative ruling on Defendants' early summary judgment motion to support their position.[7] *Id.*; *see* Docket No. 455 (Minutes for Hearing on Defendants' early summary judgment motion).

During claim construction, the Court construed the claim term "morph weight set" consistent with Plaintiff's proposal as "[a] set of values, one for each delta set, that, when applied, transform the neutral model to some desired state, wherein each delta set is the set of vectors from each vertex on the neutral (reference) model to each vertex on a model of another mouth position." Docket No. 298-1 at 9. The term "delta set" itself does not appear in the claims.[8] Instead, the same as in the Court's construction, the specification explicitly defines the

[7] The Court's tentative ruling on Defendants' early summary judgment motion has not been adopted as a final ruling. After oral argument on Defendants' early summary judgment motion, the Court asked the parties to conduct further discovery before making a final determination on the motion. After conferring further, a decision was made to wait until the normal dispositive motion deadline for Defendants to renew their motion.

[8] For reference, asserted Claim 1 of the '278 Patent recites:

> 1. A method for automatically animating lip synchronization and facial expression of three-dimensional characters comprising:
>
> obtaining a first set of rules that defines a morph weight set stream as a function of phoneme sequence and times associated with said phoneme sequence;
>
> obtaining a plurality of sub-sequences of timed phonemes corresponding to a desired audio sequence for said three-dimensional characters;
>
> generating an output morph weight set stream by applying said first set of rules to each

term "morph weight set" in relation to delta sets, explaining "as used herein, a 'morph weight set' is a set of values, one for each delta set, that, when applied as described, transform the neutral mode to some desired state." '278 Patent 4:35-37.

The portion of the Court's construction relating to "delta sets" corresponds to another portion of the patent specification, which states:

> Each morph target has the same topology as the neutral model, the same number of vertices, and each vertex on each model logically corresponds to a vertex on each other model. For example, vertex #n on all models represents the left corner of the mouth, and although this is the typical case, such rigid correspondence may not be necessary.
>
> ***The deltas*** of ***each*** ***vertex on each morph target*** relative to the neutral are ***computed as a vector from each vertex n on the reference to each vertex n on each morph target***. These are called the ***delta sets***. There is one delta set for each morph target.

Id. at 1:54-64 (emphasis added). The specification is unambiguous: "deltas of ***each vertex*** on ***each morph target*** relative to the neutral ***are computed as*** a vector ***from each vertex n*** on the reference ***to each vertex n*** on each morph target." *See id.* Importantly, the specification refers to the deltas of each vertex on each morph target as being computed as a single vector. In the disclosure that follows, the specification then discloses an algorithm for creating a desired facial expression:

$$|\text{result}| = |\text{neutral}| + \sum_{x=1}^{n} |\text{delta set}_x| * \text{morph weight}_x$$

Id. at 2:6. To determine a resulting vector ("|result|") for a desired facial expression, the appropriate corresponding vector in the delta set ("|delta set$_x$|") is multiplied by the corresponding morph weight ("morph weight$_x$") and that value is then added to the value of the neutral vector ("|neutral|"). *Id.* at 11:15. If the desired facial expression involves blending multiple phonemes, the products of the delta set and morph weight corresponding to each relevant phoneme are added together before adding to the neutral.

Together, these aspects of the patent disclosure reveal the same thing: vertices exist on

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> sub-sequence of said plurality of sub-sequences of timed phonemes; and
>
> applying said output morph weight set stream to an input sequence of animated characters to generate an output sequence of animated characters with lip and facial expression synchronized to said audio sequence.

'278 Patent, Claim 1.

the models and the difference between two corresponding vertices (obtained through simple subtraction) represents the vector for those corresponding vertices in a delta set.[9]

Plaintiff disputes that the intrinsic record supports this understanding. First, Plaintiff argues that because the specification lexicographically defined the terms "morph weight set" and "delta set," but did not specifically define the term "vector," it would be improper to limit "vector" to mean vectors that are magnitudes and directions in three dimensional space. *See* Docket No. 686 at 5-6. Second, Plaintiff argues that limiting the term "vector" would essentially be departing from the lexicographic definition of "delta set" because it would be "reading in an additional requirement that a 'vector' can only be a specific type of vector, . . . where the specification does not state, suggest, or imply that specific limitation or any limitation whatsoever." *Id.* at 6. Third, Plaintiff discounts the specification's mathematical formula on the basis that it appears in the background section of the patent specification, arguing that the formula is related to a "typical case" and is not limiting. *Id.* at 7. Fourth, Plaintiff refers to a portion of the specification for the proposition that "a rigid correspondence between vertices is ***not*** necessary," further arguing that "vectors that are directions in three-dimensional space between such vertices cannot be mandatory." *Id.* at 7. Plaintiff also cites to general statements from Defendants' expert regarding the meaning of "vector" to support its position. *Id.* at 7-9 (citing Deposition of Dr. Dobkin, Ex. 21 ("Dobkin Tr."), 108:15-109:6, 109:20-110:5, Dkt. 667-29); *see also* Gleicher Decl. ¶ 2.16.

Plaintiff's first two arguments rely on an understanding of "vector" divorced from the statements in the '278 Patent. As noted, the patent specification refers to "deltas" as "***computed as a vector from each vertex n*** on the reference ***to each vertex n*** on each morph target." '278 Patent 1:60-64 (emphasis added). A simple reading of this language supports the conclusion that the specification is defining the disclosed vectors as vectors with 3-D magnitude and direction[10]

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[9] The Federal Circuit likewise stated, "[t]he set of ***differences in the location*** of these vertices (and the corresponding point on the face) between the neutral model and the morph target ***form a 'delta set' of vectors representing the change in location of the vertices between the two models***." *McRO, Inc.*, 837 F.3d at 1303 (emphasis added). Plaintiff argues that the Federal Circuit's statements do not conflict with its interpretation of the invention, including its interpretation of the meaning of the term "delta set." This Court disagrees.

[10] Defendants also suggest, in a footnote, that this understanding is consistent with the first definition of "vector" in the Merriam-Webster dictionary. *See* Docket No. 709 at 14 n.3 ("The first definition of 'vector' in the Merriam-Webster dictionary reads: 'a quantity that has a magnitude and direction and that is commonly represented by a directed line segment whose length represents the magnitude and whose orientation in space represents the direction."). Defendants, however, failed to provide a citation for this statement and although it is consistent with

computed by pure subtraction/addition between the neutral and target models, with one vector corresponding to each set of two vertices.

Notably, during claim construction, the Court rejected Plaintiff's request to construe "delta set" in the context of "morph weight set" as "wherein each delta set is the ***mathematical representation*** of the difference between the neutral model and another model." Dkt. No. 298 at 9 (emphasis added). The Court found that the change was "not an innocuous 'simplification,' but rather, a significant generalization." *Id.* Although Plaintiff frames the dispute as one where the Court is impermissibly narrowing the meaning of "vector," Plaintiff is effectively urging the same impermissibly broad meaning of the term "vector," when considered in the context of the patent specification, that it argued during claim construction and that the Court rejected.

Plaintiff's attempts to discount the mathematical formula disclosed in the background section of the '278 Patent are also unpersuasive. Plaintiff refers to the formula as depicting the "typical case." In describing the formula, however, the '278 Patent states,

> In producing animation products, a value usually from 0 to 1 is assigned to each delta set by the animator and the value is called the "morph weight". From these morph weights, ***the neutral's geometry is modified as follows***: Each vertex N on the neutral has the corresponding delta set's vertex multiplied by the scalar morph weight added to it. This is repeated for each morph target, and the result summed. ***For each vertex v in the neutral model***:
>
> 5
>
> $$|\text{result}| = |\text{neutral}| + \sum_{x=1}^{n} |\text{delta set}_x| * \text{morph weight}_x$$
>
> where the symbol |xxx| is used to indicate the corresponding vector in each referenced set. For example, |result| is the corresponding resultant vertex to vertex v in the neutral model |neutral| and |delta setx| is the corresponding vector for delta set x.

'278 Patent 1:65-2:13 (emphasis added). This portion of the patent specification makes no reference to the "typical case" and does not hold itself out as exemplary. Instead, it affirmatively provides the appropriate formula for computing a desired facial expression.

At the hearing, Plaintiff observed that the second sentence following the equation states, "***[f]or example***, |result| is the corresponding resultant vertex to vertex v in the neutral model |neutral| and |delta setx| is the corresponding vector for delta set x." *See id.* (emphasis added). Plaintiff suggested that the phrase "for example" demonstrated that the disclosed formula is

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the Court's determination, the Court does not find it necessary to rely on Defendants' contention in reaching its determination.

exemplary. Plaintiff does not credibly argue that the patent specification's use of the phrase "for example" in the context of explaining "the symbol |xxx|" should be imputed back to diminish the importance of the disclosed mathematical formula.

Plaintiff makes two passing comments that the '278 Patent's disclosed formula does not require any of the particular vectors to be a direction in three-dimensional space. *See* Docket No. 686 at 7, 9. Plaintiff does not cite to any evidence to support this assertion. As the formula states, the result is based on *adding* the neutral vector to the *product* of the delta set vector and the morph weight to obtain the result vector. Plaintiff fails to explain how this formula would still lead to the correct result (without some additional undisclosed math) if a delta set vector was understood to encompass, for example, a transform vector. At the hearing, Plaintiff made the same assertion that other vectors could satisfy the formula, again without further explanation or support. Indeed, Plaintiff followed up by insisting that it has no burden to submit evidence to prove this point because it is Defendants who are asking for a narrower claim construction. Plaintiff's argument − that it is somehow relieved of its responsibility to provide evidence to support the statements made by its attorneys because of its understanding of the nature of the dispute − is unpersuasive. The Court has explained why, on its face, the intrinsic record does not support Plaintiff's argument. Without evidence (or even a cogent explanation) to the contrary, Plaintiff's conclusory attorney statement holds no weight.

That this disclosure is in the "Background of the Invention" Section is also no reason to discount it. This disclosure comes immediately after the '278 Patent provides a definition for the term "delta set." Plaintiff's argument that the mathematical formula must be minimized because it is disclosed in the background section is undercut by its agreement that the immediately preceding disclosure regarding "delta set" is lexicographic. Indeed, the background section sets the stage for the disclosed invention. The '278 Patent explains that "the current practice for three dimensional computer generated speech animation is by manual techniques commonly using a 'morph target' approach." '278 Patent 1:48-50. The '278 Patent explains the shortcomings with manual speech animation, including that it can be "very tedious and time consuming, as well as inaccurate." *Id.* at 2:31-34. According to the '278 Patent,

> it is the ***primary object*** of this invention to provide a method for ***automatically*** animating lip synchronization and facial expression of three dimensional characters . . . . The method of the present invention further provides an extremely rapid and cost effective means to ***automatically*** create lip synchronization and

facial expression.

Id. at 2:43-52 (emphasis added). It is logical that explanations about speech animation methods in the background section are lexicographic where the "primary object" of the invention is aimed at automation. *See McRO*, 837 F.3d at 1303 (stating that the patent "relate[s] to ***automating*** part of a ***preexisting*** 3-D animation method." (emphasis added)).

As Defendants also note, this portion of the specification is the only aspect of the specification that describes delta sets and their relationship to morph weight sets, including how to use that relationship to create a desired facial expression. It would be improper to ignore this aspect of the '278 Patent's disclosure when there is no other disclosure otherwise describing this process, which is relevant to the asserted claims because of their reference to "morph weight sets."

The '278 Patent's disclosure regarding the work previously manually performed by animators and the invention's primary goal of automating that work is relevant for another reason. As Plaintiff's own expert states regarding bones animation,

> [a]t the time of the invention and patent filing (circa 1997), 'bones' were not a common approach to facial animation. While the technique was known . . . , it was not applied to facial animation in that era. 'Bones' did not become an attractive approach for facial animation ***until computer hardware advanced to provide [Graphical Processing Units] capable of performing the computations efficiently***. Therefore, it is not surprising that the '278 patent does not mention the approach.

Gleicher Decl ¶ 2.15 emphasis added). Even though submitted long after claim construction proceedings, this extrinsic evidence, consistent with the '278 Patent's disclosure, supports the conclusion that a person of ordinary skill in the art at the time the invention was filed would not understand the patented invention to relate to complex, non-three-dimensional-space delta vectors.

Of course, at the hearing, Plaintiff did not reference this statement, but instead heavily emphasized that both its expert ***and*** Defendants' expert purportedly agree that the term "vector" has a broader meaning. Dr. Gleicher, for instance, testifies in his expert report that

> [t]he term "vector" in mathematics, computer science and computer graphics is a general concept that roughly means an ordered list of numbers. My understanding of this term is consistent with one of the seminal texts on computer graphics, Real Time Rendering, which defines a "vector" as "an ordered list of real numbers."

Gleicher Decl. ¶ 2.16. But unlike Dr. Gleicher's other statement, Dr. Gleicher's testimony regarding the meaning of "vector" is not necessarily tied to the understanding of a person of ordinary skill in the art ***at the time of the invention***. Indeed, Dr. Gleicher's cited "seminal text," Real Time Rendering, was published in 2008, over ten years after the priority date of the '278 Patent. *See* Gleicher Decl., Ex. 2.

Dr. Dobkin's deposition testimony appears similarly divorced from the question of what a person of ordinary skill in the art at the time of the invention would understand the term "vector" to mean in the context of the '278 Patent. After counsel read the '278 Patent's definition of "delta set" to Dr. Dobkin, he testified:

> Q. It only says that the vectors must be – are computed, correct?
>
> A. It says . . . the vectors are computed. It doesn't, you know, say more than that.
>
> Q. Does it say how the vectors must be stored?
>
> A. It doesn't specifically say how they have to be stored.
>
> Q. Could the vectors be stored in a different form, say, angle of magnitude?
>
> A. That's a speculation that I'm not sure how to answer it.
>
> Q. Can you think of a way in which the vectors could be stored other than delta X, delta Y, delta Z?
>
> A. Hypothetically, I could imagine a number of ways, you know, create vectors and store vectors. But the court is pretty clear that if – you use a vector as a three-dimensional vector with three components.

Dobkin Tr. 108:24-110:5 (objections omitted). None of Dr. Dobkin's testimony directly tackles the relevant question. First, how vectors are stored is not relevant to the dispute at issue. Second, while Dr. Dobkin agrees that "hypothetically" he could "imagine" a number of ways to "create vectors and store vectors," it is unclear whether his testimony is tied to considering the term "vector" in the context of a person of ordinary skill in the art reading the '278 Patent at the time of the invention. Plaintiff's proffered testimony fails to rebut Dr. Gleicher's other testimony or the intrinsic disclosure.

Plaintiff's fourth argument relates to a portion of the patent specification that states that in a "morph target" speech animation approach:

> a reference model of a neutral mouth position, and several other mouth positions, each corresponding to a different phoneme or set of phonemes is used. These

> models are called "morph targets". Each morph target has the same topology as the neutral model, the same number of vertices, and each vertex on each model logically corresponds to a vertex on each other model, or example, vertex #n on all models represents the left corner of the mouth, ***and although this is the typical case, such rigid correspondence may not be necessary***.

'278 Patent 1:50-59 (emphasis added). The '278 Patent does not provide any further explanation for its assertion that "although this is the typical case, such rigid correspondence may not be necessary." *See id.* At most, this phrase may be referring to whether or not there is a perfect correspondence between vertices on the neutral model and target model. But as Defendants note, "it does not logically follow that the vectors need not be three-dimensional vectors." Docket No. 709 at 16. Ultimately, this statement in the specification does not outweigh the remainder of the intrinsic record regarding the meaning of the term "vector" in the context of the '278 Patent.[11]

For the reasons stated, the Court clarifies that the term "vector" in the context of the claim term "morph weight set[s]" refers to a vector with direction and magnitude in three-dimensional space.

B. Under the Proper Construction of Morph Weight Sets, Plaintiff Cannot Demonstrate Infringement as a Matter of Law

In its opposition to Defendants' motion for summary judgment of non-infringement, Plaintiff relies on the bones transform vectors to argue that the "delta set" aspect of the claim limitation "morph weight sets" is met by the accused games. Docket No. 686 at 16; *see also id.* at 17 ("'delta sets' are met by the 'vectors' that constitute the bone transforms. These 'vectors' are used to derive the positions of the vertices."). Defendants argue that Plaintiff's position is inconsistent with the testimony of Plaintiff's expert, Dr. Gleicher, but that under either Plaintiff's theory in opposing summary judgment or Defendants' understanding of the opinions disclosed by Dr. Gleicher in his expert report, Plaintiff cannot demonstrate infringement. Docket No. 709 at 1-13.

Plaintiff urges that it has maintained a consistent infringement theory with respect to bone animation throughout this litigation. Specifically, Plaintiff asserts that its position is that the bones transformation vectors constitute the delta sets necessary to correspond to the claimed morph weight sets. *See* Docket No. 727 at 2-6 (Plaintiff's Responses to Defendants' Request for

[11] As Defendants note, Dr. Gleicher also agrees that "[u]nder the Court's construction, a Delta Set also requires that each of the models has a corresponding set of vertices, otherwise there cannot be a vector between each vertex on the Neutral and Delta models." *See* Gleicher Decl. ¶ 6.10.

Evidentiary Rulings on Specified Objections re Defendants' Motion for Summary Judgment of Non-Infringement or Invalidity). For purposes of Defendants' Motion for Summary Judgment of Non-Infringement or Invalidity, the Court will accept as true Plaintiff's position that it has not changed its infringement theories over the course of recent litigation. In doing so, however, the Court understands that Plaintiff's sole infringement position is that bones transform vectors constitute delta sets, as argued in Plaintiff's opposition to Defendant's motion for summary judgment. In other words, the Court understands that Plaintiff is not maintaining that a resulting hypothetical 3-vector in the accused games could be calculated by simple subtraction between the vertex on the neutral model and target model and would constitute the claimed delta sets.[12] *See* Docket No. 710 ¶ 127 (Defendants' Response to Plaintiff's Statement of Alleged Disputes of Material Fact) (Plaintiff disputes Defendants' assertion that "[i]n his deposition, Dr. Gleicher said that the required vectors could be computed by subtraction or deduced via an equation in a textbook." In response, Plaintiff states, in part, "[t]he 'delta sets' are constituted in the bone transform vectors."); *but see id.* at ¶¶ 6, 62 (responding to Defendants' alleged undisputed fact by quoting from Dr. Gleicher's Expert Report, which states, "[t]he requirement for a vector between each corresponding pair of vertices is always met because every pair of vertices defines a vector (via subtraction)." Gleicher Decl. ¶ 6.11).

Under its infringement theory, Plaintiff fails to even attempt to argue that the accused products infringe the claims under the appropriate understanding of the term "vector." Plaintiff's entire opposition to Defendants' summary judgment motion of non-infringement is premised on its arguments that vectors in the context of the '278 Patent refer simply to an ordered set of numbers. *See* Docket No. 686 at 10-19. Because the Court has explained that the term "vector" in the context of the claim term "morph weight set[s]" refers to a vector with direction and magnitude in three-dimensional space, and Plaintiff nowhere disputes that bones transform vectors are not vectors with direction and magnitude in three-dimensional space, Plaintiff's sole

[12] The Court notes that an argument that a hypothetical 3-vector could constitute the claimed delta sets − even where bones animation does not actually perform such a calculation or output such a vector − would be unpersuasive. Such an understanding would impermissibly broaden the scope of the phrase "delta set" by implying that any time a person of ordinary skill in the art *could* perform a calculation that would satisfy the phrase, it would be met. Such a hypothetical understanding would mean that any time speech animation was performed by changing a neutral model with vertices to a target model with vertices, a person of ordinary skill in the art could backtrack and identify a resulting delta set as required by the '278 Patent, even if a delta set was not necessarily used to calculate the positions of the vertices of the target model in the first place. As Defendants observe, such a position would be inconsistent with the teachings of the patent and is rejected. *See* Docket No. 643-1 at 15-18.

infringement position fails as a matter of law.

Plaintiff attempts to characterize the issue regarding the proper interpretation of "vector" as a question of fact. Docket No. 686 at 10. However, the issue presented regarding the meaning of the term does not simply relate to its application to the accused products, *i.e.*, a question of infringement. Instead, both parties disputed the contents of the patent's intrinsic record at length to support their competing positions regarding the term "vector." *See id.* at 5-10. In other words, the parties submitted a dispute about the scope of the claims, a claim construction issue that is "exclusively within the province of the court." *Markman v. Westview Instruments, Inc.*, 517 U.S. 370, 372 (1996); *Teva Pharms. USA, Inc. v. Sandoz, Inc.*, 135 S.Ct. 831, 837-40 (2015) (claim construction is a question of law with underlying questions of fact).

Even if the Court had concluded that the '278 Patent refers to the term "vector" as simply an ordered set of numbers, Plaintiff's infringement position has other shortcomings. As Plaintiff notes, through bones animation, a small set of bones control large sets of vertices. Gleicher Decl., ¶¶ 2.7, 2.14. But more importantly, a single vertex can be attached to multiple bones. *Id.* In other words, in bones animation, the same vertex is likely to be influenced by multiple different bones transformations. As noted, Plaintiff's position is that the bones transformation vectors represent the delta sets. Docket No. 686 at 10. However, the '278 Patent explains that deltas are "***computed as a vector from each vertex n*** on the reference ***to each vertex n*** on each morph target." '278 Patent 1:60-64. Plaintiff's interpretation would result in a complex relationship between different bones transformations and individual vertices rather than the one-to-one relationship contemplated by the patent. The Court, however, need not reach a conclusive determination on this issue given its other conclusions regarding the meaning of "vector" and how they relate to Plaintiff's infringement position.

For the reasons stated, the Court would **GRANT** Defendants' Motion for Summary Judgment of Non-Infringement. Docket No. 643. Because the Defendants' remaining motions similarly relate to issues of non-infringement, the Court would **DENY** all of the Defendants' other pending motions before this Court as **MOOT**.

C. *Defendants' (Except Square) Counterclaims for Patent Invalidity*

Except for Square (*see* Docket No. 112 (Answer only)), the remaining Defendants in this action have counterclaims seeking a declaration of patent invalidity. Docket No. 488 (Activision and Blizzard's Answer and Counterclaims); Docket No. 322 (LucasArts' Answer and

Counterclaims); Docket No. 318 (Infinity Ward's Answer and Counterclaims); Docket No. 284 (Sony's Counterclaim); Docket No. 283 (Sucker Punch's Counterclaim); Docket No. 174 (Naughty Dog's First Amended Counterclaim); Docket No. 159 (Disney's First Amended Answer and Counterclaim).

For Square, because the Court would conclude that summary judgment should be granted on the basis that Defendants do not infringe the asserted claims of the '278 Patent, no disputes remain for adjudication and Square's affirmative defense of invalidity (and all other defenses to Plaintiff's claim of patent infringement) would be moot.

For the remaining Defendants besides Square, because the Court concludes that the term "vector" as used in the '278 Patent is limited to vectors with magnitude and direction in 3-dimensional space, it is the Court's understanding that Plaintiff's Motion for Summary Judgment of No Anticipation would be appropriately granted.[13] (*See* Docket No. 640.) At the hearing, Defendants indicated that, assuming the Court's tentative determination with respect to their motion for summary judgment of non-infringement does not change, they may be willing to drop their invalidity counterclaims if they do not succeed on their arguments regarding lack of enablement. On that basis, the Court finds that the remainder of the parties' dispute regarding patent invalidity on the ground of anticipation is not ripe for adjudication at this time.

V. CONCLUSION

The Court would tentatively **GRANT** Defendants' Motion for Summary Judgment of Non-Infringement. Docket No. 643. The Court would also **OVERRULE** Defendants' Objections to Plaintiff's Opposition to Defendants' Motion for Summary Judgment of Non-Infringement or Invalidity. *See* Docket Nos. 711, 727. The Court would **DENY** all of the Defendants' other pending motions before this Court as **MOOT**.[14] The Court would **GRANT-IN-PART** Plaintiff's Motion for Summary Judgment of No Anticipation except as to two prior art references: (1) Catherine Pelachaud, "Communication and Coarticulation in Facial

[13] As Plaintiff notes, Defendants agree that except for two of the references raised in Plaintiff's motion, they "do not intend to rely on these references to prove anticipation," although they reserve the right to rely on them for other purposes. Docket No. 681 at 5 n.4. On this basis, the Court would **GRANT-IN-PART** Plaintiff's motion except as to two prior art references: (1) Catherine Pelachaud, "Communication and Coarticulation in Facial Animation" (1991); and (2) Antai Peng, "Speech Expression Modeling and Synthesis" (1996).

[14] This includes Defendants' still-pending early Motion for Summary Judgment of Non-Infringement, filed June 23, 2017. *See* Docket No. 431; *see also* Docket No. 448 (Plaintiff's *ex parte* application for leave to file a sur-reply to Defendants' early summary judgment motion); Docket No. 455 (Minutes of Hearing on early summary judgment motion and attached tentative ruling).

Animation" (1991); and (2) Antai Peng, "Speech Expression Modeling and Synthesis" (1996).