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October 7, 2009

Via FedEx Letter

Sirona Dental Systems, GmbH
Fabrikstr. 31
D64625 Bensheim
Germany
Attn: Dr. Stefan Hehn, V.P. Imaging Systems

Sirona Dental Systems, USA
4835 Sirona Dr., Suite 100
Charlotte, NC 28273
Attn: Michael Augins, President

Re: Osseo Imaging, LLC; Radiographic Densitometry Dental/Orthopedic Imaging
U.S. patents 6,381,301 and 6,944,262
Our Reference: 5458-2

Gentlemen:

We represent Osseo Imaging, LLC in intellectual property matters. Osseo Imaging was founded by Dr. Ronald Massie, a practicing dentist, and Dr. Christopher Leslie, a practicing orthopedic surgeon, for the purpose of commercializing their proprietary radiographic densitometry modeling and imaging technology including but not limited to U.S. patents 6,381,301 and 6,944,262, both entitled "Dental and Orthopedic Densitometry Modeling System and Method," copies of which are attached. Other patent applications are pending. Also attached is a schedule of Osseo Imaging's issued and published patent applications in the U.S. and in a number of foreign countries.

On behalf of Osseo Imaging, Dr. Massie had a number of discussions with Dr. Stefan Hehn of Sirona regarding a license or other business relationship for commercializing Osseo Imaging's intellectual property portfolio in the dental imaging field. In connection with these discussions, Osseo Imaging provided Sirona care of Dr. Hehn with copies of its issued patents and pending applications for consideration.

Sirona's 3-D dental imaging product line, including particularly its Galileos and Orthophos equipment with Sidexis software, appears to use technology covered by the patent claims of the above patents owned by Osseo Imaging. Those products may also be covered by Osseo Imaging's pending U.S. applications and foreign patents.

Sirona Dental Systems, GmbH
October 7, 2009
Page 2

To assist you in understanding how the above products are covered by at least two of Osseo Imaging's patents, we have also attached what is known as a "claims chart" showing the correspondence between your products and at least some of the claims of Osseo Imaging's issued U.S. Patents No. 6,381,301 (Massie I) and No. 6,944,262 (Massie II). As you can see, these claims are relatively broad and appear to cover your Galileos and Orthophos products. Under U.S. patent law Osseo Imaging has the exclusive rights to make, use, import, sell and offer to sell all products covered by the claims of its patents. Accordingly, Sirona may not make or sell its Galileos and Orthophos products without Osseo Imaging's permission.

At this time, Osseo Imaging is willing to offer Sirona a non-exclusive license to use its patented technology. In addition to allowing Sirona to continue to make and sell its Galileos and Orthophos products, and any other of its products that may be covered by the above described patents and pending applications, such a license will secure proprietary exclusivity for the dental radiographic modeling applications covered by the Osseo Imaging patents and pending applications from other entities who do not accept this license proposal. Osseo Imaging intends to fully enforce its intellectual property rights in the above patents and any additional patents issuing from its pending applications, including by litigation if necessary, against any infringers of its patent rights who do not accept its licensing proposal.

After you have had an opportunity to review the attached materials or have this information reviewed by your patent counsel, please contact the undersigned regarding your intentions with respect to this offer. We would appreciate a response within 30 days. If that is insufficient time for you to retain patent counsel and obtain legal advice, please let us know. We look forward to hearing from you.

Sincerely,

Nixon & Vanderhye, P.C.


/s/ Robert A. Rowan

Attachments

Fitzpatrick

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October 21, 2009

VIA E-MAIL

Robert A. Rowan, Esq.
Nixon & Vanderhye
11th Floor
901 North Glebe Road
Arlington, VA 22203-1808

Re: Osseo Imaging's U.S. Patent Nos. 6,381,301 and 6,944,262

Dear Mr. Rowan:

We represent Sirona Dental Systems, Inc. ("Sirona"), and write in response to your letter of October 7, 2009, concerning Osseo Imaging's U.S. Patents Nos. 6,381,301 and 6,944,262.

We were very surprised to read your letter, and to learn that Osseo Imaging ("Osseo") is asserting that Sirona's Galileos and Orthophos with Sidexis software (the "Sirona products") infringe the foregoing patents, given among other things that Osseo's patents are plainly limited to systems that utilize and/or compute densitometry. Because Sirona's products do not that utilize or compute densitometry as required by Osseo's patents, those products cannot possibly infringe.

The entirety of both the '301 and '262 patents make plain that they are limited to systems that that utilize and compute densitometry. For example, each patent states in its Background Of The Invention Section that:

The availability of relatively fast computers with large memories at reasonable costs has led to the digitalization of X-ray images for mapping BMD models in various formats. For example, BMD images use color to identify varying densities. Digital BMD patient models are also used for comparison purposes with standard models and with patients' own prior BMD histories. Age correction factors can be applied to patients' models for diagnosing and monitoring the onset and progress of such medical conditions as osteoporosis and the like. The present invention utilizes such densitometry modeling and mapping techniques for dental applications.

'301 patent at col. 2: 9-20; '262 patent at col. 2: 18-29 (emphasis added). And all of the claims require the use and/or creation of a densitometry model. For example, and focusing on the claims you identified in your charts:

- Claim 1 of the '301 patent is directed to a system for “tomographically modeling dental and orthopedic structure densitometry,” and requires among other things “means for storing a pre-existing tomographical dental/orthopedic densitometry model” and an “output device . . . for receiving a tomographical densitometry model.”
- Claim 10 of the '301 patent is directed to a method for “tomographically modeling dental and orthopedic densitometry” and requires among other things “forming . . . a tomographical densitometry model” and “outputting said densitometry model.”
- Claim 1 of the '262 patent requires a memory “storing patient densitometry information,” a sensor transferring “signals representing densitometry of the patient’s dental or orthopedic structure,” a computer “creating, storing and comparing three-dimensional digital densitometry models,” an output device “communicating densitometry model comparison information” and a display “displaying information pertaining to said densitometry model.”

What is more, the claimed feature of the “means for storing a pre-existing tomographical dental/orthopedic densitometry model” noted above was added to claim 1 of the '301 in response to a rejection from the USPTO, including over Sirona’s own prior art (U.S. Patent No. 5,828,721 to Schulze-Ganzlin), and affirmatively relied on it in an effort to distinguish that claim from the Schulze-Ganzlin prior art:

The Schulze-Ganzlin reference cited by the Examiner teaches comparing the tomogram of a first slice position with the tomogram of a second slice position, as disclosed in lines 48 through 56 of page 3. However, nowhere in the Schulze-Ganzlin patent does it teach comparing a patient’s prior tomographical densitometry model with a patient’s current tomographical densitometry model, nor does such comparison relate to the heart of the purpose of the Schulze-Ganzlin invention, which is to disclose an apparatus and method for more quickly producing tomograms of a desired slice portion.

Robert A. Rowan, Esq.
October 21, 2009
Page 3

October 9, 2001, Office Action at 5 (emphasis added).¹

In fact, the Schulze-Ganzlin prior art aptly describes the technology practiced in the Sirona product in aspects pertinent to this matter, namely a technology based upon panoramic tomography and not upon densitometry models. Because the Sirona products do not utilize or create densitometry models, and indeed operate in a manner from which the applicant expressly distinguished his claims, the Sirona products cannot infringe. As result, Sirona does not need and has no interest in a license.

We trust that, having been advised of the absence of densitometry models in the Sirona products, you will agree that there is no infringement, and close your files on this matter.

Very truly yours,

A handwritten signature in black ink that reads "Mike". The signature is written in a cursive, flowing style.

Michael P. Sandonato

MPS:dlh

FCHS_WS 4021672_1.DOC

¹ The applicant also distinguished his claims from the other cited art, including U.S. Patent Nos. 5,784,427 to Arai and 5,677,940 to Suzuki, on the purported absence in that art of densitometry models.

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November 5, 2009

Via Email and FedEx Letter

Michael P. Sandonato, Esq.,
Fitzpatrick, Cella, Harper & Scinto
1290 Avenue of the Americas
New York, NY 10104

Re: Osseo Imaging, LLC; Radiographic Densitometry Dental/Orthopedic Imaging
U.S. patents 6,381,301 and 6,944,262
Our Reference: 5458-2

Dear Mr. Sandonato:

We have your letter with respect to our clients' two U.S. patents, 6,381,301 and 6,944,262, which, as you point out, are both entitled and directed to "Dental and Orthopedic Densitometry Modeling System and Method." You assert that your client's systems and methods do not involve "densitometry," but you do not provide any explanation of why you believe that is so.

As you know, the key to understanding the meaning of "densitometry" is the use of that term in the claims, the specification and the file history of the asserted patents. Indeed, your letter quotes a portion of the critical language. See, for example the language at the top of column 2 (lines 1-20) of the patent specification which makes clear that both Massie patents use the term "densitometry" to refer to any number of pre-existing "scanning X-ray techniques" including, but not limited to, the techniques described in the prior art patents cited at lines 4-5 of col. 2. See, e.g., Gershman, USP 5,838,765, entitled "Whole-body X-ray bone densitometry using a narrow angle fan beam including variable fan beam displacement between passes" Bisek, Re. 36,162, entitled "Whole body dual-energy bone densitometry using a narrow angle fan beam to cover the entire body in successive passes" and Pelc, USP 5,533,080, entitled "Reduced field-of-view CT system for imaging compact embedded structures. These disclosures are fairly broad and, accordingly, your assertion that your client's equipment does not utilize "densitometry" is not meaningful unless you define the term in a manner consistent with the patents' specifications and show that your client is not using such techniques, which we believe the evidence very clearly shows it is.

Your further discussion of the Schulze-Ganzlin reference is no more helpful to Sirona's cause. The limitation you focus on in this regard is the requirement in Claim 1 of the '301 patent for "means for storing a pre-existing tomographical dental/orthopedic densitometry model." However, that language does not create any limitation not met by your client's equipment when "densitometry" is

Michael P. Sandonato

November 2, 2009

Page 2

properly understood to be as broad as the techniques described in the '080, '765 and '162 patents cited at lines 4-5 of col. 2 of the Massie patent specifications. It is also clear that Sirona's equipment has the capability for "storing" the densitometry models it creates and that it does so in many applications of its equipment.

Finally, the requirement of "comparing a patient's prior three dimensional model with a patient's current three dimensional model" does not appear in the '301 patent until dependent claim 9, making clear that such a comparison is not needed to infringe Claim 1 or its other dependant claims.

In order to advance this discussion it will be necessary for you to articulate how your client's equipment can function without using "densitometry" as that term is used in the Massie patents. If your client cannot explain how the functioning of its equipment can be meaningfully distinguished from the broad claims of the Massie patents, then we should proceed on to the details of a licensing arrangement that might be satisfactory to both of our clients.

As we previously indicated, Osseo Imaging is willing to offer Sirona a non-exclusive license to use its patented technology. If your client is interested, we are happy to discuss the terms of such a license which may be acceptable to both of our clients. However, as we also indicated, Osseo Imaging fully intends to enforce its intellectual property rights in the above patents and any additional patents issuing from its pending applications. Accordingly, if your client does not intend to accept Osseo's license offer, it must immediately cease and desist from all infringing use and advise us in writing when it anticipates that its infringing use will be completely discontinued.

We look forward to hearing from you at your earliest possible convenience.

Sincerely,

Nixon & Vanderhye, P.C.



Robert A. Rowan

Fitzpatrick

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November 13, 2009

VIA E-MAIL

Robert A. Rowan, Esq.
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11th Floor
901 North Glebe Road
Arlington, VA 22203-1808

Re: Osseo Imaging's U.S. Patent Nos. 6,381,301 and 6,944,262

Dear Mr. Rowan:

We have reviewed your November 5, 2009 letter, and once again can give no credit to your infringement allegations.

Contrary to the assertions in your letter, our October 21, 2009 letter clearly explains that Sirona's products are based upon panoramic technology of the type described in the Schulze-Ganzlin prior art, and do not utilize densitometry models. We believe that Osseo Imaging well understands what densitometry means, and its efforts to ignore that meaning and expand the term to encompass Sirona's products are misplaced. Tellingly, your letter does not set forth what you contend the term "densitometry" means, but instead opts to side-step the issue with the vague and conclusory assertion that the term is "broad" and therefore covers Sirona's products. This evasive approach falls far short of establishing a case for infringement (which is, of course, Osseo's burden), and our explanation as to why infringement is not possible here is more than adequate to rebut anything that is set forth in your letters.

Sirona is not infringing and has no interest in taking a license. What is more, you should be assured that, to the extent that Osseo Imaging might initiate what could be nothing more than a baseless lawsuit, Sirona will vigorously defend itself and pursue all remedies available to it, including seeking attorney fees and all other available remedies.

Very truly yours,



Michael P. Sandonato

MPS:dlh

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January 22, 2010

Via Email

Michael P. Sandonato, Esq.,
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1290 Avenue of the Americas
New York, NY 10104

Re: Osseo Imaging, LLC; Radiographic Densitometry Dental/Orthopedic Imaging
U.S. Patents 6,381,301 and 6,944,262
Our Reference: 5458-2

Dear Mr. Sandonato:

We apologize for not responding to your last letter sooner.

You have asserted in both of your prior letters that your clients do not infringe any of the claims of the above patents because your client's systems and methods do not involve "densitometry," but rather a form of "panoramic" X-ray scanning and/or imagery. However, there is nothing in either patent to indicate that these terms are in any way mutually exclusive. See, for example the '262 specification describing a "Modified Embodiment Densitometry System" and the various types of images, imaging and data captures that may result from such densitometry, e.g., "panoramic or tomographic images" (column 6, line 42); "periapical, bite wing, full mouth, panoramic and cephalometric imaging" (*Id.*, at lines 48-49); "in order to compile a panoramic, whole mouth or cephalometric image" (col. 7, at lines 11-12); and "periapical, bite wing, whole mouth, panoramic and cephalometric densitometry data captures" (*Id.* at lines 53-54).

Phillips v. AWH Corporation, 415 F. 3d 1303 (Fed. Cir. 2005), which overruled the *Texas Digital* line of cases giving precedence to extrinsic sources to construe claim terms, makes clear that the key to construing any claim is the way that term is actually used in the claims, the specification and the file history of the asserted patents; not in some contrary or narrower definition that may exist in other materials extrinsic to the patent. See *Phillips*, at 1320-23. "That [latter] approach, in our view, improperly restricts the role of the specification in claim construction." *Id.*, at 1320. "The main problem with elevating [extrinsic evidence such as a] dictionary to such prominence is that it focuses the inquiry on the abstract meaning of words rather than on the meaning of the claim terms within the context of the patent." *Id.*, at 1321. Extrinsic evidence, such as dictionaries and technical treatises,

may only be relied on when they do "not contradict any definition found in or ascertained by a reading of the patent documents." *Id.*, at 1322.

As we have previously pointed out, the Massie patents' specifications make clear that "densitometry" refers to any number of pre-existing "scanning X-ray techniques" including, but not limited to (specification examples illuminate, but do not add limitations. *Id.*, at 1323), the techniques described in the prior art patents cited at column 2, lines 1-20 of the Massie '301 patent (lines 10-29 in the '262 patent) and again at column 4, lines 20-24 (lines 52-55 in '262 patent). You do not address that evidence at all, relying instead on an undisclosed definition of densitometry that is apparently disconnected from the patents and thus legally irrelevant under *Phillips*, i.e., "We believe Osseo Imaging well understands what densitometry means." What our respective clients, or others, may or may not understand outside of the context of the patents at issue is completely irrelevant unless that understanding is explicitly tied to the claims, specification and file histories of the patents. Even an inventor's opinion means nothing unless backed up by language or illustrations within the four corners of the patent and its file history.

To (hopefully) advance this discussion in a meaningful way, we are providing, at your request, our claim constructions of the various patent terms using "densitometry" that we have derived from our review of the patents, specifications and file histories, and by applying controlling law and accepted maxims of claim construction. We sincerely invite you to challenge them with any meaningful contrary evidence or legal principles that you believe would properly inform this discussion.

1. "[T]omographical dental or orthopedic densitometry model" (Massie '301, claim 1):

"An image, map, template or other two or three dimensional pattern, plan, physical rendering, illustration or representation created by digitizing data obtained from sectional X-ray scanning techniques which depicts a patient's bone, tooth or connective tissue structural density (mass per unit volume)"

2. "[T]omographical densitometry model of said dental/orthopedic structure" (Massie '301, cl.10):

Same construction as above.

3. "[D]ental or orthopedic patient diagnostic parameters, including a pre-existing densitometry model." (Massie '301, cl. 20):

"Guidelines, templates, standards or baseline information, such as a pre-existing patient-specific or standard 'densitometry model' (as defined above) that is used in connection with an initial or follow-up dental or orthopedic diagnosis."

4. "[D]igital memory storing patient densitometry information." (Massie '262, cl. 1, 1st limitation):

"Computer memory which stores standard or patient-specific information relating to bone, tooth and connective tissue structural density at a given date and time."

5. "Signals representing densitometry of the patient's dental or orthopedic structure." (Massie '262, claim 1, 4th limitation):

"Digital or analog electrical signals conveying information about a patient's bone or tooth structural density (mass per unit volume)"

6. "[C]reating, storing and comparing three dimensional digital densitometry models without the use of fiducial markers of patient dental or orthopedic structure." (Massie '262, Claim 1, 5th limitation):

"Creating, storing in computer memory, and comparing two or more three dimensional digital 'densitometry models' (as construed in 1 above) without using markers (such as those depicted in [the cited prior art]) to compare specific portions or aspects of such 'densitometry models'."

7. "[D]ensitometry model comparison information." (Massie '262, Claim 1, 6th limitation):

"Information derived from comparing two or more two or three dimensional digital 'densitometry models' (as defined in 1 above)"

If you believe the above claim constructions are in any way inconsistent with the manner in which they are used in the Massie patents and their file histories, we would very much appreciate your bringing that to our attention so that we can revise our constructions, if necessary, in light of any legally relevant fact that you may think we have overlooked.

Ultimately, the correct claim constructions may have to be determined in a judicial *Markman* claim construction hearing but, as you know, getting to that point in litigation is both time-consuming and extremely expensive. In one of my recent cases, which involved very simple mechanical technology, it took nearly three years and almost \$1,000,000 in legal fees (just our side) to get a *Markman* ruling--because the court postponed claim construction until summary judgment was ripe, which unfortunately is not that unusual. Obviously, it is not in either of our clients' best interests to go that route, (although a judicial claim construction would also be helpful to our clients with respect to other parties' products).

Given our respective backgrounds and experience with claim construction issues, and the clear direction provided by the Federal Circuit in *Phillips*, we really should be able to move this discussion

Michael P. Sandonato
January 22, 2010
Page 4

further than we have and, hopefully see our way clear to a negotiated, rather than a litigated resolution. That aspirational goal should not, however, be interpreted as an unwillingness to litigate this matter, if necessary; but a common sense observation that our clients' time and money (several years and several millions) would be better spent negotiating than litigating. We look forward to your response.

Sincerely,

NIXON & VANDERHYE, P.C.

A handwritten signature in black ink, appearing to read "Robert A. Rowan", written over a horizontal dotted line.

Robert A. Rowan

Fitzpatrick

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February 22, 2010

VIA E-MAIL

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Re: Osseo Imaging's U.S. Patent Nos. 6,381,301 and 6,944,262

Dear Mr. Rowan:

We have carefully reviewed your January 22, 2010, letter. Osseo's infringement assertions remain without merit.

As regards the term "densitometry model," your latest letter effectively concedes that there can be no infringement by Sirona when that term is construed in accordance with its plain and ordinary meaning. Having made that concession, Osseo resorts to arguing that the term should be construed in a unique fashion that is different from its plain and ordinary meaning, in an effort to encompass the Sirona products, which as you know simply generate an image of a patient's mouth. Such efforts are unavailing, and the specification and prosecution history of the Massie patents mandate that the term be construed in its normal sense, as requiring, at an absolute minimum, a quantitative measurement of density.

While the law does permit a patentee in certain circumstances to be viewed as his so-called "own lexicographer," such an approach to claim construction is only permissible in very limited circumstances, namely when his intent to do so is clearly expressed in the written description. *See, e.g., Helmsderfer v. Bobrick Washroom Equipment, Inc.*, 527 F.3d 1379, 1380 (Fed. Cir. 2008) ("A patentee may act as its own lexicographer and assign to a term a unique definition that is different from its ordinary and customary meaning; however, a patentee must clearly express that intent in the written description.") In the case of the Massie patents, no such intent is expressed, and to the contrary, the written descriptions are entirely consistent with the plain, ordinary and well understood meaning of the densitometry term. For example:

- The specifications state that "Medical applications of densitometry include the diagnosis and treatment of such bone diseases as osteoporosis." *E.g.*, '301 patent at col. 2:6-8. Such diagnoses are only possible when a quantitative measurement of density is determined.

- The specifications refer to a dual-energy (first and second energy levels) technique. *See, e.g.*, '301 patent at col. 2:55-59; col. 3:2-3; flow chart of Fig. 2; and col. 5:14-15 stating that "dual-energy densitometry can result in a more accurate patient mode"). Dual-energy techniques are used in densitometry so that quantitative measurements of density may be obtained.
- The third-party documents which the Massie patents incorporate by reference are wholly consistent with the term "densitometry" requiring a quantitative measurement of density. *See, e.g.*, Re. 36,162, which refers expressly to "quantitative measurements such as bone density" (col. 9:20).

Because Sirona's products do not make or determine a quantitative measurement of bone density, they do not generate or use densitometry models, and therefore do not infringe the Massie patents.

The absence of densitometry models in Sirona's products, although dispositive of the infringement issue, are by no means the only grounds for non-infringement, and other grounds exist as well. For example, the Massie patents require features such as "storing a pre-existing tomographical dental/orthopedic densitometry model" and "comparing said pre-existing tomographical model to a current tomographical densitometry model," and it was on the basis of such features, in addition to the use of densitometry models, that Applicant argued for the patentability of his claims. *See infra*. Sirona's products, in contrast, do not perform comparisons using stored pre-existing models of any type, and therefore do not infringe for that additional reason.

Moreover, it appears that with respect to the limitation of comparing a pre-existing densitometry model with a present densitometry model, inequitable conduct was committed during at least the prosecution of the application for the '301 patent. More particularly, Applicant argued in his October 9, 2001 Amendment that his invention was patentable because it utilized:

a microprocessor having a database that includes a patient's
unique and predetermined densitometry modeling parameters
for comparison to the patient's present densitometry model

and went on to argue that the three prior art references at issue did not teach "comparing a patient's prior tomographical densitometry model with a patient's current densitometry model." Amendment at 4-5. Despite these representations and arguments, however, most of the pending claims, including independent claim 1, did not expressly recite the comparison feature, but rather recited only "means for storing a pre-existing tomographical, dental/orthopedic densitometry model." *Id.* at 2; 9. Applicant's arguments therefore constitute affirmative misrepresentations to the U.S. Patent and Trademark Office regarding

the language of his claims, and both the '301 patent and the '262 patent may well be rendered unenforceable as a result.

And in any case, the storage of existing densitometry models and comparisons of such stored densitometry models to present ones was well known in the prior art. For example, Lindh et al., "Quantitative Computed Tomography Of Trabecular Bone In the Mandible," Dentomaxillofacial Radiology, vol. 25, no. 3, pp. 146-150 (June 1996) (copy attached) is prior art to the Osseo patents under 35 U.S.C. §102(b) and describes that feature expressly as follows:

The measurement of BDM [bone mineral density] was performed twice in 20 CT images. The second measurement was made one week after the first and the entire procedure with window-setting and enlargement was repeated. The precision of single measurements was expressed as the standard deviation $SD = \text{SQR}[\Sigma d^2/2n]$, where d is the difference between the measurements and n is the number of duplicative measurements.

Id. at 148. This prior art, which teaches densitometry models as the term is purportedly construed, and teaches the storage comparison of prior and present densitometry models, renders Osseo's patent invalid.

Finally, the last paragraphs of your letter – with its references to millions of dollars in legal documents and so-called "common sense" – expose Osseo's efforts in connection with this matter for what they are, namely an illegitimate attempt to extort a license fee by raising the specter of litigation and the corresponding costs of the defense. Osseo should understand that Sirona will not succumb to such tactics. As you correctly point out, both you and I have litigated patent disputes on behalf of our clients and have also undoubtedly helped our clients resolve such disputes through negotiations. The latter approach, however, tends only to be possible when there is at some degree of merit to each side's position. Here, as developed above and in our prior letters, Osseo has no colorable claim, and under such circumstances, Sirona will not negotiate for a license.

Very truly yours,



Michael P. Sandonato

MPS:dlh
Attachment

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March 19, 2010

Via Email

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New York, NY 10104

Re: Osseo Imaging, LLC; Radiographic Densitometry Dental/Orthopedic Imaging
U.S. Patents 6,381,301 and 6,944,262
Our Reference: 5458-2

Dear Mr. Sandonato:

We thank you for your February 22, 2010 letter and provide the following in response.

As to your first point, we obviously made no "concessions." We simply pointed out that the starting point of your analysis is legally incorrect in a post-*Phillips* world and that the conclusions you draw from that erroneous analysis are therefore irrelevant. Moreover, since you had not previously provided even a hint of your definition of "densitometry," there was no way we could have possibly acquiesced in any such meaning.

Your current position, that "densitometry" must be construed as "requiring, at a minimum, a quantitative measurement of density," is either unhelpful to your client or is contrary to the Massie specifications. All "digitizing" requires the assignment of some sort of quantitative values. See *e.g.*, The McGraw Hill Dictionary of Scientific and Technical terms defining "digitize" as: "To convert an analog measurement of a quantity into a numerical value." Any computerized reconstruction of tomographic slices that begins with tooth and/or bone density-based images acquired by X-ray scans requires at least one mathematical algorithm to make that conversion and reconstruction. The Re 36,162 patent cited in the Massie specifications also explains how "quantitative values [are] assigned to each pixel," in any digital reconstruction. This essentially quantitative conversion process is further spelled out in both patents' specification (301 pat., col.4, lns. 32-38; 262 pat. col. 4, lns. 63-col. 5, ln. 3) as follows:

Analog signals from the detector array 16 are output to an analog-to-digital (A/D) convertor 20 from which digitized signals are transmitted to a merger device 22 for merging into formats

suitable for processing and analyzing by the microprocessor 6. The microprocessor 6, using data from the merger device 22, creates a tomographical densitometry model 24 which is transmitted to an output device or devices 24.

See also '301 patent dependent claim 3. Unless your client does not do what it says it does in your client's promotional literature, it very clearly converts tomographic density images into digitized reconstructions using quantitative values as explained above.

Your *Helmsderfer* citation also fails to advance your non-infringement position since that panel decision of the Federal Circuit can't and doesn't overrule the *en banc* decision in *Phillips*; and, unlike the *Helmsderfer* specification, the Massie I and II specifications and file histories fully support the claim constructions we have proffered. In *Helmsderfer*, the court predicated its wholly unsurprising finding that "partially hidden from view" does not mean "totally hidden from view" (527 F.2d. 1379) on the fact that "partially hidden from view" appeared nowhere in *Helmsderfer*'s specification (*Id.*, at 1382) and therefore provided absolutely no support for the plaintiff's oddball contention that "'partially' includes completely." *Id.*, at 1381. This is exactly the opposite of the present case where the '301 Massie patent uses the term "densitometry" no less than 22 times (I probably missed some) and the '262 patent uses it even more often. Both specifications also incorporate by reference multiple prior art patents as exemplars that preclude any construction of "densitometry" more restrictive than as used in those references. The Plaintiff in *Helmsderfer* was further precluded from prevailing on his screwy position by the doctrine of claim differentiation which provides no support for Sirona's contentions and indeed refutes them. See citation to '301 claim 3 above and the discussion below.

Your client's further contention that "densitometry" is limited to dual energy devices, based on one embodiment of the invention, violates the rule of construction that precludes using an exemplary embodiment (even when there is only one) to limit, as opposed to construe, the claims. Your construction also violates the doctrine of "claim differentiation" because it ignores that dependent claims 5 and 11 (and independent claim 20) of the '301 patent specifically require dual energy beams while none of the other claims, including independent claims 1 and 10, from which 5 and 11 depend, include that limitation. That distinction would be meaningless if dual energy beams were already imputed into all claims. Even without these specific legal doctrines, common sense would tell us that the specification's use of "dual-energy densitometry" (See '301 col. 5:14-15, cited on p. 2 of your own letter) would be a meaningless redundancy if "densitometry" already connoted only "dual-energy." You should also note that the author of the Lindh article you cite as prior art for "the storage of existing densitometry models and comparisons of such stored densitometry models..." used a "single energy QCT" because "the precision is higher than that of a dual-energy QCT." See Lindh, at page 148.

While the cited Lindh article is instructive in the above regard and in disclosing mathematical differences between time-separated images, it neither "form[s]," nor "stores" nor "compares" nor "output[s]" any "models" within the "system" that takes the images, as is required by the claims of the Massie patents. In Lindh, the only hardware disclosed is the scanner, a Siemens Somatom DRG

scanner, which appears to be a large hospital or laboratory-based machine. No microprocessor is mentioned and certainly not one that is part of or "connected to" the scanner controller or which drives the other functions required by the Massie patents. Nor is any other hardware or software or other "means" disclosed to "store" or "compare" or do any of the other steps or functions of Massie I or II. In short, no all-in-one PC-driven, scanning, processing, reconstructing, storing and/or comparing diagnostic tool is disclosed. Lindh also discloses no "patient" diagnoses as required or implied by '301 claims 10-20 and all claims of the '262 patent. See, e.g., claims 14-16 directed to "detecting incipient caries/dental fractures/apical abscesses." Lindh involves only a statistical study of the bone density of cadaver jaws which had been removed from the cadavers and separately X-rayed, a process very distinct from tomographically scanning a living person's jaw or teeth *in situ* as part of a treatment plan. Disclosure of the invention of the Massie '262 patent is further precluded by the specific mention of the use of "tantalum pins" "to obtain reference points," i.e., "fiducial markers," which the claims of that patent specifically preclude.

Regarding your contention that "Sirona's products, in contrast, do not perform "comparisons," we first note, as your own letter observes, that only certain claims, i.e., 9, 18 and 20 of the '301 patent and 1-6 of the '262 patent specifically require "comparing." The "storing" limitation of the other claims of the '301 patent does, however, create "a database" "for [later] comparison to the patient's present densitometry model," as correctly represented by Mr. Brown in his October 9, 2001 Amendment. It is that stored database which permits the "comparing" requirement of '301 claims 9, 18 and 20 and all the claims of the '262 patent. There is therefore nothing erroneous, let alone deceptive, about Mr. Brown's characterization of the prior art or the claimed invention. Moreover, we are not aware of any reported decision finding inequitable conduct based on a representation of what is in or is not in a claim presented for examination, as opposed to the prior art, particularly when both the claims and the art are directly in front of the examiner. Please let us know if you are aware of such authority.

We look forward to any further response you care to provide, failing which we must insist that your client negotiate a license with Osseo Imaging or cease all production, promotion and sales of the infringing products.

Sincerely,

Sincerely,

NIXON & VANDERHYE, P.C.



Robert A. Rowan

Fitzpatrick

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April 16, 2010

VIA E-MAIL

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Re: Osseo Imaging's U.S. Patent Nos. 6,381,301 and 6,944,262

Dear Mr. Rowan:

This is in response to your March 19, 2010 letter. Osseo's assertions remain without merit.

Osseo asserts that it has "made no concessions," and yet it continues to contend that the term "densitometry" should be construed in a manner that is wholly divergent from its plain and ordinary meaning. As you well know, in both what you call the "post-*Phillips* world" and the "pre-*Phillips* world," such claim constructions are only tenable when there is a clear intent expressed in the written description. As we developed in detail in our prior letter, there is no such intent in the Massie patents, and to the contrary, their specifications are entirely consistent with the plain and ordinary meaning of the densitometry term.¹

Rather than directly address the claim construction points that we made, Osseo tries to side-step them by injecting a new term "digitize" into our dialogue, and proceeds to construe that term in an effort to establish infringement. But of course, the Massie patents require the creation and use of densitometry models, and not the mere digitizing of captured images, and Osseo's efforts to establish infringement by substituting a given claim term with a different one violate the most basic tenets of patent law.

Osseo's approach of substituting one word for another is especially egregious where the word that is being substituted-in is already used elsewhere in the claims. For example, '301 patent independent claim 10 recites the step of forming a "densitometry model" while dependent claim 11 recites the self-styled "additional step" of "digitizing." By the very words of the

¹ In this regard, Sirona never advanced that the *Helmsderfer* decision overrules *Phillips*, as your letter seems to suggest. *Phillips* and *Helmsderfer* are entirely consistent with one another, with *Phillips* holding that the best source for claim construction is the patent specification, and *Helmsderfer* holding that a patentee cannot advance a unique definition for a patent term unless the specification shows a clear intent on the part of the inventor.

Massie claims, therefore, forming a “densitometry model” and “digitizing” are distinct and separate actions, and Osseo’s efforts to conflate the two are entirely misplaced.

Osseo’s argument that Sirona has contended that densitometry is limited to dual-energy establishes that Osseo has either misapprehended what Sirona has said, or (perhaps more likely) understands fully and can address the point only by erecting a straw man. Please review our February 22 letter. It does not contend that all of Osseo’s claims are limited to dual-energy techniques, or read embodiments into the claims. Rather, our letter appropriately identifies the specifications’ teachings of dual-energy techniques as exemplary evidence that the specifications use the densitometry term in its plain, ordinary and well-understood sense, and not in some unique and broader sense, as Osseo is trying to advance.

Regarding prior art, it is not possible for Osseo to contend that *Lindh* is missing the teachings that you identify, when it clearly and expressly discloses forming two measurements of BMD a week apart from one another, and clearly and expressly discloses a calculation that takes the difference between the two. Moreover, Osseo is wrong on its conclusions regarding the Siemens Somatom System, a point made manifest by a simple inspection of the Somatom manuals (copies attached). As you will see, all elements which Osseo contends are missing from the Somatom System, were in fact clearly present therein.²

As to Osseo’s assertion that “only certain claims...require ‘comparing’,” it is beyond dispute that the Applicant represented to the USPTO during the prosecution of the ‘301 patent that *all* of the claims contained that feature. Applicant’s exact words were as follows:

The features that Applicant respectfully submits patentably distinguish Applicant’s invention over the prior art include the teaching of a dental and orthopedic densitometry modeling system utilizing a microprocessor having a database that includes the patient’s unique and predetermined densitometry modeling parameters *for comparison to* the patient’s present densitometry model.

* * *

[N]owhere in the Schulze-Ganzlin patent *does it teach comparing* a patient’s prior tomographical densitometry model with a patient’s current tomographical densitometry model.

* * *

² As you may know, Sirona was originally formed as a result of Siemens spinning-off of its dental businesses.

Nowhere in the Arai patent *does it disclose the concept of comparing* a patient's prior tomographical densitometry model to a patient's present tomographical densitometry model.

* * *

Nowhere in the Suzuki patent *is taught to compare* a patient's prior tomographical densitometry model with a patient's current tomographical densitometry model.

October 9, 2001 Amendment at 4-5 (emphasis added).³

The foregoing remarks were made with respect to all of the pending claims. And in those remarks, Applicant not only argued that a distinguishing aspect of his invention was utilizing a microprocessor that stores "predetermined densitometry modeling parameters *for comparison* to the patient's present densitometry model" (the term "later" that Osseo seeks to insert was, of course, not part of his remarks) but also argued not once, not twice, but three times that the prior did not teach comparing. There is therefore no room to argue that these statements were directed to a "storing" rather than "comparing" feature. And, having made those arguments, Osseo cannot now contend that it has claims that do not require comparing. *See, e.g., Alloc, Inc. v. ITC*, 342 F.3d 1361, 1372 (Fed. Cir. 2003), *cert. denied*, 541 U.S. 1063 (2004).

Finally, on the inequitable conduct point, as you know when misrepresentations are material and intentionally made, inequitable conduct exists. A misrepresentation is material when a reasonable examiner would have considered it important in rendering his decision on patentability. *Li Second Family Ltd. Partnership v. Toshiba Corp.*, 231 F.3d 1373, 1379 (Fed. Cir. 2000). Osseo's position that misrepresentations can only be material when they relate to prior art is incorrect, and it is certainly reasonable that an examiner would rely on what an Applicant says about his claims.

* * *

³ In addition to stressing the importance of the comparison feature, Applicant also by these remarks stressed the importance of the use of densitometry models, as we pointed out in our October 21, 2009 letter.

Robert A. Rowan, Esq.
April 16, 2010
Page 4

We fully explained Sirona's views on taking on license in our prior letter, and Sirona remains firm in that conviction.

Very truly yours,

A handwritten signature in black ink, appearing to read "Michael P. Sandonato", with a large, sweeping flourish at the end.

Michael P. Sandonato

MPS:jlc/dlh

Enclosures

FCHS_WS 4908801_1.DOC

Nixon & Vanderhye P.C.

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June 18, 2014

Via Email and U. S. Mail

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Re: Osseo Imaging, LLC v. Sirona Dental Systems
U.S. Patent Nos. 6,381,301 and 6,944,262 and 8,498,374
Our Reference: 5458-2

Dear Mr. Sandonato:

As you may recall, we exchanged correspondence in late 2009 through the early Spring of 2010 with respect to Osseo Imaging's U.S. Patent Nos. 6,381,301 and 6,944,262. At that time, your client (Sirona) took the position that those patents were not relevant for two reasons. First, Sirona asserted that the claims in these patents are invalid in view of certain prior art that you cited. See page 3 of your letter of January 22, 2010. Second, Sirona alleged that there was no infringement because its dental imaging machines "do not make or determine *quantitative* measurements of bone density, [and thus] they do not generate or use densitometry models." See page 2 of your letter of February 22, 2010.

In my responsive letters, I disagreed with these invalidity and non-infringement arguments and explained my reason for doing so. We could not reach agreement at that time.

U.S. Patent No. 8,498,374 – Validity Over Sirona Prior Art

Due my client's limited funds, Osseo took the reasonable step of filing a continuation application in order to address these two defenses raised by your client in the most cost-effective way. Significantly, this new application was granted and my client received U.S. Patent No. 8,498,374. A copy of this patent is enclosed for your easy reference. Please note that the issue date of this patent is July 30, 2013. As a result, damages arising from infringement of the '374 patent begin accruing as of that date.

As you will independently determine when you review the file history of the '374 patent, the prior art that you previously identified was considered by the USPTO and the new claims issued over that prior art. Moreover, the Examiner identified particular claim limitations as

setting forth the “statement of reasons for allowance.” See pages 2-3 of Notice of Allowability, dated March 10, 2013.

In essence, independent Claim 1 was allowed due to the presence of (i) a controller with a microprocessor (and a memory device connected thereto), (ii) wherein the controller is adapted to store computed tomographic dental models, and (iii) a converter is provided for converting detector array signals. Independent Claims 13 and 21 were allowed for similar reasons except that the controller also is adapted to create, store and compare 3D digital tomographic models without the use of fiducial markers. As a result, Sirona’s prior art argument was considered and rejected.

U.S. Patent No. 8,498,374 – No Densitometry Claim Limitation

In addition, please note that that none of the claims in the ‘374 patent contain a “densitometry” limitation. Thus, Sirona’s second argument relating to non-infringement on this basis is not relevant with respect to the claims of this patent.¹

For the purpose of your client’s review, Osseo specifically directs Sirona’s attention to claims 11-13, 15 and 21 of the ‘374 patent. In addition, Osseo identifies at least the Galileos Comfort Plus as an infringing product.

U.S. Patent Nos. 6,381,301 and 6,944,262 – Sirona’s New Machines

We have also discovered that in the past three years and after the conclusion of our exchange of correspondence, Sirona began to manufacture and sell products that make quantitative measurements of bone density and/or generate or use densitometry modes, which you indicated were not features of earlier models. See, for example, the Galileos Comfort Plus machines.

Consequently, the non-infringement arguments that your client made in late 2009 to early 2010 are not relevant with respect to these new machines. In that regard, it is our understanding that the Galileos Comfort Plus was first sold in early 2013.

With respect to the ‘301 and ‘262 patents, damages began to accrue as soon as U.S. sales of the identified products began. For the purpose of your client’s consideration, Osseo specifically identifies claims 10, 13 and 20 of the ‘301 patent and claim 1 of the ‘262 patent. Further, we direct your client’s attention of the Notices of Allowability in those two patents,

¹ Page 2 of your February 22, 2010 letter also asserts as a secondary basis for non-infringement that “Sirona’s products ... do not perform comparisons using stored pre-existing models of any type” This statement is incorrect with respect to, *inter alia*, the Galileos Comfort Plus product.

which (when compared with the Notice of Allowability in the '374 patent) demonstrate that Sirona's prior art is also not relevant to the claims of the '301 and '262 patents.

The introduction of new equipment by Sirona (without notifying Osseo) that contain densitometry and comparison features after our exchange of correspondence ended in mid-2010 is significant for another reason. The addition of these features establishes that Sirona recognized the commercial importance of those features and, as a result, made a deliberate decision to add these features despite the fact that these modifications destroyed Sirona's prior non-infringement arguments, thereby evidencing willful infringement of both the '301 and '262 patents.

Damages

Because Osseo does not know the exact amount of infringing products that have been made, used and/or sold by Sirona in the United States, Osseo is unable to provide a precise damages calculation. As you will appreciate, Sirona must provide that information (either voluntarily or involuntarily) before serious discussions can be undertaken.

However, as a very rough estimate, Osseo makes the following infringement/damages observations:

- (1) With respect to the '374 patent, Osseo believes that, at a minimum, the Galileos Comfort Plus machines (and related software) infringe the '374 claims identified above. Based upon Osseo's estimate of the sales of these Sirona machines in the United States, infringing sales by Sirona of the '374 patent since July 30, 2013 are at least \$90 million.
- (2) The foregoing equipment also infringes the '301 and '262 patent claims identified above. Infringing sales of these patents are estimated to be over \$90 million. Osseo will seek enhanced damages (*i.e.*, treble damages) and attorneys fees with respect to the infringement of those claims.
- (3) Projecting the future sales of infringing Sirona devices results in a minimum additional infringement estimate of at least about \$600 million through December 19, 2019 for claims in the '301, '262 and '374 patents.
- (4) Due to the commercial importance of the patented technology as recognized by the USPTO and by Sirona (by adopting features it knew were patented and in promoting such features in its sales materials and other literature) and due to the fact that there is infringement of claims in three different patents, Osseo believes that a minimum reasonable royalty is in excess of 10%.
- (5) Finally, the damages calculation should reflect interest for past infringement and a reduction for future infringement to reduce those damages to current value. Using a conservative 10% royalty figure and making these adjustments, we estimate that total projected damages will be above \$65 million. As discussed above, these

Michael P. Sandonato
June 18, 2014
Page 4

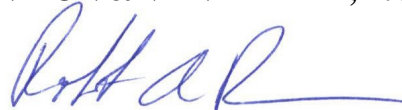
damages should be trebled due to the deliberate infringement by Sirona of at least the '301 and '262 patents.

Osseo trusts that Sirona will quickly and realistically respond to this letter in view of its significant infringement problems and its substantial liability for damages. Osseo believes that it is in both parties' interests to discuss an amicable resolution involving, for example, licensing or sale of patent rights. In that regard, after studying the matter, and giving consideration to the fact that one or more of Sirona's competitors may also be infringing Osseo's patents, Sirona may also decide that a purchase of Osseo's patent rights is in its long-term commercial best interests.

I look forward to hearing from you. Best regards.

Sincerely,

NIXON & VANDERHYE, P.C.



Robert A. Rowan

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July 25, 2014

VIA E-MAIL

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Re: Osseo Imaging's U.S. Patent Nos. 6,381,301, 6,944,262, and 8,498,374

Dear Mr. Rowan:

We have reviewed your June 18, 2014 letter. Osseo's infringement assertions remain without merit.

First, your allegations regarding "Sirona's New Machines" are incorrect. Sirona's products, including Galileos Comfort Plus, do not make or determine a quantitative measure of bone density and thus do not generate or use densitometry models, and therefore do not infringe the '301 or '262 patents. If you have a basis for asserting otherwise, please state it.

Second, notwithstanding Osseo's recent prosecution, the claims of the '374 patent are limited to systems that perform densitometry modeling and, for at least this reason, cannot be infringed by any of Sirona's products. Osseo's use of the term "tomographic model" in the claims of the '374 patent cannot change the fact that the invention, if any, described in the patent specification is limited to densitometry modeling.

In *Honeywell Int'l, Inc. v. ITT Indus., Inc.*, 452 F.3d 1312 (Fed. Cir. 2006), the Federal Circuit was confronted with a similar situation when it held that a disputed claim term, "fuel injection system component," was limited to a "fuel filter." In doing so, the Court acknowledged that the plain and ordinary meaning of "fuel injection system component" was broader than a "fuel filter," and also that the patentee had advocated in favor of a construction broader than "fuel filter" during prosecution. *Id.* at 1316-19. Nevertheless, the Federal Circuit ruled that the claim term "fuel injection system component" was limited to a "fuel filter" because the specification characterized the invention itself as relating to a fuel filter. *Id.* at 1318. Similarly here, the specification for the '374 patent makes clear that the invention is limited to densitometry modeling. For example, the title of the patent is "Dental and orthopedic densitometry modeling system and method." And the specification uniformly defines "the invention" in terms of densitometry; for example, the specification expressly states:

The present invention relates generally to dental and orthopedic diagnosis and treatment, and in particular to a densitometry modeling system and method.” ’374 patent, col. 1, ll. 25-27.

The present invention utilizes such densitometry modeling and mapping techniques for dental applications. *Id.*, col. 2, ll. 31-32.

[T]he present invention has applications in monitoring osseointegration. . . . The application of tomographical densitometry techniques to osseointegration monitoring can provide the dental or medical practitioner with important information in evaluating the effectiveness of implant procedures. *Id.*, col. 2, ll. 33-35, 38-42.

In the practice of the present invention, a dental and orthopedic densitometry modeling system utilizes a controller with a microprocessor and memory. *Id.*, col. 2, ll. 51-53.

Each of the claims of the ’374 patent recite “tomographic(ally) modeling” and “tomographic model(s).” Just as the “fuel system component” term in the *Honeywell* case was limited to a “fuel filter,” so are references to tomographic modeling and models in the ’374 patent claims limited to densitometry modeling. Accordingly, for at least this reason, Sirona’s products do not infringe any claim of the ’301, ’262, or ’374 patents.

Further, even if the omission of the term “densitometry” from the claims of the ’374 patent could have the broadening effect on claim scope that Osseo wishes, it would only render the claims invalid under 35 U.S.C. § 112. The specification simply does not provide enablement or written description support for the full scope of a claim devoid of any densitometry modeling requirement. And, in any case, such a claim would reach well beyond what the applicant regarded as his invention. *See, e.g., Lizardtech, Inc. v. Earth Resource Mapping, Inc.*, 424 F.3d 1336, 1345 (Fed. Cir. 2005) (“After reading the patent, a person of ordinary skill in the art would not understand how to make a seamless DWT generically and would not understand Lizardtech to have invented a method for making a seamless DWT, except by ‘maintaining updating sums of DWT coefficients.’”)

Finally, the claims of the ’374 patent are invalid under 35 U.S.C. §§ 102 and 103. Though the Examiner may have considered certain prior art that we previously identified, we note that Osseo did not provide the Examiner with our analysis of that art or even direct his attention to the passages that we cited. The claims of the ’374 patent are also anticipated by or obvious in view of references that were not considered by the Examiner, such as IT1277796 to Mozzo et al. (copy enclosed).

Robert A. Rowan, Esq.
July 25, 2014
Page 3

We trust that, in view of this prior art, and having been advised of the continued absence of densitometry models in Sirona's products, you will close your files on this matter. Once again, Sirona is not infringing and has no interest in taking a license.

Very truly yours,

A handwritten signature in blue ink that reads "Mike".

Michael P. Sandonato

Enclosure

FCHS_WS 10452445v1.doc

Nixon & Vanderhye P.C.

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Re: Osseo Imaging, LLC v. Sirona Dental Systems
U.S. Patent Nos. 6,381,301 and 6,944,262 and 8,498,374
Our Reference: 5458-2

Dear Mr. Sandonato:

We have reviewed your letter of July 25, 2014 and this letter presents our reply to your client's arguments. At the outset, I apologize for the delay in responding to your letter. Unfortunately, I was involved in a serious bicycle accident and I was hospitalized for several days. I am still recovering from the accident.

As you will ascertain from this letter, Osseo is convinced that your client's arguments are without factual or legal support.

1. Sirona's Equipment Makes And Uses Densitometry Models

Sirona asserts that its "products, including the Galileos Comfort Plus, do not make or determine a quantitative measure of bone density and thus do not generate or use densitometry models." On this basis, Sirona denies infringement of Osseo's three patents. Further, your letter requests that Osseo state the basis/bases for asserting otherwise.

At the outset, none of the claims of the '301, '262 or '374 patents require that there be a "quantitative measure [or measurement] of bone density." Rather, the '301 and '262 patents merely require "densitometry models" or "densitometry information." Further, the '374 patent claims make no mention whatsoever of densitometry. Therefore, Sirona is improperly attempting to create claim limitations that do not exist and are not required by the specification.

Moreover, in response to your request, we provide a partial identification of densitometry models or information that can be obtained by the use of Sirona's equipment so as to result in the infringement of the claims identified in my prior letter:

First, attached are photos of two density readings that Osseo obtained when using Sirona equipment. The numbers are grayscale values. Exhibit 1. In addition, at least some Sirona software programs include a separate density icon to obtain density and/or grayscale information.

Second, Osseo is not the only entity able to obtain density measurements by using Sirona equipment. A quick Internet search located a number of Sirona customers who support Osseo's position that Sirona systems provide densitometry models and information. For example, please see Exhibit 2, where Dr. Rod Gore states that "Utilizing this [Sirona] technology, our team can ... measure and evaluate your precise bone density and structure"; Exhibit 3, wherein Dr. Khullar touts the Galileos system with respect to bone density images and expressly states that the system can be used to "[m]easure the density of the jawbone"; and Exhibit 4, where Dr. Receveur says essentially the same thing.

Third, Sirona's public statements support Osseo's position. See, for example, Exhibit 5, a website of Sirona. Under the heading "Density measurement," the website expressly indicates that:

The analytical feature "Measure density profile" provides you with a helpful tool for implantology and oral and maxillofacial surgery.

In addition, see Exhibit 6, stating that "Failing root canals, NICO lesions, bone density and abnormalities are now detectable." Further, we direct your attention to Exhibit 7, which is a Sirona brochure. Please see pages 7 and 10 that refer to density and volumetric images.

In summary, Sirona's non-infringement argument based upon the "densitometry model" language of claims 10, 13 and 20 of the '301 patent and claim 1 of the '262 patent is factually incorrect.

2. Sirona's "Tomographic Model" Argument Regarding The '374 Patent Is Wrong

For this same reason, Sirona's "Second" non-infringement argument (relating to the '374) must fail. Even assuming *arguendo* (i.e., without agreeing with the argument) that claims 11-13, 15 and 21 of the '374 patent claims must be read to require densitometry modeling, the prior comments and Exhibits demonstrate that Sirona's systems provide densitometry modeling and information. Thus, Sirona's non-infringement argument has no merit with respect to claims 11-13, 15 and 21 of the '374 patent.

Turning to Sirona's legal argument that the '374 patent claims must be read so that "tomographic modeling" always requires "densitometry modeling," this argument also is erroneous. In that regard, Sirona's reliance upon the *Honeywell* decision is misplaced.

Here, unlike in *Honeywell*, Osseo obtained three different patents having three different claim requirements with respect to tomography and densitometry. In other words, the difference in the claims emphasizes that those terms are not to always be used interchangeably. By way of contrast, in *Honeywell*, there was no similar claim differentiation with respect to the phrase “fuel injection system component.”

More specifically, the asserted claims in the first patent (‘301) are directed to a “method of tomographically modeling dental and orthopedic densitometry.” Thus, the claims require that densitometry information be tomographically modeled. Indeed, the quoted language emphasizes that the two terms are not identical.

Claim 1 of the second patent (‘262) relates to “dental or orthopedic models” that utilize “densitometry information.” That claim makes no mention whatsoever of tomography.

Finally, the asserted claims of the third patent (‘374) cover “tomographic modeling.” Significantly, they do not mention “densitometry.”

In summary, the differences in the claim language of the three patents (and their corresponding application claims) readily explain to one of ordinary skill in the art that the terms are not inexorably intertwined. In addition, the specification explains this by its separate discussion of “tomography” (col. 2, ll. 8-10) and “densitometry” (col. 2, ll. 15-17). Also, the different nature of the terms is emphasized by the reference in the specification to “commercially available tomographic equipment” (col. 3, ll. 21-22). In our opinion, a person of ordinary skill in the art would readily understand that such a commercially available tomographic machine could be operated without utilizing densitometry information.

The difference in the meanings of the terms and the claim language also is reflected in the Examiner’s three Notices of Allowability. With respect to the ‘301 patent, the Examiner said “though the prior art discloses tomographic modeling for dentistry, it fails to teach or suggest the further steps and system for inputting or containing patient diagnostic parameters, including a pre-existing densitometry model.” This language demonstrates that the Examiner did not view the phrases “tomography” and “densitometry” to be identical and/or inseparable.

Similarly, with respect to the ‘262 patents, the Examiner wrote that “the prior art fails to teach a digital modeling system ... having a computer for creating, storing and comparing three-dimensional densitometry models.” No reference is made in that statement (or in the ‘262 patent claims) to tomography.

Further, the reasons for allowability of the ‘374 are even more detailed. There, the Examiner found that the prior art failed to disclose the claimed tomographic modeling system because the prior art failed to show (i) a controller with a microprocessor, which has a memory device, (ii) a controller adapted for creating, storing and comparing tomographic dental models,

and (iii) a converter for converting signals, wherein the converter is connected to the detector array and the microprocessor. As noted previously, the Examiner's comments (and the '374 patent claims) do not mention, let alone require, densitometry.

These three statements are entirely logical because tomography is merely sectional imaging, whereas densitometry provides density information. Consequently, the differences in these two technical terms are well within the knowledge of one of ordinary skill in the art.¹

Thus, unlike *Honeywell*, the facts here demonstrate that the phrase "tomographic modeling" in the '374 patent should not be construed so as to always require "densitometry modeling." Stated in somewhat different words, those terms cover different concepts.

3. IT 1277976 Does Not Invalidate The Nine Claims of the '301, '262 and '374 Patents

Thank you for providing us with your translation of IT 1277976 on July 31, 2014. Unfortunately, the translation is rather rough and unclear in many places. As a result, we have ordered (but not yet received) a better translation.

Without waiving our right to make further comments upon receipt of a better translation, it is our opinion that this reference does not teach or suggest the inventions in the asserted claims of the '301, '262 or '374 patents for at least the following reasons:

First, the reference does not teach or suggest the concept of creating, storing and comparing dental models.

Second, the reference does not teach or suggest the specific hardware and/or software requirements of the asserted claims in the '301, '262 and '374 patents. For example, the specific system components and functions (such as the controller/storage functions; the input function to the microprocessor; the output device from microprocessor; and the use of pre-existing patient or commercially available models) are missing from the Italian reference.

In short, the Italian reference relied upon by Sirona is no better than the prior art already considered by the Examiner. Indeed, the reference appears to be less relevant than at least some of that prior art.

Conclusion

¹ Obviously, the Patent Office Examiner must always determine whether the requirements of Section 112 are met. Here, the '374 patent was granted without a Section 112 objection of the type set forth on page 2 of your letter.

Michael P. Sandonato
August 25, 2014
Page 5

In view of the above, Osseo reiterates its opinion that (a) Sirona has very significant infringement and liability problems; and (b) it is in both parties' interests to discuss an amicable resolution involving, for example, the licensing or sale of patent rights. In that regard, we believe that a purchase of Osseo's patent rights probably is in your client's long-term commercial best interests in view of both Sirona's and its competitors' use of the Osseo patent rights.

Osseo welcomes meaningful dialog. Best regards.

Sincerely,

NIXON & VANDERHYE, P.C.



Robert A. Rowan

Fitzpatrick

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October 3, 2014

VIA E-MAIL

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Re: Osseo Imaging's U.S. Patent Nos. 6,381,301, 6,944,262, and 8,498,374

Dear Mr. Rowan:

We have reviewed your August 25, 2014 letter. Osseo's infringement assertions remain without merit.

I. Sirona's Equipment Does Not Make or Use Densitometry Models

Sirona's equipment can be used to measure *relative* grey levels. Sirona's equipment cannot be used to make or determine a quantitative measure of bone density and thus generate densitometry models as required by the claims of Osseo's '301, '262, and '374 patents.

As set forth in our prior correspondence, the specifications of Osseo's patents teach the use of dual-energy techniques to generate densitometry models for diagnostic purposes. In fact, the "present invention" is defined in terms of "X-ray beams at first and second energy levels to provide densitometry output." '374 patent, col. 1, ll. 25-27; col. 2, l. 62 - col. 3, l. 1; *see also Verizon Servs. Corp. v. Vonage Holdings Corp.*, 503 F.3d 1295, 1308 (Fed. Cir. 2007) ("When a patent thus describes the features of the 'present invention' as a whole, this description limits the scope of the invention").

The '301, '262, and '374 patents teach that dual-energy densitometry techniques output an *absolute* measure of density. For example, Re. 36,162 is incorporated by reference in Osseo's patents and entitled, "Whole-body *dual-energy bone densitometry* using a narrow angle fan beam to cover the entire body in successive scans." Re. 36,162 defines "the diagnostically useful quantity of bone mineral density" as an absolute measure that results from a dual-energy scan: "(BMC) in g/cm²." *Id.* at col. 9, ll. 44-46.

By contrast, Sirona's equipment merely outputs relative grey levels. It does not make or determine such an absolute, quantitative measure of bone density. Sirona's equipment therefore does not generate densitometry models as required by the claims of Osseo's '301, '262, and '374 patents and cannot infringe those claims.

II. The Claims of the '374 Patent Are Limited to Densitometry Modeling

In our last letter, we explained that because the specification of the '374 patent repeatedly and uniformly defines the "invention" in terms of "densitometry modeling," the claims must include such a limitation. This is true regardless of whether the claims use the term "densitometry model." *Honeywell Int'l, Inc. v. ITT Indus., Inc.*, 452 F.3d 1312, 1318 (Fed. Cir. 2006).

Osseo points to differences in the claim language among its '301, '262, and '374 patents, and incorrectly asserts that "there was no similar claim differentiation" in *Honeywell*. Osseo is simply wrong.

In *Honeywell*, the court acknowledged that U.S. Patent No. 5,164,879 ("the '879 patent") in suit was related to two other patents, namely, U.S. Patents No. 5,076,920 (parent) and 5,164,084 (sibling). *Id.* at 1314. Unlike the claims of the '879 patent, which recite a "fuel injection system component," *all claims of the two related patents recite a "fuel filter."* Notwithstanding this differentiation, the court construed the "fuel injection system component" limitation in the '879 patent claims to be limited to a "fuel filter." Similarly, Osseo's use of the term "tomographic model," as opposed to densitometry model, in the '374 patent claims does not broaden their scope.

III. IT 1277976 Invalidates the Claims of the '301, '262 and '374 Patents

Lastly, the claims of Osseo's patents are invalid in view of IT 1277976 ("Mozzo"). Contrary to Osseo's assertion, Mozzo does disclose "system components and functions" such as "the controller/storage functions," "the input function to the microprocessor," and "the output device from microprocessor." *See Mozzo* at 5 and Fig. 1 ("a computer 10 for control and data processing."); *id.* at 10 ("the digitized images are stored in computer memory 10 and subsequently processed."); *id.* at 13 ("the display module allows you to present the results obtained by the reconstruction."). The other features allegedly missing from Mozzo are expressly disclosed in "Quantitative Computed Tomography of Trabecular Bone in the Mandible" ("Lindh"), which was discussed in our prior correspondence. As such, the claims of Osseo's patents are invalid, at least as obvious, in view of Mozzo and Lindh.

Once again, Sirona is not infringing and has no interest in taking a license to Osseo's patents.

Very truly yours,

A handwritten signature in blue ink that reads "Michael P. Sandonato/dlh".

Michael P. Sandonato

Nixon & Vanderhye P.C.

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November 24, 2014

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Re: Osseo Imaging, LLC v. Sirona Dental Systems
U.S. Patent Nos. 6,381,301 and 6,944,262 and 8,498,374
Our Reference: 5458-2

Dear Mr. Sandonato:

We have reviewed your letter of October 3, 2014 and find your response puzzling and unresponsive.

1. Sirona's Equipment Makes And Uses Densitometry Models

Your October 3rd letter totally ignores and does not dispute the factual evidence set forth in my August 25, 2014 letter, which we can only take as a tacit acknowledgment of those facts and your client's inability to refute those points. Please review my "First," "Second" and "Third" points which indisputably establish that Sirona's equipment provides "densitometry models" and/or "densitometry information." Moreover, your client's assertion that it only provides relative grey level information is demonstrably false as shown, for example, by Exhibits 1-2 to my prior letter. Further, as pointed out in my prior letters, none of the asserted claims of the '301, '262 or '374 patents require that there be a "quantitative measure [or measurement] of bone density." Rather, the asserted '301 and '262 claims merely require "densitometry models" or "densitometry information" and the asserted '374 patent claims make no mention whatsoever of densitometry.

Similarly you have not provided any persuasive evidence in any of your letters that Sirona's claim interpretation requiring "a quantitative measure of bone density" is supported by any law or facts. Accordingly, your client's current position, that the asserted Osseo patents require an even higher measure of densitometry information – *i.e.*, "an *absolute* measure of bone density," simply does not pass the test of objective credibility.

Moreover, this new claim interpretation is even less supported than your prior constructions, as demonstrated by your reliance upon a third party patent Re. 36,162 that is identified only in the Background of the Invention of the Osseo patents. Furthermore, your citation to the language at col. 9, ll. 44-46 is not helpful to your position. To the contrary, that language makes clear that this is merely an “example” of one option in FIG. 8 of Re. 36,612.

2. Sirona’s “Tomographic Model” Argument Regarding The ‘374 Patent Is Wrong

Sirona’s “Second” non-infringement argument (relating to the ‘374 patent) likewise fails. Even assuming *arguendo* (i.e., without agreeing with the argument) that claims 11-13, 15 and 21 of the ‘374 patent claims should be read to require densitometry modeling, the prior comments and Exhibits in my August 25th letter demonstrate that Sirona’s systems provide such densitometry modeling and information. Thus, on that basis, Sirona’s non-infringement argument has no merit with respect to claims 11-13, 15 and 21 of the ‘374 patent.

As for *Honeywell*, please note that all of the claims in the three patents at issue there used the word “fuel” – either “fuel filter” or “fuel injection system.” In contrast, the word “densitometry” does not appear in the ‘374 patent claims at all. Likewise, the Notice of Allowability in the file history of that patent makes no reference to “densitometry” in the “examiner’s statement of reasons for allowance.” These two facts alone are sufficient to distinguish *Honeywell*.

Osseo obtained three different patents having three different claim requirements with respect to *tomography and densitometry*. Under the various doctrines of claim differentiation, the differences in the claims make clear that those terms are not interchangeable. For example, the asserted claims in the first patent (‘301) are directed to a “method of tomographically modeling dental and orthopedic densitometry.” Requiring that the claimed densitometry information be tomographically modeled emphasizes that the two terms are not identical. Likewise, Claim 1 of the second patent (‘262) relates to “dental or orthopedic models” that utilize “densitometry information.” That claim makes no mention of tomography and further establishes the differences in the claims in the three patents. Finally, the asserted claims of the third patent (‘374) cover “tomographic modeling” and never mention “densitometry.”

As I further explained, at pages 3-4 (beginning with “In summary”) of my August 25th letter, the specification of the three Osseo patents demonstrates that tomography and densitometry are not equivalent terms. This is another basis of distinction with respect to *Honeywell*.

3. IT 1277976 Does Not Invalidate Any of the Nine Asserted Claims of the '301, '262 and '374 Patents

Your letter does not dispute the fact that the IT 1277976 reference does not teach or suggest the concept of creating, storing and comparing dental models. As the file history of the '374 patent demonstrates, Lindh also does not disclose this. Thus, an obviousness argument based upon the combination of the Italian reference with Lindh is without merit as neither supplies this missing aspect.

Further, we point out the following examples of additional claim limitations (beyond the limitations relating to the concept of creating, storing and comparing dental models in all three Osseo patents) that appear to be missing from the IT 1277976 reference:

'301 Patent: “a controller with a microprocessor”; “an output device connected to the microprocessor”; “a positioning motor connected to said microprocessor”; “repeating steps”; “adjusting said densitometry model”; “color coding”; “outputting said color-coded model”; and a positioning motor for 3 axes of movement.

'374 Patent: “a preexisting, commercially available standard model”; “comparing” current patient model with preexisting commercially available model; “said controller being adapted for creating, storing and comparing 3D digital tomographic models”; “positioning motor ... responsive to commands from said microprocessor”; and “single axis.”

In sum, the Italian reference now relied upon by Sirona is no better than the prior art already considered by the Examiner. Indeed, the reference appears to be less relevant than at least some of that prior art.

Conclusion

Sirona has not demonstrated a reasonable basis for challenging either the validity or infringement of the asserted patent claims that have been specifically brought to its attention. As a result, Sirona's continued infringement can only be viewed as deliberate and willful.

In addition, Sirona's modification of its prior equipment to adopt Osseo's inventions in the face of Osseo's patent is clear evidence of the “objective recklessness” required for willful infringement by *Seagate*¹ and to recover enhanced damages under the *Read*² factors. Sirona's deliberate enhancements based on Osseo's technology also helps establish that the entire value of the newer, infringing equipment is the proper basis for determining damages and easily justifies a royalty

¹ *In Re Seagate Technology*, 497 F.3d 1360 (2007).

² See discussion of *Read* factors in *i4i Ltd. Partnership v. Microsoft Corp.*, 598 F.3d 831, 859 (Fed. Cir. 2010) *cert. granted on other grounds*, 13 S.Ct. 647 (2010).

rate of at least 10% of that total market value. Sirona's deliberate infringement also provides a strong basis for trebling under *Read*.

As we have previously indicated, Osseo welcomes meaningful dialog and has provided a reasonable offer of license. On the other hand, your client's repeated statements that it "has no interest in taking a license to Osseo's patents," apparently regardless of the facts, including Sirona's continued addition of features clearly covered by Osseo patents, demonstrates a complete disregard of Osseo's intellectual property, as embodied in three separate, duly issued United States patents. The court in any future litigation will certainly be entitled to consider this unequivocal refusal to license when assessing and enhancing damages.

We look forward to a meaningful response.

Best regards.

Sincerely,

NIXON & VANDERHYE, P.C.

A handwritten signature in black ink, appearing to read "Nixon & Vanderhye" followed by a stylized flourish.

Robert A. Rowan

January 9, 2015

VIA E-MAIL

Robert A. Rowan, Esq.
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Arlington, VA 22203-1808

Re: Osseo Imaging's U.S. Patent Nos. 6,381,301, 6,944,262, and 8,498,374

Dear Mr. Rowan:

We have reviewed your November 24, 2014 letter. Osseo's infringement assertions remain without merit.

I. Sirona's Equipment Does Not Make or Use Densitometry Models

As detailed in our prior correspondence and set forth once again below, all claims of Osseo's patents require generating a densitometry model. Osseo's patents and the references incorporated therein make clear that "densitometry," as used in Osseo's patents, requires an absolute measure of bone density. *See, e.g., '374 patent, at col. 1, ll. 25-27 ("The present invention relates generally to dental and orthopedic diagnosis and treatment, and in particular to a densitometry modeling system and method.") (emphasis added); Re 36,162, at col. 9, ll. 44-48 ("[T]he diagnostically useful quantity of bone mineral density (BMC) in g/cm² requires an accurate preservation of area information.") (emphasis added).*

As explained in our October 3 letter, Sirona's equipment does not generate an absolute measure of bone density. Contrary to the assertion in your most recent missive, the exhibits to your August 25 letter do not demonstrate otherwise. Simply put, Osseo has not pointed to any proof that Sirona's equipment has been, or can be, used to measure bone density in an absolute unit, such as g/cm³.

In fact, Osseo itself previously admitted in its own August 25 letter that Exhibit 1 attached to that letter merely reflects relative grey levels. *See Ltr. from Rowan to Sandonato, Aug. 25, 2014, at 2 ("[A]ttached are photos of two density readings that Osseo obtained when using Sirona equipment. The numbers are grayscale values. Exhibit 1.") (emphasis added).*

Osseo attempts to dismiss Re 36,162 as irrelevant to claim scope because Re 36,162 is "a third party patent . . . that is identified only in the Background of the Invention of the Osseo patents."

But Osseo's patents do not merely "identif[y]" Re 36,162. Instead, Osseo's patents expressly incorporate by reference Re 36,162 for its disclosure regarding "*densitometry* procedures . . . used for measuring bone morphology density (BMD)." '374 patent, at col. 2, ll. 15-20 (emphasis added). As such, Re 36,162 informs the meaning of densitometry as if its disclosure was explicitly set forth in Osseo's patents. *Cook Biotech Inc. v. Acell, Inc.*, 460 F. 3d 1365, 1376 (Fed. Cir. 2006). And that disclosure defines densitometry in terms of an absolute measure of bone density. Re 36,162, col. 9, ll. 44-48.

The claims of Osseo's patents require an absolute measure of bone density, and for at least that reason, Sirona's equipment does not infringe any of those claims.

II. The Claims of the '374 Patent Are Limited to Densitometry Modeling

In our last letter, we detailed Osseo's incorrect reading of *Honeywell*, explaining in particular the error in Osseo's assertion that "there was no . . . claim differentiation" in the patent family at-issue in *Honeywell*.

Again, *Honeywell* is directly on point. Osseo's use of "densitometry" in its description of the "present invention" limits the claims of the '374 patent to tomographic *densitometry* models. *Honeywell Int'l, Inc. v. ITT Indus., Inc.*, 452 F.3d 1312, 1318 (Fed. Cir. 2006). Unable to meaningfully distinguish this case, Osseo now alleges that "all of the claims in the three patents at issue [in *Honeywell*] used the word 'fuel' - either 'fuel filter' or 'fuel injection system.'" Nov. 24 Ltr. at 2. That supposed distinction is not only irrelevant, but also provides no distinction at all. For example, all claims of Osseo's '374 and '301 patents use the terms "tomographic[] model[]." Just as "fuel injection system component" was limited to a "fuel filter" notwithstanding the absence of a "filter" limitation in the claims at-issue in *Honeywell*, so too "tomographic[] model[]" in the claims of Osseo's '374 patent is limited to a tomographic *densitometry* models.

Osseo's reliance on the Examiner's reasons for allowance likewise fails to distinguish *Honeywell*. In *Honeywell*, patentee's argument for a broad construction also relied on statements by the Examiner. In particular, the Examiner had stated during prosecution that "the fuel system component [claims] do[] not specifically require that the component be a fuel filter." *Id.* at 1317. The court emphasized that the Examiner "did not construe the claim term 'fuel system component,'" and the court therefore rejected patentee's attempt to use the Examiner's statement to contradict the specification's description of the "present invention" as a "fuel filter." *Id.* at 1318-19.

Further, Osseo's contention that the patent specification distinguishes between tomography and densitometry is without merit. Osseo conveniently ignores numerous instances throughout the specification and prosecution history in which the terms tomography/tomographic model are equated to or used interchangeably with densitometry/densitometric model. *See, e.g.*, '374 patent, at Abstract and col. 4, ll. 38-60 (referring to "tomographical densitometry" models and techniques); October 9, 2001 Amendment in '301 patent file history, at 4-5 ("The features that Applicant respectfully submits patentably distinguish Applicant's invention over the prior art

include the teaching of a dental and orthopedic *densitometry* modeling system Nowhere in the Arai patent does it disclose the concept of comparing a patient's prior *tomographical densitometry* model to a patient's present *tomographical densitometry* model" (emphasis added).

III. The Asserted Claims of the '301, '262 and '374 Patents Are Invalid

With respect to validity, Osseo ignores Sirona's arguments and repeats its conclusory assertions. For example, in its October 3 letter, Sirona explained:

Contrary to Osseo's assertion, Mozzo does disclose "system components and functions" such as "the controller/storage functions," "the input function to the microprocessor," and "the output device from microprocessor." *See* Mozzo at 5 and Fig. 1 ("a computer 10 for control and data processing."); *id.* at 10 ("the digitized images are stored in computer memory 10 and subsequently processed."); *id.* at 13 ("the display module allows you to present the results obtained by the reconstruction.").

Ltr. from Sandonato to Rowan, Oct. 3, 2014, at 2. Inexplicably, Osseo maintains that Mozzo does not disclose "a controller with a microprocessor." Nov. 24 Ltr. at 3. Not only is such hardware well-known and inherent in dental imaging equipment, but it is *expressly disclosed* in the above quotations from Mozzo.

Moreover, contrary to Osseo's assertion, Mozzo and Lindh disclose "creating, storing and comparing dental models." *See* Mozzo, at Abstract ("A method of detection, storage and processing of digitized images, which comprises the emission of X-rays by at least one X-ray source to rotate around a complex anatomy to be analyzed, obtaining digitized x-rays by means of a digital detector of X-rays. Scanned images are transferred to a buffer memory or on magnetic or optical [sic]. The stored data is subsequently processed to make the reconstruction of a three-dimensional matrix density of the complex anatomical [region] irradiated . . ."); Lindh, at 148 ("Differences in BMD [bone mineral density] between mandibles and different sections of the mandibles were investigated using analysis of variance with repeated measurements. . . . The measurement of BMD was performed twice in 20 CT images. The second measurement was made one week after the first and the entire procedure with window-setting and enlargement was repeated. The precision of single measurements was expressed as the standard deviation $SD = \sqrt{SQR[\sum d^2/2n]}$, where d is the difference between the measurements and n is the number of duplicative measurements.").

Regardless, in addition to being obvious in view of Mozzo and Lindh, the claims of Osseo's patents are anticipated by U.S. Patent No. 5,778,045. Like Mozzo and Lindh, the '045 patent discloses creating, storing and comparing dental models. *See* '045 patent, at Abstract ("Densitometric and geometric measurements taken from multiple projections may be combined to create three-dimensional densitometric and tomographic images."); *id.* at col. 24, l. 67 - col. 25, l. 18 ("Exemplary ROIs such as the . . . head . . . and other bony structures, can be analyzed for bone mineral mass, bone surface area, and bone density. . . . Results of the various ROI

Robert A. Rowan, Esq.
January 9, 2015
Page 4

analyses are stored with the image file.”); *id.* at col. 14, l. 67 - col. 15, l. 3 (“It is also desirable that the forearm and/or the wrist remain in one position during the scan, and that the positions be accurately reproducible for subsequent scans so that baseline comparisons can be made.”).

And the computer hardware claimed in Osseo’s patents is disclosed in the ’045 patent, for example, at col. 5, ll. 46-54; col. 9, ll. 11-19; col. 12, l. 65 - col. 13, l. 13; and col. 17, ll. 7-12.

Very truly yours,

A handwritten signature in blue ink that reads "Mike".

Michael P. Sandonato

Nixon & Vanderhye P.C.

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Re: Osseo Imaging, LLC v. Sirona Dental Systems
U.S. Patent Nos. 6,381,301 and 6,944,262 and 8,498,374
Our Reference: 5458-2

Dear Mr. Sandonato:

We have reviewed your letter of January 9, 2015 and we are disappointed that Sirona has decided to evade the substantive issues in this matter. As a result, it is our opinion that the parties are at an irreconcilable impasse. Nevertheless, we make the following comments to clarify the record.

1. Sirona's Equipment Makes And Uses Densitometry Models

First, there is nothing in the three Massie patents that requires "an absolute [i.e., numeric] measure of bone density." To the contrary, the teaching at col. 4, ll. 42-52 states: "For example, a color printer can be utilized to provide a color-coded graphical representation of the tomographical densitometry model. The color coding can correspond to densities, thus identifying potential problem areas where decalcification has occurred and resulted in lower density."

Second, Re. 36162 is cited and incorporated in col. 2, ll. 15-19 only with respect to the general statement that "In the medical field, densitometry procedures are used for measuring bone morphology density (BMD) by utilizing scanning X-ray beam techniques." None of the Massie patents state that this incorporation requires "an absolute measure of bone density." For this reason and others, your citation to *Cook* is inapplicable.

Third, your January 9th letter makes reference only to Exhibit 1 of my August 25, 2014 letter. Based upon that single Exhibit, your letter erroneously postulates that Osseo concedes that Sirona's equipment provides nothing more than gray scale

measurements. As you well know, my August 25th letter also attached Exhibits 2-7. In those Exhibits, Sirona and its customers repeatedly admit that Sirona's equipment actually provides bone density profiles and measurements. Curiously, however, your most recent letter ignores these Exhibits/admissions. In doing so, we must conclude that Sirona does not dispute any of the statements in Exhibits 2-7 – thereby proving that its equipment provides bone density profiles and measurements.

As a result, even under any reasonable claim interpretation, Sirona's current equipment infringes the asserted claims in the three Massie patents.

2. Sirona's "Tomographic Model" Argument Regarding The '374 Patent Is Wrong

After reading our exchange of letters, it is apparent that the parties simply do not agree on this point. Consequently, there is no need to belabor this issue because I previously pointed out Sirona's erroneous factual and legal arguments.

3. IT 1277976 Does Not Invalidate Any of the Nine Asserted Claims of the '301, '262 and '374 Patents

Your letter appears to concede that nothing in Mozzo and Lindh (either alone or in combination) teaches the inventive concept of creating, storing and comparing densitometry models in a computer. This concept underlies the USPTO's grant of the asserted patent claims. In that regard, we remind you that Lindh was considered by the USPTO during the prosecution of the third Massie patent (USP 3,498,374).

Further, at page 3, your letter "cherry picks" a single element from my list of the numerous elements recited in the asserted claims of the '301 patent. In doing so, you improperly evade the requirement to prove that all claim elements must be present in Mozzo, or in Mozzo in combination with other relevant art that does not teach away from the Osseo patents and shows the elements missing in Mozzo, in order to present a proper invalidity argument.

Finally, your client's belated identification of an allegedly new piece of prior art (USP 5,778,045) is telling as to the weakness of Sirona's invalidity argument. More specifically and merely as an initial comment, the '045 patent does not disclose the inventive concept of creating, storing and comparing dental models in a computer, which was the stated basis for the USPTO's grant of the asserted Massie patent claims as recited in the three Notices of Allowability. In other words, the '045 patent is defective as prior art for the same reason we previously identified with respect to the Mozzo and Lindh patents cited by your client.

Although Osseo can readily identify other missing claim elements with respect to the asserted patent claims, the tone and content of Sirona's letters makes it clear that Sirona will not pay attention to the deficiencies of its alleged prior art.

Conclusion

Sirona's continuous reliance on erroneous arguments (both factual and legal) as well as its prior statement that it "has no interest in taking a license to Osseo's patents" demonstrates its deliberate and willful intention to continue the infringement of the asserted Massie claims.

Because Sirona's position is unfettered by fact, law and reason, there appears to be no logical basis for Osseo to make any further efforts to establish a meaningful negotiation dialog under a willing licensor/willing licensee situation. Simply stated, the record is clear that Sirona will never voluntarily agree to make any payment for a license.

In short, Osseo's only option now is to pursue relief in a forum where Sirona is subject to the involuntary payment of substantial royalties, enhanced damages and reasonable attorneys' fees.

Best regards.

Sincerely,

NIXON & VANDERHYE P.C.

By:



Robert A. Rowan

RAR:cg



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May 30, 2017

VIA FEDERAL EXPRESS

Michael P. Sandonato, Esq.
Fitzpatrick, Cella, Harper & Scinto
1290 Avenue of the Americas
Suite 60W
New York, NY 10104

Re: Infringement of Osseo Imaging, LLC's Patent Rights

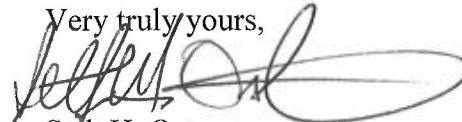
Dear Mr. Sandonato,

We represent Osseo Imaging, LLC ("Osseo"). Osseo is the owner of a family of patents relating to dental and orthopedic imaging systems, including U.S. Patent Nos. 8,498,374, 6,944,262, and 6,381,301 (the "Osseo Patents"). The Osseo Patents are directed towards, among other things, systems for generating tomographic models of dental structures.

Osseo has concluded that several products made, used, and/or offered for sale by Dentsply Sirona Inc. ("DSI"), namely the GALILEOS Comfort Plus, ORTHOPHOS SL 3D, and ORTHOPHO XG 3D systems with GALAXIS, SIDEXIS XG, and/or SIDEXIS 4 imaging software (the "DSI Systems"), infringe at least U.S. Patent No. 8,498,374 (the '374 patent). To facilitate your review, we enclose a preliminary infringement chart illustrating how the DSI Systems infringe sample claims from the '374 Patent.

We understand that Osseo's previous counsel communicated with you a few years ago on behalf of DSI's predecessor Sirona Dental Systems regarding the licensing of U.S. Patent Nos. 6,944,262 and 6,381,301. We write to you on the assumption you still represent these companies, but please let us know if that is not the case. Moreover, since this letter and the accompanying exhibits relate to events occurring after those communications, including the issuance of the '374 Patent and the introduction of the SIDEXIS 4 imaging software, we do not revisit the issues raised in the prior correspondence. At the same time Osseo does not intend to waive any such issues or assent to any positions relating to the '262 and '301 Patents.

Osseo is committed to enforcing its rights in the Osseo Patents and has determined that DSI requires a license to at least the '374 Patent. If your client is interested in discussing the terms of such a license, please contact us before **June 30, 2017**. If you do not contact us by then or are not otherwise interested in discussing terms of a license, we will advise our client to proceed accordingly.

Very truly yours,

Seth H. Ostrow

cc: Osseo Imaging, LLC

Fitzpatrick

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June 28, 2017

VIA E-MAIL

Seth H. Ostrow, Esq.
Meister Seelig & Fein LLP
125 Park Avenue, 7th Floor
New York, NY 10017

Re: Alleged Infringement of Osseo Imaging, LLC's Patent Rights

Dear Mr. Ostrow:

We have reviewed your May 30, 2017 letter in which Osseo improperly attempts to re-raise issues addressed long ago. Osseo first wrongly accused Sirona of infringing Osseo's patent rights *eight years ago*, and the last correspondence between the parties was several years ago. *See Qualcomm Inc. v. Broadcom Corp.*, 548 F.3d 1004, 1019-20 (Fed. Cir. 2008) (holding patents unenforceable due to waiver, where patentee's "conduct was so inconsistent with an intent to enforce its rights as to induce a reasonable belief that such right has been relinquished."); *see also Aspex Eyewear Inc. v. Clariti Eyewear, Inc.*, 605 F.3d 1305, 1310-14 (Fed. Cir. 2010).

Nothing has changed to justify Osseo's attempt to revive its claims, which are without merit for at least the reasons we already explained. We further note that your letter incorrectly asserts that the '374 patent issued "after those communications." In fact, Sirona and Osseo corresponded regarding the '374 patent from June 2014 to February 2015, and Sirona sent Osseo three letters explaining that the '374 patent is invalid and not infringed by the Sirona products identified in your May 30 letter.

Your May 30 letter also asserts that the introduction of SIDEXIS 4 imaging software occurred after Osseo's prior correspondence with Sirona. To the contrary, Sirona introduced SIDEXIS 4 more than two years ago—in February 2015—the same month Osseo last wrote to Sirona. In any event, your May 30 letter does not articulate how SIDEXIS 4 is purported to differ from previous versions of SIDEXIS, or how any such differences are believed material to Osseo's infringement claims, which were first raised and addressed eight years ago.

Once again, as detailed in our prior correspondence, Dentsply Sirona is not infringing and has no interest in taking a license to Osseo's patents.

Seth H. Ostrow, Esq.
June 28, 2017
Page 2

Very truly yours,

Michael P. Sandonato /s/

Michael P. Sandonato

January 12, 2021

VIA FEDERAL EXPRESS

Mr. Donald M. Casey Jr.
CEO
Dentsply Sirona Inc.
13320-B, Ballantyne Corporate Pl
Charlotte, NC 28277

Re: Infringement of Osseo Imaging, LLC's Patent Rights

Dear Mr. Casey,

We represent Osseo Imaging, LLC's ("Osseo"). Osseo owns a family of patents relating to dental and orthopedic imaging systems, including U.S. Patent Nos. 8,498,374, 6,944,262, and 6,381,301 (the "Osseo Patents"). The Osseo Patents are directed towards, among other things, systems for generating 3D tomographic models of dental structures and storing and comparing such models.

Osseo has concluded that several products made, used, and sold by Dentsply Sirona, namely the Galileos Comfort Plus, Orthophos S 3D, Orthophos SL 3D, Orthophos XG 3D, and Axeos systems (hereby referred to as "Dentsply Sirona Systems"), have infringed the Osseo Patents. To facilitate your review, we enclose copies of the Osseo Patents as well as a preliminary infringement chart illustrating how the Dentsply Sirona Systems have infringed sample claims from each of the Osseo Patents.

Osseo is committed to obtaining fair value for the use of the inventions covered by the Osseo Patents. As you may be aware, Osseo has been pursuing litigation regarding the infringement of the Osseo Patents by dental imaging systems similar to the Dentsply Sirona Systems including those sold by Planmeca USA, Inc. and KaVo Dental Corporation. As of now KaVo and at least one other company have settled and obtained the rights to sell its products, and the case against Planmeca is scheduled to go to trial in July, 2021.

Although Osseo has resorted to litigation to enforce its rights, it would prefer to avoid doing so further if possible. To that end Osseo is offering to negotiate for a full release of its claims against Dentsply Sirona.

If you are interested in discussing the terms for such a full release, contact us before **February 8, 2021**. If you do not contact us by then or are not otherwise interested in discussing terms of a license, we will advise our client to proceed accordingly.

Very truly yours,

A handwritten signature in black ink, appearing to read "Seth H. Ostrow", with a stylized flourish at the end.

Seth H. Ostrow

cc: Osseo Imaging, LLC

February 8, 2021

Michael P. Sandonato

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MSandonato@Venable.com

By Electronic Mail

Seth H. Ostrow, Esq.
Meister Seelig & Fein LLP
125 Park Avenue, 7th Floor
New York, NY 10017
sho@msf-law.com

Re: Alleged Infringement of Osseo Imaging, LLC's Patent Rights

Dear Mr. Ostrow:

We write concerning your January 12, 2021 letter to Dentsply Sirona. As you know from our prior correspondence, we represent Dentsply Sirona in connection with Osseo's patent infringement allegations, and therefore were surprised to see that you sent your letter directly to Dentsply Sirona's CEO, circumventing its outside counsel.

In any case, Osseo's latest letter rehashes the same baseless allegations that we have previously addressed.

First, any patent infringement claim by Osseo against Dentsply Sirona would be barred by the doctrines of waiver and equitable estoppel. Osseo first accused Dentsply Sirona's predecessor of patent infringement ***more than eleven years ago***, and last accused Dentsply Sirona more than three years ago. This is the ***nineteenth letter*** in that series. Osseo waived its right to assert its patents against Dentsply Sirona by sending threatening letters for more than a decade without ever filing a lawsuit, notwithstanding Dentsply Sirona's and its predecessor's steadfast refusal to license Osseo's patents. *See Qualcomm Inc. v. Broadcom Corp.*, 548 F.3d 1004, 1019-20 (Fed. Cir. 2008) (holding patents unenforceable due to waiver, where patentee's "conduct was so inconsistent with an intent to enforce its rights as to induce a reasonable belief that such right has been relinquished."). In addition, Osseo's actions (and lack thereof) have manifested an intent not to enforce the asserted patents against Dentsply Sirona. Dentsply Sirona has relied on Osseo's conduct and would be prejudiced if Osseo were permitted to proceed with its charge of infringement. Equitable estoppel therefore bars Osseo's claims. *See Aspex Eyewear Inc. v. Clariti Eyewear, Inc.*, 605 F.3d 1305, 1310-14 (Fed. Cir. 2010).

Second, Dentsply Sirona is not infringing Osseo's patents for the reasons set forth in our prior correspondence. Dentsply Sirona's non-infringement arguments also have been reinforced

Seth H. Ostrow, Esq.
February 8, 2021
Page 2

by developments in Osseo's litigation against Planmeca. For example, Osseo attempted to broadly construe its claims to encompass Dentsply Sirona's products, asserting in its November 24, 2014 letter that none of those claims require a "quantitative measure . . . of bone density," but instead "merely require," *e.g.*, "densitometry models." Chief Judge Stark, however, expressly rejected that argument in the Planmeca litigation. *See, e.g.*, October 30, 2018 *Markman* decision at 6-8 (construing "densitometry" as "quantitatively calculated bone density").¹

Third, the claims of Osseo's patents are invalid in view of the prior art raised in our previous correspondence. Moreover, Dentsply Sirona's invalidity arguments have been bolstered by developments in the Planmeca and Kavo proceedings. For example, while Osseo notes its settlement with Kavo, Osseo neglects to mention the events that led to that settlement. As you know, Kavo filed petitions requesting *inter partes* review (IPR) of claims of each of Osseo's three asserted patents. And the Patent Trial and Appeal Board (PTAB) instituted all three IPRs, finding that Kavo had shown a reasonably likelihood of prevailing against the challenged claims. Although Osseo chose to settle with Kavo and thereby terminate those IPRs before the PTAB could issue final written decisions, Kavo's public petitions and the PTAB's decisions on institution provide a roadmap for invalidating the claims of Osseo's patents.

Once again, as detailed in our prior correspondence, Dentsply Sirona is not infringing and has no interest in taking a license to Osseo's patents.

Sincerely,

/s/ Michael P. Sandonato
Michael P. Sandonato

¹ Relative measurements, such as those recorded in Hounsfield Units, do not satisfy this "densitometry" limitation for at least the reasons explained in our January 9, 2015 letter.