2019-1149

# United States Court of Appeals for the Federal Circuit

CARDIONET, LLC and BRAEMAR MANUFACTURING, LLC,

*Plaintiffs-Appellants*,

v.

INFOBIONIC, INC.,

*Defendant-Appellee.*

Appeal from the United States District Court for the District of Massachusetts, No. 1:17-cv-10445-IT, Judge Indira Talwani.

## BRIEF OF APPELLEE

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March 13, 2019

Claim 1 of U.S. Patent No. 7,941,207 (Appx52) provides:

> **1.** A device, comprising:
>
> a beat detector to identify a beat-to-beat timing of cardiac activity;
>
> a ventricular beat detector to identify ventricular beats in the cardiac activity;
>
> variability determination logic to determine a variability in the beat-to-beat timing of a collection of beats;
>
> relevance determination logic to identify a relevance of the variability in the beat-to-beat timing to at least one of atrial fibrillation and atrial flutter; and
>
> an event generator to generate an event when the variability in the beat-to-beat timing is identified as relevant to the at least one of atrial fibrillation and atrial flutter in light of the variability in the beat-to-beat timing caused by ventricular beats identified by the ventricular beat detector.

# CERTIFICATE OF INTEREST

Counsel for Appellee certifies the following:

1. The full name of every party or amicus curiae represented by me is:

InfoBionic, Inc.

2. The name of the real party in interest (if the party named in the caption is not the real party in interest) represented by me is:

N/A.

3. All parent corporations and any publicly held companies that own 10 percent or more of the stock of the party or amicus curiae represented by me are:

None.

4. The names of all law firms and the partners or associates that appeared for the party or amicus now represented by me in the trial court or agency or are expected to appear in this court (and who have not or will not enter an appearance in this case) are:

**Latham & Watkins LLP:** Kristopher R. Davis (no longer with firm).

5. The title and number of any case known to counsel to be pending in this or any other court or agency that will directly affect or be directly affected by this court's decision in the pending appeal. *See* Fed. Cir. R. 47. 4(a)(5) and 47.5(b).

*CardioNet, Inc. v. The ScottCare Corp.*, No. 2:12-cv-02516-PBT (E.D. Pa.)

March 13, 2019

Respectfully submitted,

/s/ *Maximilian A. Grant*
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**STATUTE**

## STATEMENT OF RELATED CASES

There is no other appeal in or from the same civil action or proceeding in the lower court that was previously before this or any other appellate court. The patent at issue in this appeal is also asserted in *CardioNet, Inc. v. The ScottCare Corp.*, No. 2:12-cv-02516-PBT (E.D. Pa.).

## STATEMENT OF THE ISSUE

Whether the district court properly held the asserted claims of U.S. Patent No. 7,941,207 (the "'207 patent") are ineligible under 35 U.S.C. § 101 because those claims are directed to the abstract idea of identifying commonplace heart conditions in the same way doctors have long done, using conventional hardware claimed in purely functional terms.

## INTRODUCTION

The district court correctly found that the asserted claims of the '207 patent are ineligible under the two-step framework of *Alice Corp. Pty. Ltd. v. CLS Bank International*, 573 U.S. 208 (2014).

First, the claims are drawn to automating basic diagnostic processes that doctors have long used—collecting, analyzing, and reporting medical data. Specifically, the '207 patent claims are directed to the abstract idea of identifying commonplace heart conditions by looking at the variability in time between heartbeats. Appellants CardioNet, LLC and Braemar Manufacturing, LLC (collectively, "CardioNet") did not invent, and do not claim to have invented, the process of diagnosing those conditions. And the claims only purport to automate those processes using generic components and off-the-shelf technology. This Court has repeatedly held similar computer claims for collecting, analyzing, and reporting data—particularly where the basic steps can be done by humans—

ineligible for patent protection. *See, e.g.*, *University of Fla. Research Found., Inc. v. Gen. Elec. Co.*, --- F.3d ----, No. 2018-1284, 2019 WL 921859, at *3 (Fed. Cir. Feb. 26, 2019); *FairWarning IP, LLC v. Iatric Sys., Inc.*, 839 F.3d 1089, 1092-93 (Fed. Cir. 2016); *Electric Power Grp., LLC v. Alstom S.A.*, 830 F.3d 1350, 1353-54 (Fed. Cir. 2016).

Second, the '207 patent claims add nothing inventive to the underlying abstract idea. The claimed components require only conventional technology and are described in purely functional terms, without any specific way of implementing them to accomplish the claimed result.

The features that CardioNet cites do not save its claims. First, CardioNet argues that the claims' recitation of generic cardiac monitoring components and the fact that the claims relate to the field of cardiac monitoring make the claims eligible. But it is settled law that such limitations are insufficient under § 101. *See*, *e.g.*, *Alice*, 573 U.S. at 225-26. Second, CardioNet relies on purported advantages (such as greater accuracy and real time data) drawn from the specification. But those, by CardioNet's own urging, are not part of the claims—and are thus irrelevant. *See*, *e.g.*, *Intellectual Ventures I LLC v. Symantec Corp.*, 838 F.3d 1307, 1322 (Fed. Cir. 2016). And, in any event, this Court has repeatedly found claims ineligible despite such benefits. *See, e.g.*, *Electric Power*, 830 F.3d at 1351. Third, CardioNet relies on two features in certain dependent claims—

using a "nonlinear" function or "negatively" weighting the presence of certain premature beats. But those, at most, recite categories of mathematical functions—which are themselves abstract and thus insufficient to confer eligibility. *See, e.g.*, *Parker v. Flook*, 437 U.S. 584, 588, 594 (1978); *SAP Am., Inc. v. InvestPic, LLC*, 898 F.3d 1161, 1166-67 (Fed. Cir. 2018).

CardioNet makes little effort to compare its claims to the specific improvements in computer functionality that this Court found eligible in a few cases, such as *Enfish, LLC v. Microsoft Corp.*, 822 F.3d 1327, 1336-37 (Fed. Cir. 2016), and *BASCOM Global Internet Services, Inc. v. AT&T Mobility LLC*, 827 F.3d 1341, 1350-51 (Fed. Cir. 2016). CardioNet's claims are distinct from the claims at issue in those cases because CardioNet's claims are firmly rooted in longstanding human (medical) processes. Tellingly, CardioNet relies most heavily on *Arrhythmia Research Technology, Inc. v. Corazonix Corp.*, 958 F.2d 1053 (Fed. Cir. 1992). Blue Br. 49-52, 61. That decision, coming two decades before the Supreme Court's modern § 101 jurisprudence, culminating in *Alice*, is no longer good law: the § 101 analysis of "*Arrhythmia* … should no longer be relied on." *In re Bilski*, 545 F.3d 943, 959 n.17 (Fed. Cir. 2008), *judgment aff'd sub nom. Bilski v. Kappos*, 561 U.S. 593 (2010).

Finally, CardioNet contends that eligibility was not ripe for adjudication on the pleadings. CardioNet is incorrect. Where, as here, there are no relevant factual

disputes, ineligibility is "frequently" resolved at the pleading stage. *SAP*, 898 F.3d at 1166. CardioNet's amended complaint does not even *mention* § 101, let alone include factual allegations relevant to eligibility—even though CardioNet amended its complaint *after* seeing InfoBionic's initial motion to dismiss under § 101. And CardioNet does not (and cannot) assert that further amendment would save its claims, even after this Court's decision in *Aatrix Software, Inc. v. Green Shades Software, Inc.*, 882 F.3d 1121 (Fed. Cir. 2018). Nor did CardioNet identify any relevant factual disputes in its § 101 briefing or oral argument. The only assertedly "new techniques" in the claims (Blue Br. 44) stem from the abstract diagnostic processes and mathematic calculations themselves. Thus, even if those were "'[g]roundbreaking, innovative, or even brilliant'" (and they are not), "that is not enough for eligibility." *SAP*, 898 F.3d at 1163 (citation omitted). Moreover, no claim construction disputes preclude ineligibility on the pleadings. To resolve this issue on the pleadings, the district court expressly adopted CardioNet's proposed construction on the only claim term that CardioNet sought to construe, and CardioNet expressly declined the district court's invitation to offer additional constructions.

Under the established *Alice* framework, the district court correctly found the claims ineligible. This Court should affirm.

## STATEMENT OF THE CASE

### A. The '207 Patent

The '207 patent, titled "Cardiac Monitoring," describes "[s]ystems and techniques for monitoring cardiac activity." Appx38 (Abstract). The patent's goal is to identify certain conditions—"AFib" or "AFlut" (collectively, "AF")—that involve "loss of synchrony between the atria and the ventricles" leading to "irregular" heart beating, *i.e.*, variability in beat-to-beat timing. Appx47 (1:23-39). The disclosed device identifies AFib and AFlut through three basic steps: (1) "determining a beat-to-beat variability in cardiac electrical activity," (2) "determining a relevance of the variability to one of atrial fibrillation and atrial flutter," and (3) "identifying" those cardiac events. Appx47 (1:49-56).

The specification fails to describe any improved computer hardware or software for performing those steps, but instead describes performing those steps in purely functional terms using conventional, pre-existing, off-the-shelf components. For example, the relevant data—the patient's ventricular beats and the beat-to-beat timing (*e.g.*, time between successive R-waves)—is obtained using a conventional off-the-shelf QRS detector and the Mortara VERITAS Analysis Algorithm or the ELI 250TM Electrocardiograph. Appx49 (5:15-20), Appx51 (9:22-32). And the subsequent determinations based on this data are made using functional, black box components such as "decision logic" and an "event

generator." *See*, *e.g.*, Appx48-49 (4:67-5:1). Indeed, the purported invention can be implemented using "*any* combination" of "general purpose" components, "*any* computer program product[s] … to provide machine instructions and/or data to a programmable processor," "*any* form of sensory feedback," and "*any* form or medium of digital data communication." Appx52 (11:5-62) (emphasis added).

The asserted claims are equally non-specific. They recite only the same basic steps (determining variability, determining relevance, and identifying events), and purely functional and generic components for performing them. For example, in claim 1 "*variability determination logic*" determines variability in beat-to-beat timing, "*relevance determination logic*" determines the relevance to AFib and AFlut, and an "*event generator*" generates "an event when the variability in the beat-to-beat timing is identified as relevant" to either condition:

> **1.** A device, comprising:
>
> a beat detector to identify a beat-to-beat timing of cardiac activity;
>
> a ventricular beat detector to identify ventricular beats in the cardiac activity;
>
> *variability determination logic* to determine a variability in the beat-to-beat timing of a collection of beats;
>
> *relevance determination logic* to identify a relevance of the variability in the beat-to-beat timing to at least one of atrial fibrillation and atrial flutter; and
>
> *an event generator* to generate an event when the variability in the beat-to-beat timing is identified as relevant

> to the at least one of atrial fibrillation and atrial flutter in light of the variability in the beat-to-beat timing caused by ventricular beats identified by the ventricular beat detector.

Appx52 (emphasis added). The patent does not claim a particular way of determining variability in beat-to-beat timing or its relevance to AFib or AFlut, or claim any specific "relevance" criteria for generating an event.

The other asserted claims (dependent claims 2, 3, 7, 10-12, and 22) add only inconsequential details: "'weighting the [premature ventricular beat] as being negatively indicative" of AF (claims 2 and 22), "using a non-linear function of a beat-to-beat interval" (claims 10 and 22), using a QRS detector and sensors to collect the cardiac data (claims 11 and 12), determining variability based on three successive QRS complexes (claim 3), transmitting data to a remote device (claim 7), and couching the claim as "machine-readable media" rather than a device (claim 22). Appx52-53.

### B. District Court Proceedings

On March 16, 2017, CardioNet sued InfoBionic alleging infringement of the '207 patent. Appx28-36. On April 27, 2017, InfoBionic moved to dismiss for failure to adequately plead infringement and for lack of patent-eligible subject matter under § 101. Appx23 (D.I. 15). On May 18, 2017, CardioNet filed an amended complaint, mooting InfoBionic's motion to dismiss the original complaint under § 101. Appx236-244; Appx373. The amended complaint does

not mention § 101 or allege that the '207 patent claims provide unconventional technology or any innovative technological advance. *See* Appx236-244. CardioNet never sought to further amend its complaint.

On June 1, 2017, InfoBionic moved a second time to dismiss for lack of patent eligible subject matter. Appx380. In opposing, CardioNet did not contend that claim construction disputes prevented resolution of eligibility (CardioNet proposed to construe only one term, "ventricular beats," *see* Appx440-441 & n.2), and did not point to any relevant factual allegations in its amended complaint. *See* Appx432-455.

On April 24, 2018, the district court held oral argument on the motion. Appx508-539. The court asked CardioNet at least eight times to provide any other relevant constructions—including of the "relevance determination logic" and "variability determination logic" terms—and stated that it would accept them in determining eligibility. Appx528-534.[1] CardioNet declined to do so and instead emphasized that the claim elements are not "limited to the specific methodologies that are disclosed in the specification." Appx533 (26:15-17); *see also*, *e.g.*, Appx534 (27:9-10) ("[W]e're not limited to just the disclosed algorithms."). The

[1] *See, e.g.*, Appx530 (23:13-23) ("[A]t this juncture I would take whatever you say it means according to your claim construction. So I guess the question is: What do you say it means? … [Y]ou can't come here and say to me, Accept my reading of relevance determination, but I'm not going to tell you what it is.").

court also accepted as true CardioNet's factual allegations but observed that "this [§ 101] issue just isn't addressed in the complaint." Appx513 (6:5). The court asked CardioNet at least five times to identify any relevant factual disputes or identify how discovery would affect eligibility—but CardioNet was unable to do so, apart from repeating its conclusory contention that the claims "are not well-known, routine, and conventional concepts." Appx518 (11:5-6); *see*, *e.g.*, Appx512 (5:11-14), Appx513-514 (6:21-7:2), Appx516-517 (9:25-10:3, 10:21-24).

On October 16, 2018, the district court granted the motion, finding the asserted claims ineligible under § 101. The court held that the claims were, at root, directed to "the abstract idea of identifying AF by looking at the variability in time between heartbeats and taking into account ventricular beats" and failed to add an inventive concept. Appx14; *see also* Appx8-17. The court thoroughly considered (and carefully rejected) CardioNet's arguments that the claim elements—beat detectors, determination logic, and event generator—"solve [a] technical problem." Appx9. The court determined that the claims "do not recite any specific implementation or improvement in computerized medical technology." Appx9. The court found that "the 'determination logic' is undefined and unspecified," the claims "'provide no meaningful details on *how* to implement it,'" and, at most, the claims "'add generic calculations that humans can perform.'" Appx15-16 (citation omitted).

The court also found that "there [we]re no disputes of fact as the court accept[ed] [CardioNet's] non-conclusory factual assertions in the complaint and the patent as true." Appx17. And the court adopted CardioNet's construction of "'ventricular beats' to mean 'premature ventricular beats that are irregular beats that interrupt the normal heart rhythm'"—the sole construction that CardioNet provided. Appx13 (quoting Appx441 n.2). The court concluded that, "[o]n the facts as alleged, and the patent terms as construed by [CardioNet], [the] asserted claims are not directed to any improvement in the computer technology itself." Appx17.

CardioNet appeals.[2]

## SUMMARY OF THE ARGUMENT

The asserted claims of the '207 patent are ineligible under the familiar two-step *Alice* framework, as the district court correctly held.

At step one, the claims are directed to the abstract idea of identifying certain commonplace heart conditions—AFib and AFlut—by looking at the variability in time between heartbeats and taking into account ventricular beats. The claims recite the basic steps that any doctor could (and would) perform to make such diagnoses—collecting and analyzing a patient's heartbeat data. The claims employ

[2] CardioNet's Statement of the Case is replete with irrelevant unsupported rhetoric. *See, e.g.*, Blue Br. 4-5, 7. InfoBionic focuses on the patent eligibility issue before the Court.

components to perform those basic steps that the specification itself acknowledges are well-known, purely conventional and/or functional. Far from providing an improvement in computer technology itself, the claims use computers as mere tools to automate basic human steps—just as in cases such as *University of Florida Research Foundation*, 2019 WL 921859, at *3, *FairWarning*, 839 F.3d at 1092-93 (Fed. Cir. 2016), *Electric Power*, 830 F.3d at 1353-54, and others.

CardioNet's contrary arguments at step one are unavailing. CardioNet relies on the claims' inclusion of (i) purportedly "specific" components, (ii) features found (if at all) only in the specification, and (iii) mathematical calculations. But this Court has repeatedly held that none of those make the claims non-abstract or patent-eligible. On the law, CardioNet relies on a decision from two decades before *Alice* that this Court has said "should no longer be relied on." *In re Bilski*, 545 F.3d at 959 n.17.

At step two, the claims add nothing inventive to the abstract idea. CardioNet principally argues that the inventive concept lies in the combination of elements. *See* Blue Br. 56; Appx524 (17:17-20). But the claims require only conventional, functional components and do not specify *how* to achieve the desired diagnostic results. The claims provide no inventive details on *how* to determine the relevance of the beat variability and premature ventricular beats. And the asserted innovation—the device's purported ability to identify AFib and AFlut conditions

based on heartbeat variability and premature ventricular beats and (certain claims') use of mathematical calculations—are themselves the abstract concepts. Those abstract concepts cannot supply the inventive concept to render the claims eligible.

CardioNet also argues that the district court should not have resolved eligibility on the pleadings. However, CardioNet identifies no relevant factual disputes or claim construction disputes in its opening brief. Nor did CardioNet identify any relevant disputes before the district court, despite the district court's repeated efforts to elicit them from CardioNet. Instead, CardioNet expressly refused to provide any constructions relevant to eligibility and insisted that the claims included "no limitation on the logic," no "specific methodologies," and no "disclosed algorithms" from the specification. Appx528 (21:23-24), Appx533 (26:15-17), Appx534 (27:9-10). Applying the controlling law to this record, the district court viewed the facts and constructions in CardioNet's favor and properly found the asserted claims ineligible under § 101.

The district court's decision should be affirmed.

## STANDARD OF REVIEW

This Court reviews *de novo* the district court's grant of the motion to dismiss under Federal Rule of Civil Procedure 12(b)(6) and First Circuit law. *Athena Diagnostics, Inc. v. Mayo Collaborative Servs., LLC*, 915 F.3d 743, 749 (Fed. Cir. 2019). The Court accepts well-pleaded factual allegations and draws reasonable

inferences in favor of the non-movant, but "disregard[s]" legal conclusions and "conclusory" factual allegations. *Ocasio-Hernández v. Fortuño-Burset*, 640 F.3d 1, 12 (1st Cir. 2011). Patent eligibility under § 101 is a question of law that may have underlying issues of fact; this Court reviews the district court's conclusion on patent eligibility *de novo*. *Interval Licensing LLC v. AOL, Inc.*, 896 F.3d 1335, 1342 (Fed. Cir. 2018).

## ARGUMENT

### I. THE DISTRICT COURT PROPERLY FOUND THAT THE ASSERTED CLAIMS ARE NOT PATENT ELIGIBLE UNDER § 101

Section 101 of the Patent Act provides that "[w]hoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title." 35 U.S.C. § 101. Section 101 "contains an important implicit exception" for abstract ideas. *Alice Corp. Pty. Ltd. v. CLS Bank Int'l*, 573 U.S. 208, 216 (2014) (citation omitted). The Supreme Court's two-step *Alice* framework governs whether patent claims pass § 101's eligibility threshold. *Id*. at 218-26.

At step one, the Court determines whether the asserted claims are, at root, directed to an abstract idea. *Id.* at 218. That is, the Court must determine whether the claims' "focus"—their "character as a whole" or "essential, most important aspect"—is an abstract idea. *See Intellectual Ventures I LLC v. Erie Indemnity*

*Co.*, 850 F.3d 1315, 1325 (Fed. Cir. 2017) ("*Erie*"); *Electric Power Grp., LLC v. Alstom S.A.*, 830 F.3d 1350, 1353 (Fed. Cir. 2016); *Internet Patents Corp. v. Active Network, Inc.*, 790 F.3d 1343, 1348 (Fed. Cir. 2015) (citations and internal quotation marks omitted). "[A]n abstract idea does not become nonabstract by limiting the invention to a particular field of use [such as the medical field] or technological environment [such as a computer system]." *Erie*, 850 F.3d at 1330 (citation omitted); *see also*, *e.g.*, *Parker v. Flook*, 437 U.S. 584, 586-88, 594 (1978) (ineligible claims for updating alarm limits using equation in petrochemical field); *SAP Am., Inc. v. InvestPic, LLC*, 898 F.3d 1161, 1165-68 & n.2 (Fed. Cir. 2018) (ineligible claims for using specific computerized equations in financial field).

In making this inquiry, courts often consider whether the claims focus on a "'specific implementation of a solution to a problem in the software arts'"—"'a specific means or method' for improving technology"—or instead on "an abstract end-result" or "'generalized steps to be performed … using conventional computer activity.'" *RecogniCorp, LLC v. Nintendo Co.*, 855 F.3d 1322, 1326 (Fed. Cir. 2017) (quoting *Enfish, LLC v. Microsoft Corp.*, 822 F.3d 1327, 1338-39 (Fed. Cir. 2016); *McRO, Inc. v. Bandai Namco Games Am. Inc.*, 837 F.3d 1299, 1314 (Fed. Cir. 2016)), *cert. denied*, 138 S. Ct. 672 (2018). To determine what constitutes an "abstract idea," the Supreme Court and this Court "compare claims at issue to

those claims already found to be directed to an abstract idea in previous cases." *Enfish*, 822 F.3d at 1334.

At step two, the Court determines whether the other claim elements, individually or collectively, add "significantly more" to the abstract idea—something "inventive"—to render it patent eligible. *Alice*, 573 U.S. at 221-22 (citations omitted). It is not enough to implement an abstract idea with "well-understood," "routine," or "conventional" activities or computer technology. *Id*. at 225 (citation omitted). Nor can patent claims simply recite "generic functional language to achieve [the] purported solutions" without claiming "'*how* the desired result is achieved.'" *Two-Way Media Ltd. v. Comcast Cable Commc'ns, LLC*, 874 F.3d 1329, 1339 (Fed. Cir. 2017) (quoting *Electric Power*, 830 F.3d at 1355), *cert. denied*, 139 S. Ct. 378 (2018). Moreover, "[t]o save a patent at step two, an inventive concept must be evident in the claims." *RecogniCorp*, 855 F.3d at 1327; *see also Berkheimer v. HP, Inc.*, 881 F.3d 1360, 1369 (Fed. Cir. 2018) (must be "captured in the claims"). These principles apply whether the claims are couched as methods, devices, or otherwise, *Alice*, 573 U.S. at 226-27, because courts must "look to the underlying invention" for § 101 purposes, *CyberSource Corp. v. Retail Decisions, Inc.*, 654 F.3d 1366, 1374 (Fed. Cir. 2011).

Patent-ineligibility under § 101 "may be, and frequently has been, resolved on a Rule 12(b)(6) or (c) motion" as a matter of law where there are no relevant

factual disputes. *SAP*, 898 F.3d at 1166; *see also, e.g.*, *University of Fla. Research Found., Inc. v. Gen. Elec. Co.*, --- F.3d ----, No. 2018-1284, 2019 WL 921859, at *3 (Fed. Cir. Feb. 26, 2019); *Interval Licensing LLC v. AOL, Inc.*, 896 F.3d 1335, 1341-42 (Fed. Cir. 2018); *RecogniCorp*, 855 F.3d at 1328. Although "there can be subsidiary fact questions," "the ultimate determination of eligibility under § 101 is a question of law." *Aatrix Software, Inc. v. Green Shades Software, Inc.*, 882 F.3d 1121, 1128 (Fed. Cir. 2018).

Here, the district court correctly held that CardioNet's claims are invalid under § 101 because they are directed to an abstract idea—commonplace mental steps and mathematical calculations—and add nothing inventive. Moreover, the district court correctly resolved eligibility at the pleading stage "[o]n the facts as alleged, and … as construed by [CardioNet]." Appx17.

### A. Claim 1 Is Directed To An Abstract Idea

#### 1. Claim 1 Recites An Automated Process That Tracks Human Diagnostic Methods

At *Alice* step 1, the '207 patent claims are directed to the abstract idea of identifying long known and commonplace heart conditions—AFib or AFlut—by looking at the variability in time between heartbeats and taking into account ventricular beats. Because AFib and AFlut are characterized by the "loss of synchrony between the atria and the ventricles" which leads to "irregular" heart beating, Appx47 (1:23-39), looking at the variability in time between heartbeats,

taking into account any ventricular beats, has long been the way to diagnose those conditions. *See* Appx47 (1:14-42); *supra* at 6. As discussed below, the '207 patent merely claims automatically identifying AFib or AFlut in broad, functional terms—in the same way doctors can do—rather than claiming any improved technological approach or particular implementation for detecting AFib or AFlut.

Claim 1 recites detecting beat-to-beat timing and ventricular beats and then performing three basic steps: (1) determining the variability in beat-to-beat timing; (2) determining the relevance of this variability to AFib and AFlut; and (3) generating an event when the variability is identified as relevant, in light of the variability caused by ventricular beats. *See* Appx52.

Each of the steps in claim 1 is something that can be—and long was—performed by doctors viewing electrocardiograms. Determining variability in beat-to-beat timing has long been accomplished by inspecting an electrocardiogram and comparing the time between successive R waves (the R-to-R interval), as the patent illustrates:

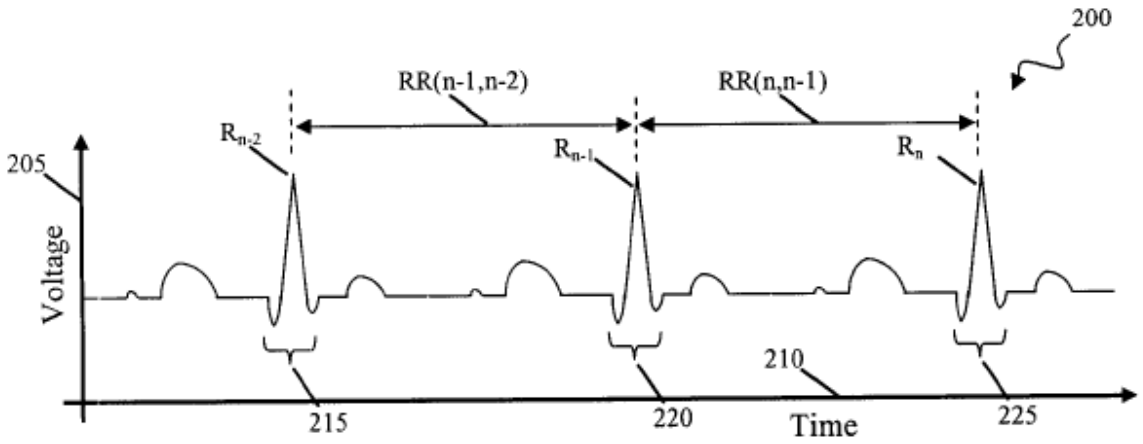


**FIG. 2**

Appx40 (Fig. 2); *see also, e.g.*, Appx47 (2:4-6), Appx49 (5:21-23, 6:23-26). Similarly, medical professionals have long been able to discern ventricular beats in an electrocardiogram. Appx185 ¶ 8 (U.S. Patent Pub. 2002/0065473, issued as U.S. Patent No. 6,922,584, and cited on the face of the '207 patent, Appx39). (ventricular beats can be "visually identified by trained medical care providers"). Determining the relevance of this information to identify an AFib or AFlut event is likewise a mental process—the core of what a doctor would do in analyzing an electrocardiogram to diagnose a heart condition. *See* Appx49 (6:55-58) ("Relevance can be identified by *comparing* the variability to a predetermined amount ...." (emphasis added)). Doctors have long understood the need to identify and take ventricular beats into account, as indicated by the fact that algorithms and devices for identifying them were commercially available. *See* Appx51 (9:23-32); *see also*, *e.g.*, Appx192 ¶ 74 (U.S. Patent Pub. 2002/0065473) (explaining that

ventricular beats should be considered to discern between AFib and other arrhythmias).

As illustrated by the chart below, claim 1 is nothing more than a computerized version of a doctor's approach to diagnosis:

| **1.** A device, comprising: | **1.** A *diagnosis*, comprising: |
|---|---|
| a beat detector to identify a beat-to-beat timing of cardiac activity; | *a doctor* to [visually] identify a beat-to-beat timing of cardiac activity; |
| a ventricular beat detector to identify ventricular beats in the cardiac activity; | *a doctor* to [visually] identify ventricular beats in the cardiac activity; |
| variability determination logic to determine a variability in the beat-to-beat timing of a collection of beats; | *a doctor* to determine a variability in the beat-to-beat timing of a collection of beats [in her mind]; |
| relevance determination logic to identify a relevance of the variability in the beat-to-beat timing to at least one of atrial fibrillation and atrial flutter; and | *a doctor* to identify a relevance of the variability in the beat-to-beat timing to at least one of atrial fibrillation and atrial flutter [in her mind]; and |
| an event generator to generate an event when the variability in the beat-to-beat timing is identified as relevant to the at least one of atrial fibrillation and atrial flutter in light of the variability in the beat-to-beat timing caused by ventricular beats identified by the ventricular beat detector. | *a doctor* to generate an event [by writing in the patient's chart] when the variability in the beat-to-beat timing is identified as relevant to the at least one of atrial fibrillation and atrial flutter in light of the variability in the beat-to-beat timing caused by ventricular beats identified by the *doctor*. |

Accordingly, claim 1 recites "analyzing information by steps people go through in their minds," which this Court has treated as "essentially mental processes within the abstract-idea category." *Electric Power*, 830 F.3d at 1354. Claim 1 adds only incidental features to the basic mental steps—specifying generic

off-the-shelf components ("a beat detector" and "a ventricular beat detector") and other purely functional labels ("variability determination logic to determine a variability," "relevance determination logic to identify a relevance," and "an event generator to generate an event"). *Supra* at 6-8. But such generic computer implementation—even if it "automate[s] or otherwise make[s] [the steps] more efficient" (*OIP Techs., Inc. v. Amazon.com, Inc.*, 788 F.3d 1359, 1363 (Fed. Cir. 2015))—does not make the claims "'any less abstract.'" *Intellectual Ventures I LLC v. Symantec Corp.*, 838 F.3d 1307, 1319 (Fed. Cir. 2016) ("*Symantec*") (citation omitted). That is, "[i]t is not enough" to point to such conventional activities and mental processes that doctors could perform in diagnosing AFib and AFlut "and say 'do it on a computer.'" *Apple, Inc. v. Ameranth, Inc.*, 842 F.3d 1229, 1243 (Fed. Cir. 2016).

This Court has repeatedly found abstract (and ineligible) similar computer-implemented claims for collecting data and analyzing it to identify events. For example, in *Electric Power*, the "lengthy and numerous" claims recited (1) "detecting events on an interconnected electric power grid in real time" using steps for "receiving" various "data streams" (such as "sub-second, time stamped synchronized phasor measurements"), (2) "detecting and analyzing events" (based, on various "measurements … and dynamic stability metrics" that are "indicative of events, grid stress, and/or grid instability"), (3) "displaying the event analysis

results and diagnoses," and (4) "deriving a composite indicator of reliability." 830 F.3d at 1351-52. This Court found the claims were directed to the abstract ideas of "collecting information, analyzing it, and displaying certain results." *Id*. at 1353. In *FairWarning IP, LLC v. Iatric Systems, Inc.*, the ineligible claims recited identifying events in patient medical data and "providing notification if the event has occurred." 839 F.3d 1089, 1092-93 (Fed. Cir. 2016). And in *University of Florida Research Foundation*, the ineligible claims recited "receiving physiologic treatment data from at least two bedside machines" and converting, analyzing, and presenting it to assist clinical diagnoses. 2019 WL 921859, at *3.[3] As in such cases, the claims here are directed to an abstract idea for collecting and analyzing data—diagnosing AFib and AFlut by looking at heart beat variability and premature ventricular beats.[4]

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[3] *See also, e.g.*, *Symantec*, 838 F.3d at 1313 (ineligible claims recited collecting e-mail data using mathematical algorithm and identifying characteristics such as whether it contained a virus); *SmartGene, Inc. v. Advanced Biological Labs., SA*, 555 F. App'x 950, 954-55 (Fed. Cir. 2014) (ineligible claims recited making comparisons to identify medical diagnostic options).

[4] As *Electric Power*, *FairWarning*, *University of Florida Research Foundation* and other cases illustrate, CardioNet's contention that the abstract idea must "stretch beyond a specific problem in a specific field" (Blue Br. 41) is incorrect.

### 2. Claim 1 Does Not Recite Any Specific Improvement In Computerized Medical Technology

Claim 1 does not specify any particular implementation of the automated diagnostic process. Claim 1 does not recite *how* to determine that beat-to-beat timing is relevant to AFib or AFlut or *any* criteria for when it is sufficiently relevant, taking ventricular beats into account, to generate an event. That is, it recites "result-based functional language" without claiming "*how* to achieve these results"—which is insufficient under § 101. *Two-Way Media*, 874 F.3d at 1337 (emphasis added); *see also*, *e.g.*, *Apple*, 842 F.3d at 1241 (claims ineligible because they "do not claim a particular way of programming or designing the software [to perform the desired features], but instead merely claim the resulting systems"). Notably, CardioNet repeatedly refused to construe the claims as requiring any specificity, arguing that the claims imposed "no limitation on the logic" and no "specific methodologies," and required no "disclosed algorithms" in the specification. *See, e.g.*, Appx528 (21:22-23) ("there's *no limitation* on the logic" recited in the claims), Appx533 (26:15-17) (claims *not* "*limited* to the specific methodologies that are disclosed in the specification"), Appx534 (27:9-10) ("we're *not limited* to just the disclosed algorithms" in the specification) (emphases added); *supra* at 9.

Furthermore, claim 1 does not recite the type of "specific … improvement[s] in computer capabilities" that this Court found eligible under *Alice* step one in

*Enfish*, 822 F.3d at 1336, and *McRO*, 837 F.3d at 1313-16; *cf.* Blue Br. 52. In *Enfish*, the claims were not directed to an abstract idea because they focused on a "specific improvement to the way computers operate"—an improved "self-referential table for a computer database" involving a detailed four-step algorithm. 822 F.3d at 1336-37. In *McRO*, the claims survived step one because they were narrowly construed to effect a specific "'improve[ment in] an existing technological process'" for 3-D animation by specifying "limited rules" involving "a specific format," "'a morph weight set stream as a function of phoneme sequence and times,'" "sub-sequences," and "transition parameters." 837 F.3d at 1312-16 (citations omitted). Those claims "had the specificity required to transform a claim from one claiming only a result to one claiming a way of achieving it." *SAP*, 898 F.3d at 1167 (distinguishing *McRO*).

In contrast, claim 1 merely automates a traditional diagnostic process; the claims do not solve a computer-specific problem with a "specific improvement to the way computers operate" (*Enfish*, 822 F.3d at 1336) and do not prescribe any "limited rules" for automating this process (*McRO*, 837 F.3d at 1316). As the district court recognized, "[t]he idea of using a machine to monitor and analyze heart beat variability and interfering beats so as to alert the user of potential AF events may well improve the field of cardiac telemetry, but [CardioNet] d[id] not identify improvements to any particular computerized technology." Appx9.

Rather than recite "an improvement in computers," the claims "use computers as tools" to perform the abstract idea. *Electric Power*, 830 F.3d at 1354. They "fail[] to provide any technical details for the tangible components, but instead predominately describe[] the system and methods in purely functional terms" with generic logic components to perform the claimed functions. *TLI Commc'ns LLC v. AV Automotive, L.L.C. (In re TLI Commc'ns LLC Patent Litig.)*, 823 F.3d 607, 612 (Fed. Cir. 2016).

### 3. The Features CardioNet Relies Upon Do Not Make Claim 1 Non-Abstract

CardioNet argues that claim 1 is not abstract at step one based on certain purported features. Those arguments fail.

First, CardioNet argues that claim 1 is non-abstract because it covers "a specific device, having specific components"—including beat detectors and "logic components—"for reporting specific medical conditions in the human heart." Blue Br. 40-41. CardioNet also argues that the claims are limited to "a specific field" and contends that the district court's decision is "anomalous" because it finds claims to "cardiac monitoring technology" ineligible. *Id.* at 41, 51-52. But recitation of elements "which are in the physical realm of things" does not confer eligibility where such "limitations require no improved computer resources," *SAP*, 898 F.3d at 1169, and it is well-established that focusing claims on a "particular field of use" does not make them eligible under § 101, *Erie*, 850 F.3d at 1330

(citation omitted); *see also*, *e.g.*, *Flook*, 437 U.S. at 586-88, 594 (updating alarms in petrochemical field); *Electric Power*, 830 F.3d at 1351-52 (diagnosing problems in power grid).

Numerous claims have been found ineligible despite reciting far more "specialized" limitations for identifying and reporting specific information—in the medical field and otherwise. For example, in *Alice*, the ineligible computer claims for performing intermediated settlement recited a "data processing system," "communications controller," and "data storage unit." 573 U.S. at 226. In *University of Florida Research Foundation*, the ineligible computer claims for transforming "physiologic treatment data" used "at least two bedside machines"—each with a "driver"—and a "bedside graphical user interface." 2019 WL 921859, at *3-4. In *Accenture Global Services, GmbH v. Guidewire Software, Inc.*, the ineligible computer system claims used "logic for manipulating the data," a "task engine," and an "event processor." 728 F.3d 1336, 1338 (Fed. Cir. 2013). And in *Cleveland Clinic Foundation v. True Health Diagnostics LLC*, this Court found ineligible medical diagnostic claims for monitoring bodily samples for myeloperoxidase levels to determine risk of cardiovascular disease. 859 F.3d

1352, 1360-61 (Fed. Cir. 2017).[5] Here, the claimed components are even more generic and non-specific than those found ineligible.

In a similar vein, CardioNet's argument that the claims' central focus here is too "narrow" to be abstract (Blue Br. 29, 41) misses the mark. A "narrow" abstract idea is "still ineligible." *SAP*, 898 F.3d at 1169. But, as discussed, CardioNet's claims are *not* "narrow"—they are recited at a high level of generality and the abstract idea is akin to basic diagnostic activities humans have always performed.

Second, CardioNet argues that the purported invention "offers a number of important advantages"—it can purportedly "distinguish AF from other types of cardiac arrhythmia, has improved positive predictability of AF, and can identify sustained AF episodes that have increased clinical significance." Blue Br. 44-45; *see also id.* at 47 (asserting claims "achiev[e] a sensitivity to AF in excess of 90% and a positive predictivity in excess of 96%"). But there is nothing about claim 1

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[5] *See also*, *e.g.*, *Mayo Collaborative Servs. v. Prometheus Labs., Inc.*, 566 U.S. 66, 73-74 (2012) (measuring specific 6-TG and 6-MMP thiopurine metabolites to assess efficacy of specific drugs in specific patients); *Ariosa Diagnostics, Inc. v. Sequenom, Inc.*, 788 F.3d 1371, 1377 (Fed. Cir. 2015) ("[u]sing methods like PCR to amplify and detect cffDNA"); *Intellectual Ventures I LLC v. Capital One Fin. Corp.*, 850 F.3d 1332, 1339 (Fed. Cir. 2017) ("*Capital One II*") (various "component[s]" for organizing, identifying, mapping, and detecting data); *Smart Sys. Innovations, LLC v. Chicago Transit Auth.*, 873 F.3d 1364, 1369 (Fed. Cir. 2017) ("bankcard reader" and "bankcard verification system"); *Automated Tracking Sols., LLC v. Coca-Cola Co.*, 723 F. App'x 989, 991-92 (Fed. Cir. 2018) (RFID "transponder," RFID "scanner," and "antenna").

that limits it to any specific, accurate implementation. *See RecogniCorp*, 855 F.3d at 1327 (patent eligible features must be "evident in the claims"); *Berkheimer*, 881 F.3d at 1369 (patent eligible features must be "captured in the claims"). By its literal terms, claim 1 requires only detecting beats, making a determination about relevance, and generating an event. The claim equally applies to use of *bad* logic to determine relevance and *poorly selected* criteria to identify events, with *inaccurate* results.

CardioNet relies on the specification's assertion that the claims provide "improved positive predictability of [AF]" (Appx48 (3:15)), "transformation function[s]" such as the one in Figure 7 (Appx43 (fig. 7), Appx50 (7:59-8:36)), and a certain equation in "Equation 1" (Appx51 (9:64-10:1), Appx47 (2:30-34)). *See* Blue Br. 18-19, 22-23, 44-45. Despite CardioNet's attempt to imbue the claims with features discussed in the specification (*see, e.g.*, Blue Br. 22-23), those details simply are not claimed. Worse, as discussed, CardioNet elected to broadly claim *any* implementation, rather than focus its claims on some specific improvement and refused the district court's invitation to propose narrowing constructions based on the specification. Indeed, CardioNet expressly *refused* to construe the claims to require any specific implementation disclosed in the specification. *See*, *e.g.*, Appx533 (26:15-17) (claims not "limited to the specific methodologies that are disclosed in the specification"), Appx534 (27:9-10) ("we're

not limited to just the disclosed algorithms" in the specification); *supra* at 9, 23.

As this Court has held, "supposed benefits … not recited in the claims at issue" and "technological details set forth in the patent's specification and not set forth in the claims" cannot confer eligibility. *Versata Dev. Grp., Inc. v. SAP Am., Inc.*, 793 F.3d 1306, 1335 (Fed. Cir. 2015); *Symantec*, 838 F.3d at 1322; *see also Apple*, 842 F.3d at 1242 (details in the spec are "immaterial because those details are not recited in the actual claim"). Therefore, CardioNet cannot attribute to the claims the specification's disclosure of increased accuracy and other unclaimed details. Regardless, the specification makes plain that the purported advantages in predictability are rooted in the abstract idea itself—the ability to distinguish AFib and AFlut from other cardiac irregularities by accounting for premature ventricular beats, which is the type of mental process doctors long performed. *See* Appx47 (3:6-12). Consequently, those purported advantages cannot save the claim.

Third, CardioNet argues that the claims provide real-time monitoring and mobile capacity. *See*, *e.g.*, Blue Br. 44-45 (purported "advantages" include "monitor[ing] the cardiac signals of ambulatory patients in real-time" to "'speed the delivery of urgent medical care'" (quoting Appx48 (3:38-39)). But those purported features are also not required by the claims and, thus, cannot confer eligibility. *See Berkheimer*, 881 F.3d at 1369; *Apple*, 842 F.3d at 1242; *Symantec*, 838 F.3d at 1322. In fact, the specification refutes CardioNet's argument and

states that those purported benefits are *not* required by the invention: "Cardiac monitoring can be performed in real time *or delayed*"—and either "remotely" or "*within the same room*." Appx52 (12:4-5), Appx48 (4:38-43) (emphasis added). Even if required, this Court has repeatedly found that such features do not make claims eligible. *See*, *e.g.*, *Two-Way Media*, 874 F.3d at 1335 (ineligible claims for "forwarding *real-time* information … *over the communications network*"); *Electric Power*, 830 F.3d at 1351 (ineligible claims for "detecting events on an interconnected electric power grid in *real time* over a *wide area*"); *Affinity Labs of Tex., LLC v. DIRECTV, LLC*, 838 F.3d 1253, 1259 (Fed. Cir. 2016) (ineligible claims for streaming media to "a *remote* location") (emphases added).

#### 4. CardioNet's Heavy Reliance On This Court's 1992 Decision In *Arrhythmia* Is Misplaced

CardioNet relies heavily on *Arrhythmia Research Technology, Inc. v. Corazonix Corp.*, 958 F.2d 1053 (Fed. Cir. 1992). Blue Br. 50-52. According to CardioNet, *Arrhythmia* remains good law even though it was decided in 1992 under the so-called "*Freeman-Walter-Abele*" test—well before the modern § 101 jurisprudence reflected in *Bilski*, *Mayo*, and *Alice*. *Id.* at 50 n.17.

Cardionet's reliance is misplaced. By 2008, this Court had expressly recognized that the § 101 analysis in *Arrhythmia* is obsolete: "in … *Arrhythmia* … and other decisions, those portions relying solely on the *Freeman-Walter-Abele* test should no longer be relied on." *In re Bilski*, 545 F.3d 943, 959 n.17 (Fed. Cir.

2008), *judgment aff'd sub nom. Bilski v. Kappos*, 561 U.S. 593 (2010); *see also In re Ferguson*, 558 F.3d 1359, 1364 n.4 (Fed. Cir. 2009) (this Court has "rejected the so-called *Freeman–Walter–Abele* test").

Also, since then, this Court has never relied on *Arrhythmia*'s § 101 analysis or result. That is unsurprising. In *Arrhythmia*, the claims were found eligible because they recited "converting" analog signals to digital form, processing it using certain mathematical operations, and comparing the result to a predetermined level to determine whether the patient is at risk for heart problems. *Arrhythmia* found that those process steps were sufficiently "physical" to qualify under the § 101 doctrine at the time. But that approach is no longer viable: in *Alice* and *Mayo*, the Supreme Court held that whether the processes "'necessarily exist[] in the physical, rather than purely conceptual, realm,' is beside the point," *Alice*, 573 U.S. at 224 (citation omitted), and that "simply implementing a mathematical principle on a physical machine, namely a computer, [i]s not a patentable application of that principle," *id.* at 222 (quoting *Mayo Collaborative Servs. v. Prometheus Labs., Inc.*, 566 U.S. 66, 84 (2012)); *see also, e.g.*, *Genetic Techs. Ltd. v. Merial L.L.C.*, 818 F.3d 1369, 1377 (Fed. Cir. 2016) ("physical steps" for detecting genetic variations by "amplifying genomic DNA with a primer pair" and "analyzing the amplified DNA sequence to detect the allele" were not inventive).

Under *Alice*, claim 1 is directed to an abstract idea at step one.

### B. Claim 1 Adds Nothing Inventive

At *Alice* step two, claim 1's elements, individually or collectively, add nothing inventive to the abstract idea—no specific, inventive technological improvement. Instead, claim 1 recites performing the abstract idea with conventional technology and says nothing about how to program this standard equipment to accomplish the claimed functions. Such implementation of "method[s] of organizing human [medical] activity" adds nothing inventive. *Symantec*, 838 F.3d at 1318 (citation omitted).

#### 1. Claim 1 Requires Only Conventional Computer Technology

Claim 1 recites components for performing the claimed steps in purely functional terms—collecting cardiac data (using "beat detector[s]"), determining the variability between the beats (using "variability determination logic"), determining the relevance (using "relevance determination logic"), and then identifying a cardiac event (using an "event generator"). Appx52. As the specification itself emphasizes, those basic functions can be performed using conventional cardiac monitoring equipment and conventional computer hardware and/or software.

Specifically, the recited "beat detector" and "ventricular beat detector" can be *any* equipment that detects heartbeats, and the patent identifies as exemplary only off-the-shelf components such as a QRS detector (for the "beat detector"), the

Mortara VERITAS Analysis Algorithm (for the "ventricular beat detector"), or the ELI 250TM Electrocardiograph (for both beat detectors). Appx49 (5:15-20), Appx51 (9:22-32); *see also* Blue Br. 56 (conceding that "several components in the claims, such as the premature ventricular beat detector, were previously known"). Likewise, the "variability determination logic" by its literal terms can by *anything* that "determines [] variability," the "relevance determination logic" literally can be *anything* that "identif[ies] a relevance of the variability," and the "event generator" can be *any* "data processing device" that "generate[s] an event." Appx52 (cl. 1), Appx49 (5:55-56). The patent discloses that a variety of implementations of conventional computer hardware and/or software can be used to implement these generic functions. *See, e.g.*, Appx52 (11:5-9) ("Various implementations of the systems and techniques described here can be realized in digital electronic circuitry, integrated circuitry, specially designed … circuits[], computer hardware, firmware, software, and/or combinations thereof."); *see also* Appx49 (6:32-42), Appx52 (11:9-62), Appx45-46 (Figs. 10, 11).

Reciting such conventional components imposes no "meaningful limit on the abstract idea," which is insufficient to render the claims eligible. Appx14; *see Alice*, 573 U.S. at 225-27. Those are the same type of conventional functions and components that have repeatedly been found non-inventive. *See, e.g.*, *Electric Power*, 830 F.3d at 1355 (collecting data and identifying events in electric power

grid requires no "nonconventional computer, network, or display components"); *FairWarning IP*, 839 F.3d at 1096 ("microprocessor," "user interface," and "non-transitory computer-readable medium with computer-executable instructions" are generic computer components); *Symantec*, 838 F.3d at 1318 ("software products executing on conventional server-class computers" are generic); *Mayo*, 566 U.S. at 79-80 (common medical devices); *see also supra* at 21-22 & n.3, 26-27 & n.5.

CardioNet contends that even if the individual claim elements are generic, "the claims would still pass muster." Blue Br. 56. But CardioNet does not (and cannot) identify any non-conventional arrangement or improved computer technology. The claim elements as an ordered combination "ad[d] nothing ... that is not already present when the steps are considered separately." *Alice*, 573 U.S. at 225 (citation omitted); *see, e.g.*, *Electric Power*, 830 F.3d at 1355 (no "non-generic arrangement of known, conventional pieces" in steps for collecting, analyzing, and presenting data (citation omitted)); *Two-Way Media*, 874 F.3d at 1339 ("no inventive concept in the ordered combination" of steps for processing, routing, and monitoring data). The claims merely recite the conventional components that perform their usual functions arranged in a standard way to perform a commonplace diagnostic method: collect data, analyze it, and identify medically significant events. *See* Appx8 ("The patent claims at issue in this case appear to be similarly directed to collecting and analyzing information to detect particular

anomalies, and notifying the user when the anomaly is detected."). Anyone who wants to identify AFib or AFlut by looking at the variability in time between heartbeats would detect the beats and then determine variability in beat-to-beat timing to assess the relevance of that variability and, ultimately, determine whether an AFib or AFlut event has occurred. *See Mayo*, 566 U.S. at 79 (claimed steps would be performed by "[a]nyone who wants to make use of these [ineligible principles]"). In other words, a human would determine whether beat variability is "relevant" to AFib and AFlut in the same manner recited in claim 1. *Supra* at 20.[6]

Accordingly, claim 1 does not provide the type of specific technological solution to a technological problem that made the claims eligible at *Alice* step two in *BASCOM Global Internet Services, Inc. v. AT&T Mobility LLC*, 827 F.3d 1341 (Fed. Cir. 2016), *Amdocs (Israel) Ltd. v. Openet Telecom, Inc.*, 841 F.3d 1288 (Fed. Cir. 2016), and *DDR Holdings, LLC v. Hotels.com, L.P.*, 773 F.3d 1245 (Fed. Cir. 2014); *cf.* Blue Br. 56. In *BASCOM*, the eligible claims recited particular improved computer technology—a user-customizable network filter at a specific location with a specific "non-conventional and non-generic arrangement" of

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[6] Even if the claimed device makes this determination differently from a human, the determination function is fundamentally the same thing that a human could do. *See, e.g.*, *Content Extraction & Transmission LLC v. Wells Fargo Bank, Nat'l Ass'n*, 776 F.3d 1343, 1347 (Fed. Cir. 2014) (claims akin to human activities and ineligible even though "human minds are unable to process and recognize the stream of bits" in the same way as the automated process).

network components—not just "an abstract-idea-based solution implemented with generic technical components in a conventional way." 827 F.3d at 1350-51. In *Amdocs*, the claims were eligible, based on a narrow claim construction, because they required that "generic components operate in an unconventional manner" to provide an "unconventional technological solution (enhancing data in a "distributed architecture") to a technological problem (massive record flows which previously required massive databases)." 841 F.3d at 1300-01. And, in *DDR Holdings*, the claims were eligible because their specific innovation (a different way of accessing websites) was "necessarily rooted in computer technology" to solve an "Internet-centric problem" (web site customers being instantaneous transported to another site) that "does not arise in the 'brick and mortar' context." 773 F.3d at 1257-59.

In contrast, here, "[t]here is not … any 'specific or limiting recitation of … improved computer technology.'" *Symantec*, 838 F.3d at 1316 (citation omitted) (distinguishing such cases). CardioNet's '207 patent does not claim the "non-conventional and non-generic arrangement of known, conventional pieces," *BASCOM*, 827 F.3d at 1350, teach how those known components "operate in an unconventional manner," *Amdocs*, 841 F.3d at 1300-01, or solve a uniquely "[computer]-centric problem," *DDR Holdings*, 773 F.3d at 1259. Instead, claim 1 is firmly rooted in longstanding human activities—it does nothing more than

perform basic medical processes to serve routine diagnostic goals using generic computer functionality. *See BASCOM*, 827 F.3d at 1351-52. Claim 1 is thus indistinguishable from the numerous claims for collecting data, analyzing it, and then presenting the results that this Court has found ineligible. *See, e.g.*, *University of Fla. Research Found.*, 2019 WL 921859, at *3; *Electric Power*, 830 F.3d at 1353-54; *FairWarning IP*, 839 F.3d at 1093; *Symantec*, 838 F.3d at 1313; *supra* 21-22 & n.3.

### 2. Claim 1 Recites No Way—Let Alone An Inventive Way—Of Implementing The Claimed Functions

Claim 1 is separately ineligible because it provides no meaningful detail on "how a computer [or other device] accomplishes" the claimed functions, *Intellectual Ventures I LLC v. Capital One Fin. Corp.*, 850 F.3d 1332, 1342 (Fed. Cir. 2017) ("*Capital One II*"), or "how the result [of identifying the anomalies] is accomplished," *Internet Patents Corp.*, 790 F.3d at 1348. The claims are silent on how to program the "logic" components, *see Apple*, 842 F.3d at 1242 (unclaimed programming details are immaterial to § 101 analysis), or whether and how to apply any rules when generating an event. By claim 1's literal terms, *any* "logic" could be used to determine variability in beat-to-beat timing and assess its relevance to AFib and AFlut, and *any* criteria could be used to decide whether to generate an event. *See* Appx52 (cl. 1); *see also* Appx400 ("CardioNet's infringement chart points to black box 'Statistical Calculation,' 'AF decision

maker,' and 'AF Trigger' in the MoMe Kardia to allege it contains the relevance determination[.]" (citing Appx333-334)); Appx17 ("[T]he asserted claims of the '207 patent are broadly described, with no meaningful limitation ...."). Nothing in claim 1 restricts how the result of identifying AFib and AFlut by taking ventricular beats into account is accomplished. *See Symantec*, 838 F.3d at 1316.

This Court has repeatedly held that claims, such as claim 1, which merely involve using conventional hardware to implement generically claimed functions lack the specificity required to add something inventive to an abstract idea. For example, in *Symantec*, the ineligible claims recited functional computer components for performing the claimed steps: a "receipt mechanism," a "rule engine," and a "distribution mechanism." 838 F.3d at 1316-17. In *Capital One II*, the claims were ineligible because they just recited "a generic computer element—a processor—and a series of generic computer 'components' that merely restate[d] their individual functions." 850 F.3d at 1341. The Court explained that the claims "provide[d] only a result-oriented solution, with insufficient detail for how a computer accomplishes it," but the "law demands more." *Id*. at 1342. And, in *Intellectual Ventures I LLC v. Capital One Bank (USA)* ("*Capital One I*"), the claims only recited a functional "'software' 'brain'" tasked with performing the abstract idea, which was insufficient. 792 F.3d 1363, 1371 (Fed. Cir. 2015); *see also Accenture*, 728 F.3d at 1338-39 (claims recited an "event processor" and other

components but no implementation details). So too here: the claim elements—the "beat detectors," "logic" components, and "event generator"—add nothing inventive because they "merely restate their individual functions" with "insufficient [implementation] detail[s]." *Capital One II*, 850 F.3d at 1341-42.

### 3. CardioNet's Remaining Step Two Arguments Are Unavailing

CardioNet attempts to show inventiveness at step two in three other ways. Those three arguments fail.

First, CardioNet argues that "the patent discloses and claims a *novel* device for diagnosing AF." Blue Br. 55 (emphasis added). As discussed, the claims recite only use of off-the-shelf components, so CardioNet's assertion that a novel device is claimed is incorrect. But even if CardioNet's assertion were credited, this Court has held that novelty or nonobviousness does not make claims eligible under § 101. For example, in *SAP*, this Court found claims ineligible as a matter of law on the pleadings under § 101 even though this Court previously found the claims patentable over prior art. 898 F.3d at 1163. The Court explained that, even if claimed techniques are "novel and nonobvious"—indeed, "'[g]roundbreaking, innovative, or even brilliant'"—"that it is *not enough* for eligibility." *Id*. (emphasis

added) (citation omitted).[7] Similarly, in *Symantec*, the claims were ineligible despite a jury's finding of novelty because "'[t]he "novelty" of any element or steps in a process, or even of the process itself, is of *no relevance* in determining'" eligibility. 838 F.3d at 1315 (quoting *Diamond v. Diehr*, 450 U.S. 175, 188-89 (1981)); *see also, e.g.*, *Flook*, 437 U.S. at 588, 591-92 (claims ineligible even assuming novelty); *Two-Way Media*, 874 F.3d at 1339-40 (expert testimony on novelty not "relevant" to eligibility because those "are separate inquiries").

Second, CardioNet suggests that claims can satisfy § 101 without explaining how to achieve the purported technological advance or how the computer achieves the desired result. Blue Br. 60. But this Court has repeatedly found claims ineligible where they are recited in "result-based functional language" without claiming (and teaching the public) "*how* to achieve these results." *Two-Way Media*, 874 F.3d at 1337 (emphasis added); *see also*, *e.g.*, *Apple*, 842 F.3d at 1241 (claims ineligible where they "do not claim a particular way of programming or designing the software [to perform the desired features], but instead merely claim

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[7] The district court properly applied this principle in holding the claims ineligible despite, as CardioNet acknowledges, recognizing that idea embodied in the asserted claims "may well improve the field of cardiac telemetry." Blue Br. 27 (quoting Appx9). CardioNet, however, then misstates the district court's holding in asserting that the court found "that the asserted claims fail to improve cardiac monitoring technology." *Id.* at 28; *see also id.* at 53 ("The heart of the district court's *Alice* step 1 analysis is a factual finding that the asserted claims are not improvements to cardiac monitoring technology).

the resulting systems"); *Capital One II*, 850 F.3d at 1342 (claims ineligible where they do not specify "how a computer accomplishes" the claimed functions); *Internet Patents*, 790 F.3d at 1348 (claims ineligible where they do not specify "how the result is accomplished"). That is the case here: claim 1 does not explain how the claimed "determination logic" components perform the key diagnostic determinations. That is fatal under § 101.

Third, CardioNet relies on the machine-or-transformation test, Blue Br. 61, but applying that test does not lead to a different result. CardioNet does not argue the claims "transform[] a particular article into a different state or thing" (under the transformation prong of the test). *See Ultramercial, Inc. v. Hulu, LLC*, 772 F.3d 709, 716 (Fed. Cir. 2014) (citation omitted). Nor could it, as the claims involve only collecting and processing data. *See id*. at 717; *CyberSource*, 654 F.3d at 1375. Instead, CardioNet argues that the components and functions tie the claims to a "particular machine" (under the machine prong of the test). Blue Br. 61. But this Court has repeatedly held that using conventional computing technology to perform abstract ideas—providing no detail on *how* to do so—does not qualify as a patent eligible "particular machine" under the machine-or-transformation test. *See*, *e.g.*, *Ultramercial*, 772 F.3d at 716-17 (citation omitted); *Versata*, 793 F.3d at 1334. The same is true here. *See supra* at 32-39.

The fact that CardioNet's patent claims fail the machine-or-transformation test further confirms that they are ineligible under § 101. But even if they "passed" the test, they would still not satisfy § 101. Although the machine-or-transformation test can be a "useful clue," it does not "trump[]" the two-step *Alice* analysis. *Mayo*, 566 U.S. at 88 (citation and emphasis omitted); *see also DDR Holdings*, 773 F.3d at 1256 ("[S]atisfying the machine-or-transformation test, by itself, is not sufficient to render a claim patent-eligible …."). Indeed, the Supreme Court in *Alice*—and this Court in the vast majority of decisions since then—found claims ineligible without addressing the machine-or-transformation test at all. Under a straightforward application of *Alice* and this Court's extensive precedent, CardioNet's claims are ineligible under § 101.

### C. The Asserted Dependent Claims Are Not Patent Eligible

The other asserted claims (dependent claims 2, 3, 7, 10-12, and 22) are also ineligible. Each recites the same basic steps as claim 1—collecting beat data, determining variability, determining relevance, and identifying events. And each adds only incidental limitations that do not render them non-abstract (at step one) or inventive (at step two). Thus, like claim 1, the other asserted claims are ineligible under § 101, as the district court held. Appx16-17.[8]

[8] Claim 1 is representative of the other asserted claims because all are directed to the same abstract idea and add only incidental limitations. *See Content Extraction*,

### 1. Adding Mathematical Functions Or Formula Does Not Make The Claims Eligible

CardioNet argues that certain claims (claims 2, 10, and 22) include two "new techniques" for determining relevance: (1) "'weighting the [premature ventricular] beat as being negatively indicative'" of AF (claims 2 and 22) and (2) "'using a non-linear function of a beat-to-beat interval'" (claims 10 and 22). Blue Br. 24-25 (quoting claim 22); *see id.* at 17, 44, 59. But those do not make the claims eligible for at least three reasons.

First, they provide no meaningful details on how to determine relevance—the claims "do[] not purport to explain … the weighting factor, or any of the other variables" for determining relevance. *Flook*, 437 U.S. at 586 (holding claims ineligible). They add only broad, conventional categories of mathematical operations—any negative "weighting" and any "non-linear function" will do. *See* Appx47 (1:63-65) (negative weighing just means that presence of ventricular beats indicates absence of AF); Appx49 (5:42-44) ("non-linear" function is anything that "treats the relationship between variables as something other than a linear function"). Indeed, a doctor who attempts to identify AF based on the R waves (like the ones pictured in Figure 2, Appx40) can simply discount ("negatively

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776 F.3d at 1348 (proper to find claims ineligible based on representative claims). But they are ineligible even considered separately, as discussed below.

weight") premature ventricular beats and assign whatever non-linear relevance she deems appropriate based on the beat-to-beat variability—just as the claims recite.

Second, even if the claims recited specific mathematical functions and calculations, those would still fall "within the abstract-idea category"—and thus fail to confer eligibility. *Electric Power*, 830 F.3d at 1354; *see also*, *e.g.*, *Gottschalk v. Benson*, 409 U.S. 63, 67 (1972) (ineligible patent directed to "mathematical procedures" that could be done mentally or "in existing computers long in use"); *RecogniCorp*, 855 F.3d at 1328 (adding "a mathematical equation that simply changes the data into other forms of data cannot save it"). At most, those claims "add details to the abstract ideas in the claims"—they "add nothing to the non-abstract elements of the claims, which remain wholly conventional computer and display devices." *SAP*, 898 F.3d at 1164 n.1.

Third, even if "the techniques claimed [were] '[g]roundbreaking, innovative, or even brilliant,' … that is not enough for eligibility." *Id.* at 1163 (citation omitted). For example, in *Flook*, the Supreme Court found ineligible claims for measuring values, calculating an updated alarm limit using a specific mathematical formula with a "weighting factor," and adjusting the alarm limit. 437 U.S. at 597. The Court held that, even if the "formula is novel and useful" and "improve[s] the existing process for updating alarm limits," the claims failed to satisfy § 101. *Id.* at 588, 595 & n.18. The Court explained that "[t]he chemical processes involved in

catalytic conversion of hydrocarbons [were] well known, as [were] the practice of monitoring the chemical process variables, the use of alarm limits to trigger alarms, … and the use of computers for 'automatic monitoring-alarming.'" *Id.* at 594. In *SAP*, the claims purported to improve technology for analyzing investment data by using a particular "distribution function using a resampled statistical method and a bias parameter." 898 F.3d at 1164. But this Court held that the technique was "nothing but a series of mathematical calculations based on selected information and the presentation of the results of those calculations," which "add[s] nothing outside the abstract realm" because "'a *new* abstract idea is still an abstract idea.'" *Id*. at 1169, 1163 (citation omitted). So too here: the "weighting" and "non-linear" functions—even if they were new and claimed to require some specific implementation (neither of which is true)—do not confer eligibility any more than the "weighting factor" and formula in *Flook* or the "bias parameter" and specific "statistical" functions in *SAP*.

**2. The Remaining Limitations Are Also Insignificant**

CardioNet fails to substantively address the remaining limitations, none of which make the claims eligible. *See* Appx15-16. Dependent claims 11 and 12 add a QRS detector and sensors to collect cardiac data. Appx53. But those are functional, conventional components—anything that "identifies the time period between successive QRS complexes" (Appx51 (9:4-8))—which does not confer

eligibility. *See Apple*, 842 F.3d at 1245. At most, those claims limit the collection of information to a "particular content"—*e.g.*, certain "types" and "sources" of information—which this Court has found insufficient. *Electric Power*, 830 F.3d at 1353, 1355. Similarly, dependent claim 3 recites determining variability by using three successive QRS complexes. Appx52; *see* Blue Br. 60 (mentioning limitation in passing). Repeating conventional activity does not make the claim any more eligible. *See Content Extraction & Transmission LLC v. Wells Fargo Bank, Nat'l Ass'n*, 776 F.3d 1343, 1348 (Fed. Cir. 2014) (dependent claims' "repeating some steps" was non-inventive). Dependent claim 7 provides that the event generator collects and transmits data to a remote receiver. Appx52. Collecting and transmitting data to a remote location is generic and conventional. *See, e.g.*, *Affinity Labs*, 838 F.3d at 1255-56 (streaming media to "a remote location"); *TLI*, 823 F.3d at 611-15 (collecting and transmitting data). And claim 7, like the other claims, describes these additional steps in purely functional terms, which cannot render the claim patent eligible. *See TLI*, 823 F.3d at 615. Finally, the fact that dependent claim 22 (Appx53), which stems from unasserted claim 20, is couched as a software claim instead of a device claim makes no difference under § 101. *See Alice*, 573 U.S. at 226 (software method and device claims are ineligible for "substantially the same reasons").

### D. The District Court Properly Resolved Eligibility On The Pleadings

CardioNet argues that the district court erred in finding the claims ineligible on the pleadings because, according to CardioNet, there are relevant factual disputes and claim construction issues. CardioNet is incorrect.

#### 1. There Are No Relevant Factual Disputes

Throughout its brief, CardioNet contends that the district court improperly "resolve[d] factual questions on the pleadings" (Blue Br. 58 (citing *Aatrix*)) and that, assuming facts in CardioNet's favor, the claims provide a specific, non-abstract technological advance with an inventive concept. *See*, *e.g.*, Blue Br. 40, 43-45, 49, 58, 63. Relatedly, CardioNet argues that InfoBionic did not submit expert testimony (Blue Br. 47) and faults the district court for relying on "***no evidence*** other than the patent itself" (Blue Br. 46). In practical effect, CardioNet's argument would mean that computer claims can never (or rarely) be found ineligible on the pleadings—because virtually all patentees assert that they have some specific, non-abstract technological advance. That is not the law.

This Court routinely finds claims that recite computer steps for analyzing and presenting data to be ineligible on the pleadings, without further factual development, where there are no relevant fact disputes—before and after *Aatrix*. *See SAP*, 898 F.3d at 1166 ("this question may be, and frequently has been, resolved" on the pleadings). For example, in *University of Florida Research*

*Foundation*, this Court recently found ineligible claims for "receiving physiologic treatment data from at least two bedside machines," and converting, processing, and presenting it. 2019 WL 921859, at *3. The claims provided no "specific improvement to the way computers operate" and "fail[ed] to provide any technical details for the tangible components"—they required only "'well-understood, routine, conventional'" computer technology and "predominantly describ[ed] the system and methods in purely functional terms.'" *Id.* at *5 (citations omitted). This Court rejected the patentee's allegations (and expert testimony) that the system "improve[d] the capabilities of the various bedside monitors to provide usable information in real-time" for "medical diagnosis and patient monitoring," and "solved 'technical problems'" in prior systems. Appellant's Reply Br. 27, 21, 7-8, *University of Fla. Research Found., Inc. v. Gen. Elec. Co.*, 2018 WL 2094432 (Fed. Cir. Apr. 30, 2018) (citation omitted). And there are numerous similar examples, including *SAP*, *FairWarning*, *Two-Way Media*, *RecogniCorp*, *Affinity Labs*, *TLI*, *Internet Patents*, *Content Extraction*, *Ultramercial*, and others. *See also*, *e.g.*, *Interval Licensing*, 896 F.3d at 1339 (claims for "enabling acquisition of a set of content data from a specified information source").

In each of those cases, this Court found the claims ineligible in light of the intrinsic record (the "patent itself") and binding legal precedent—despite the patentees' assertions that the claims represented innovative technological

advances. Here, as in such cases, the intrinsic record is dispositive and "no disputed facts material to the issue of patent eligibility" preclude resolving the issue as a matter of law at the pleading stage. *Interval Licensing*, 896 F.3d at 1342 n.4. Nothing in the '207 patent provides a specific improvement in computer technology. Instead, the disclosure confirms that claims merely purport to automate abstract, human-performable diagnostic concepts in a conventional computer environment. *Supra* at 6-7, 17-20, 32-33. And, as described in the patent and discussed above, the purported advance is itself just an abstract idea—the concept of identifying AF based on heartbeat variability and premature ventricular beats and (for certain claims) performing generic mathematical operations. *Id.*; *supra* at 29, 43-45; *see* Appx47 (1:63-65), Appx48 (3:6-12), Appx49 (5:42-44). Therefore—even assuming the claims provide an advance in the cardiac monitoring field—that is not enough. *See*, *e.g.*, *Flook*, 437 U.S. at 594 n.18 ("[A] claim for an improved method of calculation, even when tied to a specific end use, is unpatentable subject matter under § 101."); *SAP*, 898 F.3d at 1163 ("No matter how much of an advance in the finance field the claims recite, the advance lies entirely in the realm of abstract ideas ….").[9]

[9] Likewise, CardioNet misses the mark in arguing that "the '207 patent, which was granted by the Patent Office on the basis of its disclosures, cannot possibly prove itself ineligible based on the alleged absence of an inventive concept." Blue

Nor does CardioNet's amended complaint raise a factual dispute. After InfoBionic initially moved to dismiss for lack of patent eligible subject matter, CardioNet filed an amended complaint but, tellingly, included *no factual allegations* regarding patent eligible subject matter. And, to date, CardioNet has not contended that any further amendment would save its claims—even after *Aatrix*. Nor could it. At the hearing below, the district court repeatedly asked CardioNet to identify "the supposed disputed facts" that "might preclude" the court "from getting into the heart of the matter," but CardioNet was unable to identify any purported disputed facts. Appx510-511 (3:25-4:22); *see also* Appx512 (5:13-14) ("[W]here do I end up with disputed facts?"), Appx513 (6:21-24) ("I don't mean to be slow here, but what's the factual dispute? I mean, it feels to me that the issue isn't so much whether there's a factual dispute but what I make of the facts so—but help me."). Here, as in those numerous other cases, the intrinsic record is dispositive: even accepting as true all well-plead factual allegations, the claims are directed to an abstract idea and add nothing inventive, as the district court correctly found. *See* Appx17 ("Here, there are no disputes of fact ….").

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Br. 56. This Court's many affirmances of motions to dismiss under § 101 confirm that the mere fact that a patent was granted does not mean it sufficiently claims an inventive concept to survive a motion to dismiss.

### 2. There Are No Claim Construction Disputes

Last, CardioNet suggests that claim construction might reveal something inventive, arguing the district court erred by "neglecting to solicit *InfoBionic's* claim construction positions." Blue Br. 62-63 (capitalization omitted) (emphasis added). That argument lacks merit.

"[C]laim construction is not an inviolable prerequisite to a validity determination under § 101." *Content Extraction*, 776 F.3d at 1349. This Court has held that it is proper to find claims ineligible on the pleadings by construing the claims in favor of the patentee—*i.e.*, by adopting the constructions that the *patentee* proposes. *See*, *e.g.*, *id.* (claims ineligible "even when construed in a manner most favorable to [*patentee*]"); *Two-Way Media*, 874 F.3d at 1338 (claims ineligible "even taking into account [*patentee's*] proposed constructions").

That is precisely what the district court did here. As CardioNet acknowledges, the district court adopted CardioNet's construction of the term "'ventricular beats' to mean 'premature ventricular beats that are irregular beats that interrupt the normal heart rhythm.'" Appx13 n.4 (quoting Appx441 n.2); *see* Blue Br. 62 n.19. That was the sole term that CardioNet sought to construe, *see* Appx440-441 & n.2, and CardioNet itself does not contend that it impacts the ineligibility analysis. CardioNet expressly *refused* to offer additional constructions, even though the district court repeatedly solicited CardioNet's input

and stated that it would adopt any constructions that CardioNet proposed:

> THE COURT: But at this juncture I would take whatever you say it means according to your claim construction. So I guess the question is: What do you say it means?
>
> MS. FUKUDA: … I would say that it at least means what the plain language here requires ….
>
> THE COURT: But you can't come here and say to me, Accept my reading of relevance determination, but I'm not going to tell you what it is.
>
> MS. FUKUDA: It is the—*so if we go down the path of claim construction, it would be the plain meaning* of that term to a person of ordinary skill in the art. …
>
> THE COURT: … My question is simply: What is it that plaintiff claims it means? …
>
> MS. FUKUDA: I'm afraid—let me know if I'm still not answering the question. It's not what it means to me or to you, but it's what it means to a person of ordinary skill in the art knowing everything they know after they read this patent.
>
> THE COURT: No. … what does your client claim it means? …
>
> MS. FUKUDA: … We will have a position. … Right now it's dictated by just the language of the claim element itself. …
>
> THE COURT: I don't know … if you're saying to me it's just the plain language, that would be one thing. If you're saying it means something different … you're the master of your claim construction at the motion-to-dismiss stage.
>
> My question to you is just: What are you arguing that it means? …
>
> MS. FUKUDA: For now, … *our position is that these have plain meaning* ….

Appx530-533 (23:13-25:17) (emphasis added); *supra* at 9, 23. In view of CardioNet's failure to offer a claim construction in response to the district court's repeated inquiries, the court properly concluded, for example, that "the 'determination logic' is undefined and unspecified." Appx15.

In fact, CardioNet emphasized that the claims are *not* "limited to the specific methodologies that are disclosed in the specification." Appx533 (26:15-17); *see also* Appx533 (26:18-19) (arguing that the claims are "not limited to the specific methodologies that you see in a number of columns"); Appx534 (27:9-10) (arguing that "we're not limited to just the disclosed algorithms"); Appx531-532 (24:22-25:1) (arguing plain language controls). CardioNet cannot now fault the district court for not adopting some hypothetical, more favorable construction that CardioNet itself refused to offer.

As the district court concluded, "[o]n the facts as alleged, and the patent term as construed by [CardioNet]," the asserted claims are ineligible under § 101. Appx17.

## CONCLUSION

The district court's judgment should be affirmed.

Respectfully submitted,

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March 13, 2019

## CERTIFICATE OF SERVICE

I hereby certify that on March 13, 2019, I caused the foregoing Brief of Appellee to be served by electronic means through the Court's CM/ECF system on counsel for all parties who are registered CM/ECF users.

*/s/ Maximilian A. Grant*
Maximilian A. Grant

## CERTIFICATE OF COMPLIANCE

I hereby certify that this brief complies with the type-volume limitations of Fed. Cir. R. 32(a) because it contains 11,840 words, excluding the parts exempted by Fed. R. App. P. 32(f) and Fed. Cir. R. 32(b).

I further certify that this brief complies with the typeface requirements of Fed. R. App. P. 32(a)(5) because this brief was prepared using Microsoft Word 2016 in 14-point Times New Roman font.

*/s/ Maximilian A. Grant*

March 13, 2019 Maximilian A. Grant