United States Court of Appeals for the Federal Circuit

ATLAS IP, LLC,
Plaintiff-Appellant

v.

ST. JUDE MEDICAL, INC., ST. JUDE MEDICAL S.C., INC.,
Defendants-Appellees

2015-1190

Appeal from the United States District Court for the Southern District of Florida in No. 1:14-cv-21006-CMA, Judge Cecilia M. Altonaga.

Decided: October 29, 2015

GEORGE C. SUMMERFIELD, JR., Stadheim & Grear, Ltd., Chicago, IL, argued for plaintiff-appellant. Also represented by ROLF STADHEIM, ROBERT M. SPALDING.

MARK ANDREW PERRY, Gibson, Dunn & Crutcher LLP, Washington, DC, argued for defendants-appellees. Also represented by WAYNE M. BARSKY, JENNIFER RHO, Los Angeles, CA; HERVEY MARK LYON, Palo Alto, CA; NEEMA JALALI, San Francisco, CA.

Before MOORE, REYNA, and TARANTO, *Circuit Judges.*

TARANTO, *Circuit Judge.*

This case is closely related to *Atlas IP, LLC v. Medtronic, Inc.*, No. 15-1071, decided today. The two cases involve the same patent and some of the same claim language. To avoid repetition, the present opinion relies heavily on the opinion in *Atlas v. Medtronic*, which partly construed the language at issue here.

Atlas IP, LLC brought this action against St. Jude Medical, Inc. and St. Jude Medical S.C., Inc. (collectively, "St. Jude") in the Southern District of Florida, alleging that certain St. Jude medical products for monitoring a patient's condition infringed claims 11 and 14 of the Atlas-owned patent, U.S. Patent No. 5,371,734, concerning wireless communications between a hub and remotes. Claims 11 and 14 provide:

> 11. A communicator for wirelessly transmitting frames to and receiving frames from a[t] least one additional communicator in accordance with a predetermined medium access control protocol, the communicators which transmit and receive the frames constituting a Group, each communicator including a transmitter and a receiver for transmitting and receiving the frames respectively, the medium access control protocol controlling each communicator of the Group to effect predetermined functions comprising:
>
> [a] designating one of the communicators of the Group as a hub and the remaining the [sic] communicators of the Group as remotes;
>
> [b] the hub establishing repeating communication cycles, each of which has intervals during which the hub and the remotes transmit and receive frames;

[c] *the hub transmitting information to the remotes to establish the communication cycle and a plurality of predeterminable intervals during each communication cycle*, the intervals being ones when the hub is allowed to transmit frames to the remotes, when the remotes are allowed to transmit frames to the hub, and when each remote is expected to receive a frame from the hub;

[d] the remotes powering off their transmitters during times other than those intervals when the remote is allowed to transmit frames to the hub, by using the information transmitted from the hub;

[e] the remotes powering off their receivers during times other than those intervals when the remote is expected to receive a frame from the hub, by using the information transmitted from the hub;

[f] the hub assigning transmission opportunities to the remotes, each transmission opportunity being an interval for a remote to transmit frames to the hub;

[g] the hub transmitting transmission opportunity allocation information in a frame transmitted by the hub;

[h] the hub monitoring the frames transmitted by each remote during its transmission opportunity; and

[i] the hub revoking a previous transmission opportunity allocation of a remote which has not transmitted more than a predetermined number of frames during a previous number of communication cycles.

14. A communicator for wirelessly transmitting frames to and receiving frames from a[t] least one additional communicator in accordance with a predetermined medium access control protocol, the communicators which transmit and receive the frames constituting a Group, each communicator including a transmitter and a receiver for transmitting and receiving the frames respectively, the medium access control protocol controlling each communicator of the Group to effect predetermined functions comprising:

[a] designating one of the communicators of the Group as a hub and the remaining the [sic] communicators of the Group as remotes;

[b] the hub establishing repeating communication cycles, each of which has intervals during which the hub and the remotes transmit and receive frames;

[c] *the hub transmitting information to the remotes to establish the communication cycle and a plurality of predeterminable intervals during each communication cycle*, the intervals being ones when the hub is allowed to transmit frames to the remotes, when the remotes are allowed to transmit frames to the hub, and when each remote is expected to receive a frame from the hub;

[d] the remotes powering off their transmitters during times other than those intervals when the remote is allowed to transmit frames to the hub, by using the information transmitted from the hub;

[e] the remotes powering off their receivers during times other than those intervals when the remote is expected to receive a frame from the

> hub, by using the information transmitted from the hub;
>
> [f] the hub establishing the length of each communication cycle; and
>
> [g] the hub transmitting a frame containing information describing the length of the communication cycle prior to the end of the communication cycle whose length is established.

Id., col. 47, line 62, through col. 48, line 36; *id.*, col. 49, lines 31–68 (bracketed letters added for convenience; emphases added to highlight language central to the issues on appeal).

The district court adopted constructions of the "establishing" and "transmitting" limitations, which are also found in claim 21, the subject of *Atlas v. Medtronic*. Initially, it construed the highlighted language in clause [c] to mean "the hub transmitting to the remotes information necessary to know *in advance* the starting time and duration of the communication cycle and of each of two or more predeterminable intervals during each communication cycle." *Atlas IP, LLC v. St. Jude Medical, Inc.*, No. 14-21006-CIV, 2014 WL 3764129, at *7–8 (S.D. Fla. July 30, 2014) (emphasis added). Then, on St. Jude's motion for summary judgment, the court went beyond that construction. The court held that its "in advance" requirement meant that the information specifying "when the communication cycle starts and its duration . . . must be transmitted in advance of the very communication cycle at issue." J.A. 7. That is, it construed the "transmitting" limitation to require not just that specified information be transmitted to remotes before the remotes begin transmitting in that cycle, as sufficed for non-infringement in the *Atlas v. Medtronic* case, but that "the hub transmits to the remotes information necessary to know the starting time and duration of the communica-

tion cycle in advance of that communication cycle." J.A. 10.

Atlas agreed that there was no infringement "under this interpretation of 'in advance.'" J.A. 10. The district court therefore granted St. Jude summary judgment of non-infringement and entered a final judgment. We have jurisdiction under 28 U.S.C. § 1295(a)(1).

In *Atlas v. Medtronic*, we today hold that the starting time and duration of the cycle and of remote-transmission intervals within each cycle must be communicated by the hub to the remotes before the time at which remotes may begin transmitting. Here we hold, in agreement with Atlas, that the claim language at issue does not require that the cycle's starting time and duration be communicated to the remotes even earlier, *i.e.*, before the communication cycle begins. The district court's contrary conclusion, adopting St. Jude's argument, rests at bottom on the notion that, unless that information is sent before the start of the cycle, the remotes would not be awake to receive the hub-sent information about the cycle. J.A. 8 ("the remotes must know when to power up for the beginning of the next communication cycle, or they would be unable to receive the information frame" with the schedule for the cycle). But the patent does not support that premise or, therefore, the district court's construction.

Nothing in the claim language requires that the hub transmit information to the remotes about the starting time of the communication cycle before the start of the communication cycle. The claims recite that the hub establishes repeating communication cycles and then transmits information to the remotes to establish the communication cycle and its intervals. '734 patent, col. 48, lines 7–17 (claim 11); *id.*, col. 49, lines 44–54 (claim 14). The claims also state that the remotes power off their transmitters and receivers for times outside the relevant interval. *Id.*, col. 48, lines 22–25 (claim 11); *id.*,

col. 49, lines 59–62 (claim 14). Nowhere do the claims indicate that the starting time of the communication cycle is communicated in advance of that cycle.

Similarly, the claims do not require that the duration of the communication cycle be sent in advance of the communication cycle, and nothing in the intrinsic record dictates that result. Other claim language positively suggests, if it does not necessitate, that information about the duration may be sent during the communication cycle. Clause [g] of claim 14 itself recites that "the hub transmit[s] a frame containing information describing the length of the communication cycle *prior to the end of the communication cycle* whose length is established." *Id.*, col. 49, lines 65–68 (emphasis added).[1] Claim 33, which also contains the transmitting clause [c], states that "the hub transmit[s] a frame containing information to establish a first interval in the communication cycle during which the information establishing the communication cycle . . . is transmitted." *Id.*, col. 53, lines 49–53.

The specification also does not require pre-cycle transmission of the cycle's starting time or duration. To the contrary, figure 3 depicts a communication cycle **70**, which includes an information interval **76**, and the specification explains that "[t]he time for the overall communication cycle **70**" is transmitted by the hub to the remotes

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[1] St. Jude does not distinguish clause [g] on the ground that it refers to "length" rather than "duration," terms Atlas has elsewhere noted are different, though not unrelated. Rather, St. Jude repeatedly equates the terms for present purposes. St. Jude Br. 20, 28, 31 (treating specification language about length as referring to duration). Whatever the precise relation of the terms, clause [g] points toward the possibility, not excluded by anything in the patent, that duration information is sent after the cycle begins.

during the information interval **76**, *i.e.*, *after the cycle has already begun*. *Id.*, col. 13, lines 23–28. That is strong evidence against the district court's construction.

And that evidence is not undermined by passages in the specification that describe the hub as including in an information frame not only the duration of the present communication cycle but also information about the next two communication cycles. *See id.*, col. 28, lines 54–56 ("Th[e] duration [of the current communication cycle], as well as the durations of the next two communication cycles, are reported in each information frame."); *id.*, col. 36, lines 3–5 ("[T]he hub transmits the lengths of each of the next two communication cycles as part of the information frame at the beginning of each communication cycle."). St. Jude relies on those passages as providing for start-and-duration information about a cycle to be sent before the cycle: it is sent in the previous two cycles *as well as* during the present cycle. But the passages say nothing about the starting time being included; they speak only of "length" and "duration."[2] Moreover, they describe embodiments only, and while the three-cycle information frame is one way of helping remotes stay in contact and synchronized with the hub, *id.*, col. 28, lines 51–54; *id.*, col. 36, lines 6–10, nothing says that it is necessary. There is no reason to read that particular embodiment into the claim language.

St. Jude therefore rests its argument ultimately on the repeated assertion, which persuaded the district court, that the claimed invention, in order to function,

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[2] The omission of starting-time information is highlighted by the specification passage that speaks of information about both "starting times" and "durations" for "intervals" within a cycle, while, for the cycles themselves, speaking only of their "lengths," not their starting times. *Id.*, col. 27, lines 57–61.

requires at least the starting-time information (perhaps also the duration information) to be sent to the remotes before the cycle begins. Unless the hub did so, St. Jude argues, the remotes could not know to power on their receivers for the start of the cycle and so would not receive the scheduling information (allotting reception and transmission intervals) sent from the hub in the first part of the cycle. As a legal matter, of course, "'a construction that renders the claimed invention inoperable should be viewed with extreme skepticism.'" *See AIA Engineering Ltd. v. Magotteaux Int'l S/A*, 657 F.3d 1264, 1278 (Fed. Cir. 2011). But that principle does not decide this case. St. Jude has not shown that the district court's construction must be adopted in order to avoid inoperability.

The specification states that "[i]t is necessary for battery operated remotes to recognize when to expect the beginning of the next communication cycle, in order to power-up their RF modems to receive the information frames at the beginning of each cycle." '734 patent, col. 35, line 66, through col. 36, line 2. *See also id.*, col. 33, lines 28–31 ("Based on the information conveyed in the information frame **200**, all remotes **66** enable their RF modems **96** at the time of the expected arrival of each information frame **200**."). But neither the specification nor operability requires sending the remotes the starting time or duration of an upcoming communication cycle before the cycle commences. In fact, the specification explicitly contemplates the remotes functioning by knowing "*approximately* when to expect frames transmitted from the hub." *Id.*, col. 13, lines 31–32 (emphasis added). St. Jude has not explained why it is insufficient for the remotes to know *roughly* "when to expect" an upcoming cycle to begin, not its exact starting time, and why that information cannot be supplied by providing a cycle's starting time and duration *during* a given cycle.

In particular, St. Jude has not explained why that information would not suffice to allow the remotes to have

their receivers on for whenever the next cycle actually starts. By default the remotes turn on their receivers when they first power on and await a signal from the hub. *Id.*, col. 39, lines 34–38. They will therefore receive a "first" cycle's scheduling-information frame, which can communicate the starting time (which has already passed) and duration for that particular cycle. If the cycles "repeat[] on a continuous basis," *id.*, col. 11, line 41, the receipt of that information would seem to allow the remotes to have their receivers on when the next cycle begins, and thus receive the next-cycle scheduling information. St. Jude has not shown otherwise.

At oral argument, St. Jude suggested that communicating the duration of the current communication cycle necessarily defines the starting time of the next cycle, so that transmitting one cycle's duration *is* transmitting the next cycle's starting time. Oral Arg. at 16:08–16:26. St. Jude did not recognizably make that contention before oral argument, and we are not persuaded. The only passage in the specification that refers to the continuous repetition of the cycles states that the cycles are "repeated on a continuous basis," '734 patent, col. 11, lines 39–42, not that each cycle begins immediately after the previous one ends. Moreover, St. Jude's suggestion finds no support in the claims. The claims state that the cycles are repeating, *see, e.g.*, *id.*, col. 48, line 7; *id.*, col. 49, line 44, but none states that the end of one *is* the start of the next. And claim 34, which has the same "transmitting" limitation as claims 11 and 14, recites that the hub transmits the "length" of the current cycle *and* the start of the next cycle. *Id.*, col. 54, lines 28–32. Under St. Jude's equating of "length" with "duration," *see* note 1, *supra*, its new contention would render claim 34's language redundant.

We conclude that the district court erred in construing the "transmitting" limitation to require that the starting time and duration of a communication cycle be sent in advance of the communication cycle. Because there is no

ruling about infringement under any other claim construction, we vacate the summary judgment of non-infringement and remand for further proceedings.

CONCLUSION

For the foregoing reasons, we vacate the summary judgment of non-infringement and remand.

Costs awarded to Atlas.

VACATED AND REMANDED