

United States Court of Appeals for the Federal Circuit

ATLAS IP, LLC,
Plaintiff-Appellant

v.

MEDTRONIC, INC., MEDTRONIC USA, INC.,
MEDTRONIC MINIMED, INC.,
Defendants-Cross-Appellants

2015-1071, 2015-1105

Appeals from the United States District Court for the
Southern District of Florida in No. 1:13-cv-23309-CMA,
Judge Cecilia M. Altonaga.

Decided: October 29, 2015

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

JOHN C. O'QUINN, Kirkland & Ellis LLP, Washington,
DC, argued for defendants-cross-appellants. Also repre-
sented by WILLIAM H. BURGESS; JEANNE M. HEFFERNAN,
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Angeles, CA.

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

TARANTO, *Circuit Judge*.

Atlas IP, LLC owns U.S. Patent No. 5,371,734, which describes and claims a protocol for controlling wireless network communications between a hub and remotes. In December 2013, Atlas sued Medtronic, Inc., Medtronic USA, Inc., and Medtronic MiniMed, Inc. (collectively, “Medtronic”), alleging that certain Medtronic medical products for monitoring a patient’s condition infringed the ’734 patent. In a related case, the United States District Court for the Southern District of Florida adopted claim constructions that, by agreement, govern the present case. *Atlas IP, LLC v. St. Jude Medical, Inc.*, No. 14-21006-CIV, 2014 WL 3764129 (S.D. Fla. July 30, 2014). The district court in this case then issued two summary-judgment orders concerning claim 21, the only claim at issue here. It granted summary judgment of non-infringement by Medtronic, J.A. 2–6; and it granted summary judgment rejecting anticipation and obviousness challenges to claim 21, *Atlas IP, LLC v. Medtronic, Inc.*, No. 13-23309-CIV, 2014 WL 5305577 (S.D. Fla. Oct. 15, 2014). Atlas appeals the non-infringement ruling, which we affirm. Medtronic cross-appeals the validity ruling, which we reverse. We remand for further proceedings on invalidity.

BACKGROUND

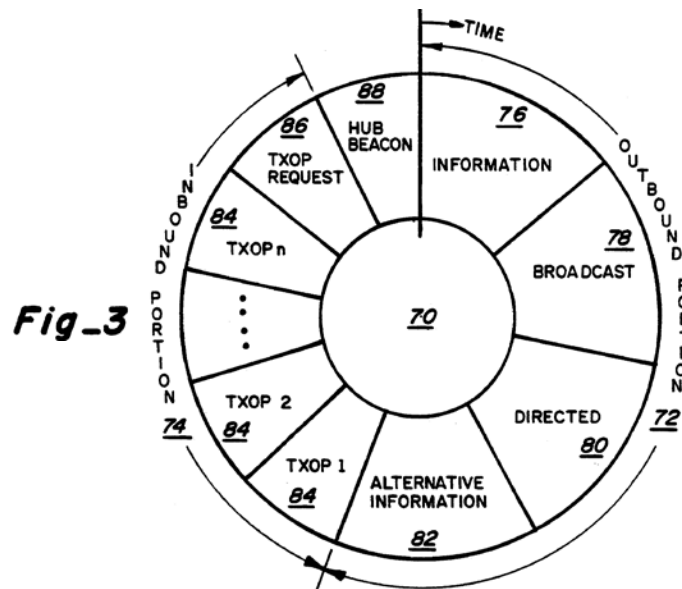
The ’734 patent, entitled “Medium Access Control Protocol for Wireless Network,” notes the existence of prior-art techniques for communication between a hub and multiple remotes in wireless network systems. But, it says, those systems presented a problem. They consumed large amounts of battery power, as the remotes had to leave their receivers on at all times. ’734 patent, col. 4, lines 56–65.

The specification describes means of conserving battery power. According to the summary of the invention,

the hub establishes a communication cycle within which there are intervals for the hub to communicate with the remotes and separate intervals for remotes to communicate with the hub. *See id.*, col. 5, lines 44–47; *id.*, col. 5, lines 50–54. The hub also provides an opportunity for new remotes to join the network and, in addition, communicates with other hubs to avoid interference. *See id.*, col. 5, line 67, through col. 6, line 2; *id.*, col. 6, lines 53–56. In the detailed description of embodiments, the specification at one point says that the communication cycle “is repeated on a continuous basis as long as the hub is active.” *See id.*, col. 11, lines 41–42.

The invention summary further states that the hub communicates the information about the intervals within a communication cycle to the remotes. *See id.*, col. 5, lines 47–50. Based on that information, the remotes know when to expect to receive frames from the hub and when to transmit any frames they have to the hub. *See id.*, col. 5, lines 50–54. A remote therefore can turn off its receiver during periods in which it does not expect to receive frames from the hub, and it can turn off its transmitter during periods in which it will not be transmitting frames to the hub. *See id.*, col. 5, lines 54–62. In that way, the hub and remotes can communicate but “conserve considerable [battery] power.” *Id.*, col. 5, lines 62–66.

Figure 3 illustrates a communication cycle, with the “outbound” portion containing intervals for the hub to transmit and the “inbound” portion containing intervals for transmission opportunities (TXOP) for the remotes:



Claim 21, the only claim at issue in this case, states:

21. 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 [o]f 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 transmitting two frames containing information to establish the plurality of predeterminable intervals during each communication cycle, the second frame containing the information to established [sic] the plurality of predeterminable intervals occurring before the intervals in which the remotes are allowed to transmit frames to the hub.

Id., col. 50, line 39, through col. 51, line 9 (bracketed letters added for convenience; emphases added to highlight language central to the issues on appeal).

In this case, Atlas alleged that certain of Medtronic's cardiac defibrillators and insulin pumps infringed several claims of the '734 patent because of how certain components communicated with each other. Medtronic asserted counterclaims requesting a declaratory judgment of

invalidity of all the claims of the '734 patent under 35 U.S.C. §§ 102, 103(a), and 112.

In *Atlas v. St. Jude Medical*, the district court construed claim terms that appear in several claims, including claim 21. It held that “the hub establishing repeating communication cycles”—in clause [b] of claim 21—means “the hub defining in advance the starting time and duration for each repeating communication cycle.” And it held that “the hub transmitting information to the remotes to establish the communication cycle and a plurality of predeterminable intervals during each communication cycle”—in clause [c] of claim 21—means “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 v. St. Jude Medical*, 2014 WL 3764129, at *5–8 (emphasis added).

Medtronic moved for summary judgment of non-infringement of the asserted claims, and the district court granted the motion except as to claim 21. The district court then reconsidered its ruling as to claim 21 and granted summary judgment of non-infringement of claim 21 as well. Only claim 21 is at issue on appeal.

The district court’s ruling rested on the “in advance” portion of the claim construction. The parties disputed whether, under the “in advance” construction, the endpoint of a communication cycle must be communicated to the remotes before the cycle begins, as Medtronic argued, or merely before the remotes transmit to the hub, as Atlas argued. The court concluded that the accused devices do not infringe “under either party’s construction.” J.A. 6.

Separately, Atlas sought summary judgment rejecting Medtronic’s anticipation and obviousness challenges to claim 21. (Medtronic cross-moved for summary judgment of anticipation, but its cross-motion was dismissed as

untimely, and that dismissal is not challenged on appeal.) The district court granted Atlas's motion. *Atlas v. Medtronic*, 2014 WL 5305577. The court rested its holding on a new claim construction of language in clause [b] of claim 21: "communication cycles, each of which has intervals during which the hub and the remotes transmit and receive frames." The court held: "The plain meaning necessitates the hub and the remotes transmit and receive frames during each communication cycle, not that the hub and the remotes simply *may* do so during a communication cycle." *Id.* at *3 (emphasis in original).

After the court's two summary-judgment rulings as to claim 21, Medtronic's counterclaims for invalidity of the rest of the '734 patent's claims remained pending. Atlas and Medtronic submitted a joint motion to dismiss the counterclaims without prejudice, which the court granted. The district court then entered an amended final judgment reflecting the dismissal.

Atlas appeals the district court's summary-judgment order of non-infringement. Medtronic cross-appeals the district court's summary judgment of no anticipation or obviousness.

DISCUSSION

We first consider this court's jurisdiction, as we are obliged to do even though neither party disputes it. *Wawrzynski v. H.J. Heinz Co.*, 728 F.3d 1374, 1378 (Fed. Cir. 2013). We have jurisdiction over an appeal from a final decision of a district court. 28 U.S.C. § 1295(a)(1). Here, the district court entered judgment on the merits rejecting all of Atlas's claims in its complaint and entered judgment rejecting one of Medtronic's counterclaims, which asserted invalidity of claim 21. Then, based on an agreement between the parties, it dismissed without prejudice Medtronic's other counterclaims, which asserted invalidity of the '734 patent's other claims. For this court to have jurisdiction in this appeal, we must find that

there is a final judgment before us, no other basis of appellate jurisdiction being invoked or apparent.

The legal question is whether the district court's complete adjudication of some claims followed by a consented-to dismissal without prejudice of the remaining claims—what has been called “manufactured finality”—produces a final decision under § 1295(a)(1). The answer hinges on whether we apply our law or the law of the regional circuit, here the Eleventh Circuit. Under Eleventh Circuit law, the district court's decision strongly appears not to be final. *See Hood v. Plantation Gen. Med. Ctr., Ltd.*, 251 F.3d 932, 934 (11th Cir. 2001); *State Treasurer of State of Mich. v. Barry*, 168 F.3d 8, 11 (11th Cir. 1999). But our court has held that a final judgment exists when a district court fully adjudicates some claims and by consent dismisses all remaining counterclaims without prejudice. *See Doe v. United States*, 513 F.3d 1348, 1353–54 (Fed. Cir. 2008); *Nystrom v. TREX Co.*, 339 F.3d 1347, 1351 (Fed. Cir. 2003).

Our own law, rather than regional-circuit law, governs on this issue. We apply our own law to issues unique to patent law and regional circuit law to issues unrelated to patent law. *See Midwest Indus., Inc. v. Karavan Trailers, Inc.*, 175 F.3d 1356, 1359 (Fed. Cir. 1999) (en banc in relevant part). The statute governing our appellate jurisdiction, § 1295, including in particular the language giving us jurisdiction over an appeal from a “final decision” in a patent case, § 1295(a)(1), is unique to this court. Although our interpretation of “final decision” is informed by similar language in § 1291, which governs “courts of appeals (other than the United States Court of Appeals for the Federal Circuit),” § 1295 sets out the exclusive jurisdiction of our circuit, and only our circuit. We therefore apply our own law to issues of finality under § 1295(a)(1). *Nystrom*, 339 F.3d at 1349–50. For that reason, the district court's order dismissing all pending counterclaims without prejudice, after fully adjudicating

some of the claims, is final, *see id.* at 1351, and we have jurisdiction here under § 1295(a)(1).

We review a district court's grant of summary judgment de novo. *Myers v. Bowman*, 713 F.3d 1319, 1326 (11th Cir. 2013); *Serdarevic v. Advanced Medical Optics, Inc.*, 532 F.3d 1352, 1362 (Fed. Cir. 2008). We review the claim construction rulings of the district court de novo where, as here, there are no underlying factual issues. *See In re Papst Licensing Digital Camera Patent Litig.*, 778 F.3d 1255, 1261 (Fed. Cir. 2015).

A

Atlas does not dispute that the judgment of non-infringement of claim 21 must be affirmed if, under the “establishing” and “transmitting” limitations of clauses [b] and [c], the endpoint of the communication cycle must be communicated to the remotes before any remote transmits frames to the hub. Infringement therefore turns entirely on a claim-construction issue. When construing claim terms, “[w]e generally give words of a claim their ordinary meaning in the context of the claim and the whole patent document; the specification particularly, but also the prosecution history, informs the determination of claim meaning in context, including by resolving ambiguities; and even if the meaning is plain on the face of the claim language, the patentee can, by acting with sufficient clarity, disclaim such a plain meaning or prescribe a special definition.” *World Class Technology Corp. v. Ormco Corp.*, 769 F.3d 1120, 1123 (Fed. Cir. 2014); *see Phillips v. AWH Corp.*, 415 F.3d 1303, 1312–17 (Fed. Cir. 2005) (en banc). Following that approach, we reject Atlas's challenge to the district court's construction.

Atlas attacks aspects of the threshold claim construction adopted by the district court in *Atlas v. St. Jude Medical*, *supra*. It asserts that the ordinary meaning of the word “establish” in the two limitations at issue is merely “initiate,” so that the hub need not define the start

and duration of communication cycles and their intervals, let alone transmit that definitional information. Atlas Opening Br. 15–16. But, although “establish” might mean “initiate” in some contexts, it must mean more in this context, which is all about setting a schedule for various communication devices to follow where coordination is important. A principal definition of “establish” that most naturally fits this context is: “set up (an organization, system, or set of rules) on a firm or permanent basis.” The New Oxford American Dictionary 580 (2001). And although it is not clear that Atlas argues otherwise independently of its “establish” contention, the context also makes clear that the schedule thus established must be “transmit[ted]” in advance of the start of the intervals set up for remotes to transmit information to the hub.

Claim 21 states that first the hub establishes communication cycles, which consist of three intervals: (a) when the hub is allowed to transmit frames to the remotes, (b) when the remotes are allowed transmit frames to the hub, and (c) when each remote is expected to receive a frame from the hub. ’734 patent, col. 50, lines 52–62. And then the hub transmits information to the remotes to establish those intervals. *Id.*, col. 50, lines 55–62. If the hub does not define the intervals when the hub will transmit to the remotes and when each remote will transmit to the hub, multiple communicators (*e.g.*, the hub and a remote or two remotes) could transmit simultaneously and their signals would collide. *See id.*, col. 3, lines 4–10. Thus, the hub-sent information must indicate both the start and end time of the intervals of each communication cycle.

To fulfill the core claimed function of power saving, each remote must know when its receiver and transmitter can be off and must be on, which naturally, perhaps necessarily, calls for the scheduling information to arrive before any remote transmissions begin. The claim confirms that the transmittal of information must allow for this power-saving function when it indicates, in language

mixing the plural and singular, that a remote powers off its transmitter for times other than when it is allowed to transmit, and similarly for the receiver for times when it is expected to receive, “by using the information transmitted from the hub.” *Id.*, col. 50, line 63, through col. 51, line 2. And the claim confirms the centrality of the timing of the information transmittal when it adds a further limitation requiring that the crucial information be transmitted twice before remote transmissions begin: the hub “transmitting two frames containing information to establish the plurality of predeterminable intervals during each communication cycle, the second frame containing the information to establish[] the plurality of predeterminable intervals occurring before the intervals in which the remotes are allowed to transmit to the hub.” *Id.*, col. 51, lines 3–9. All of this makes clear that the hub must set up a schedule of intervals and send that schedule to the remotes before the transmission-opportunity slots for the remotes arrive.

The specification confirms that the interval allotment must be defined (and communicated to the remotes) before the remote-transmission opportunities begin. The summary of the invention states that “[t]he hub transmits control information to the remotes to establish the communication cycle and to establish a plurality of predeterminable intervals during each communication cycle.” ’734 patent, col. 5, lines 47–50. That control information “define[s] the starting times and durations of the subsequent intervals of the present communication cycle.” *Id.*, col. 27, lines 57–61. Because the hub conveys those “defined intervals” to the remotes, they are able to power off their transmitters when they are not scheduled to transmit and their receivers when they are not scheduled to receive, and thereby achieve the significant battery-saving power of the invention. *Id.*, col. 5, lines 54–66; see also *id.*, col. 13, lines 12–14, 23–28, 29–36.

Atlas does not seriously dispute that the specification validates the district court’s construction, but instead argues that the medium access control protocol, rather than the hub, defines those intervals. Atlas Response/Reply Br. 5. The specification indicates, however, that the hub uses a medium access control protocol as part of its functionality, not that the medium access control protocol performs any independent function. *See* ’734 patent, col. 11, lines 28–30 (describing the hub as “control[ling] the communications to and from the remotes, using a MAC protocol”); *id.*, col. 13, line 67, through col. 14, line 2 (noting that one of the functions of the hub is to serve as a “medium access control”). Thus, both the claims and specification must be understood to mean that the “establishing” and “transmitting” limitations require the hub to define and transmit the start time and duration of each communication cycle and its constituent intervals in advance.

Atlas invokes the doctrine of claim differentiation, pointing to independent claims 1, 12, 14, and 34 as containing more explicit references requiring the hub to define intervals in advance. Atlas Opening Br. 16. Although sometimes that doctrine (which counsels against constructions that render some claim language superfluous) is important in claim construction, it cannot support Atlas’s position on claim construction here. The claims invoked do not at all suggest any notion of establishing as mere initiating. Moreover, each of the invoked claims contains language that, under Atlas’s arguments, avoids a conclusion of superfluosity under the construction of the “establishing” and “transmitting” limitations at issue here.¹ In any event, we have been cautious in assessing

¹ Claim 1 adds a requirement that “a frame” contain relevant information. ’734 patent, col. 45, line 20. Claim 12 adds requirements that further define how

the force of claim differentiation in particular settings, recognizing that patentees often use different language to capture the same invention, discounting it where it is invoked based on independent claims rather than the relation of an independent and dependent claim, and not permitting it to override the strong evidence of meaning supplied by the specification. *See, e.g., World Class Technology*, 769 F.3d at 1126; *Kraft Foods, Inc. v. Int'l Trading Co.*, 203 F.3d 1362, 1368 (Fed. Cir. 2000). Here, claim differentiation is not significant enough to alter our conclusion on whether the claimed scheduling information must be sent before remotes begin transmission.

The district court did not decide in this case whether the scheduling information (specifically, the starting time and duration) must be sent before the communication cycle begins or before the remotes begin transmitting. For the reasons we have stated, that information must be sent before the remotes begin transmitting, even apart from the claim limitation requiring duplicate transmission before remotes start transmitting. *See* '734 patent, col. 51, lines 3–9 (“the hub transmitting two frames . . . , the second frame containing the information to established [sic] the plurality of predeterminable intervals occurring before the intervals in which the remotes are allowed to transmit to the hub”). The district court in this case concluded that, as long as the information must be sent before the remotes transmit, as we conclude it must, Medtronic’s devices do not infringe. Atlas does not argue

certain transmission opportunities are allocated. *Id.*, col. 49, lines 1–22. Claim 14 adds requirements about the “length” of the communications cycle, *id.*, col. 49, lines 63–68, which Atlas has asserted differs from duration information, J.A. 59–61. And claim 34 is similar. '734 patent, col. 54, lines 28–32.

otherwise. For that reason, we affirm the summary judgment of non-infringement.

B

A distinct issue of claim construction is presented by the district court's summary-judgment rejection of Medtronic's invalidity challenges to claim 21. The court held that language in clause [b], "communication cycles, each of which has intervals during which the hub and the remotes transmit and receive frames," '734 patent, col. 50, lines 52–54, requires, as a matter of "plain meaning," that "the hub and the remotes transmit and receive frames during each communication cycle, not that the hub and the remotes simply *may* do so during a communication cycle as Medtronic argues." *Atlas v. Medtronic*, 2014 WL 5305577, at *3 (emphasis in original). We reject that claim construction. We therefore reverse the grant of summary judgment of no anticipation or obviousness, which rested on the district court's incorrect claim construction.

We note first that the district court's construction is ambiguous on its face. It might be read to require that, in each cycle, every remote transmits a frame or, more narrowly, that at least one remote does so. But neither party suggests that the district court's construction has the every-remote meaning, and Atlas itself does not suggest that the claim language can have that meaning. Rather, both treat the district court as having agreed with Atlas's reading, expressly acknowledged by the district court, *id.*, that, during each cycle, *at least one remote* must transmit a frame. *See* Medtronic Opening/Response Br. 26 ("The district court agreed with Atlas . . ."). We therefore focus on the at-least-one-remote interpretation. But the reasons we reject that interpretation also require rejection of the every-remote interpretation that no party here attributes to the district court or defends as correct.

The district court relied entirely on what it viewed as the “plain meaning” of the claim language. *Atlas v. Medtronic*, 2014 WL 5305577, at *3. The court thought the meaning so plain that it did not even discuss any of the contextual considerations that are often central to claim construction. That was erroneous. The claim language does not have the decisive plain meaning the district court found, and contextual considerations point compellingly the other way.

The claim language at issue—stating that each cycle “has intervals during which the hub and the remotes transmit and receive frames,” ’734 patent, col. 50, lines 52–54—is the kind of phrase that is often used in ordinary speech to set a general framework and not to communicate precise relations among its components. Here, context must determine the relations of the intervals, the hub and remotes, and the receiving and transmitting. The imprecision of the language is apparent on its face. For example, context aside, the plural “intervals” could mean that what follows must occur “during” *each* interval: both transmitting and receiving by both hub and “the remotes.” It is context that precludes that interpretation: hub actions and remote actions occur in separate intervals. The plural “the remotes,” on its face, could mean that all the remotes must perform the actions indicated. But both parties agree that, in context, that reading would be wrong.

Ordinary usage of comparable expressions indicates that the language here does not have a “plain meaning” requiring some remote to transmit a frame in each cycle. A statement that “each school day has classes during which the teacher and students ask and answer questions” could easily be understood to describe what the classes are set up to permit, even what generally goes on, rather than that some student must ask a question in each class. A statement about a multi-defendant trial that “the trial has periods in which the prosecution and

the defendants put on and cross-examine witnesses” would not necessarily mean that at least one defendant must put on a witness. So, too, here: the claim language does not “necessitate[]” that at least one remote must transmit in each cycle. *Atlas v. Medtronic*, 2014 WL 5305577, at *3. Context must determine whether that is a sound interpretation.

The need for context-based interpretation is confirmed by the imprecisions about plurals and conjunctions found in claim language other than clause [b]. Clause [c] describes the intervals within each communication cycle as “being ones” [1] “when” the hub is allowed to transmit frames to the remotes, [2] “when” the remotes are allowed to transmit frames to the hub, [3] “and when” each remote is expected to receive a frame from the hub. ’734 patent, col. 50, lines 55–62. The claim language is imprecise about the conjunction “and”: the first two items in the three-item list might or might not be mutually exclusive; the first and third presumably are not mutually exclusive. Only context resolves the facial uncertainty. In a similar vein, clause [d] alternates between the plural “the remotes” and the singular “the remote” for no discernible reason. It states, for example, that “*the remotes* power[] off their transmitters during times other than those intervals when *the remote* is allowed to transmit frames to the hub.” *Id.*, col. 50, lines 63–65 (emphases added). Mixed use of singular and plural language is a recognized source of likely ambiguity. See Robert C. Faber, *Faber on Mechanics of Patent Claim Drafting* § 3:11 (7th ed. 2015). Again, context is needed to obtain clarification.

The district court did not rely on anything for its construction except the claim words understood in isolation. Neither has Atlas, in this court, identified any substantial basis in the usual contextual considerations—notably, other claim language and the specification—to support the claim construction on which the district court’s validity ruling rests. In fact, as soon as the analysis widens its

focus to examine the context, the answer to the claim-construction question here becomes clear: the language sets aside times in which things are *allowed* to happen, as in the sentences about classrooms and courtrooms noted above. In particular, the claim language requires only that each cycle have one or more intervals in which remotes are *allowed* to transmit.

The other language of claim 21 strongly supports this reading. It speaks of “intervals” “when the remotes *are allowed* to transmit frames to the hub.” ’734 patent, col. 50, lines 58–61 (emphasis added). Again: “those intervals when the remote *is allowed* to transmit frames to the hub.” *Id.*, col. 50, lines 64–65 (emphasis added). And again: “the intervals in which the remotes *are allowed* to transmit frames to the hub.” *Id.*, col. 51, lines 8–9 (emphasis added). Many other claims of the patent are similar.²

The specification does not contain any requirement that at least one remote (much less all remotes) transmit a frame during each communication cycle. Instead, the

² At oral argument, but not before, Atlas made a claim-differentiation argument to the effect that its construction of the language at issue here, which appears as well in claim 14, would improperly give dependent claim 17 the same scope as its independent claim (14). That argument comes too late and is unpersuasive even aside from the familiar cautions about claim differentiation. Claim 17 refers to “length,” which Atlas has distinguished from duration, *see* note 1, *supra*, and requires that the hub allocate transmission opportunities to the remotes and adjust the length of the communication cycle based on the number of transmission opportunities allocated. Claim 17 is different from claim 14 regardless of the claim-construction dispute concerning clause [b] of claim 21.

specification explains that the remotes request transmission *opportunities*, which are “amount[s] of time during which the remote *may* transmit one or more frames to the hub.” ’734 patent, col. 12, lines 22–23 (emphasis added). The specification clearly indicates that, if a remote does not have any information to send, it may leave its transmission opportunity unused. *Id.*, col. 35, lines 9–11; *id.*, col. 39, lines 18–20. Nothing in the specification precludes a full communication cycle in which *no* remote transmits a frame because no remote has information to send. The specification does not preclude that situation expressly or by implication from the contemplated operation.

In particular, no such requirement can be inferred from Figure 19, which depicts a procedure according to which remotes send control frames in the absence of pending frames. *Id.*, col. 44, lines 15–19. Figure 19 depicts only one embodiment. Indeed, that embodiment has *each* remote sending a control frame each cycle—which Atlas’s construction would not require. But the specification makes clear that sending a control frame—for various purposes—is optional. *See id.*, col. 35, lines 9–11 (“In the absence of any frames awaiting transmission, the remote **66** may leave its [transmission opportunity] unused, or may send a control frame.”); *id.*, col. 39, lines 18–20 (same).

Nor does the specification’s discussion of the hub going into an idle status imply the need for some remote to transmit a frame in each cycle. The specification states that the hub may go into an idle state “[i]f no transmissions are received for a predetermined period of time which is much longer than a communication cycle.” *Id.*, col. 39, lines 63–67. By its terms, that discussion contemplates cycles with no remotes transmitting—indeed, contemplates that there can be such cycles without the hub going inactive.

We therefore reject the district court's construction of the clause [b] claim language on which it relied to reject Medtronic's invalidity challenge to claim 21 on summary judgment. We reverse the grant of summary judgment of no anticipation or obviousness and remand for further proceedings in light of the proper construction, requiring only (as relevant here) that there be intervals in which remotes are permitted to transmit frames.

CONCLUSION

For the foregoing reasons, we affirm the district court's finding of non-infringement, reverse the district court's grant of summary judgment of no anticipation or obviousness, and remand.

Costs awarded to Medtronic.

**AFFIRMED IN PART, REVERSED IN PART, AND
REMANDED**