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United States Court of Appeals for the Federal Circuit

99-1239

DATAPOINT CORPORATION,

Plaintiff-Appellant,

v.

STANDARD MICROSYSTEMS CORP.,

Defendant,

and

SVEC AMERICA COMPUTER CORPORATION,

Defendant,

and

INTEL CORPORATION,

and

CISCO SYSTEMS, INC.,

and

PLAINTREE SYSTEMS CORPORATION,

and

ACCTON TECHNOLOGY and ASANTE TECHNOLOGIES, INC.,

and

CABLETRON SYSTEMS, INC.,
and
BAY NETWORKS, INC.,
and
CROSSCOM CORPORATION,
and
DANYA COMMUNICATIONS, INC.,
and
SUN MICROSYSTEMS, INC.,
and
ADAPTEC, INC.,
and
INTERNATIONAL BUSINESS MACHINES CORP.,
and
LANTRONIX and NBASE COMMUNICATIONS, INC.,
Defendants-Appellees.

DECIDED: February 15, 2002

Before MICHEL, RADER, and BRYSON, Circuit Judges.

MICHEL, Circuit Judge.

In this appeal from a consolidated patent infringement suit, Plaintiff-Appellant Datapoint Corp.

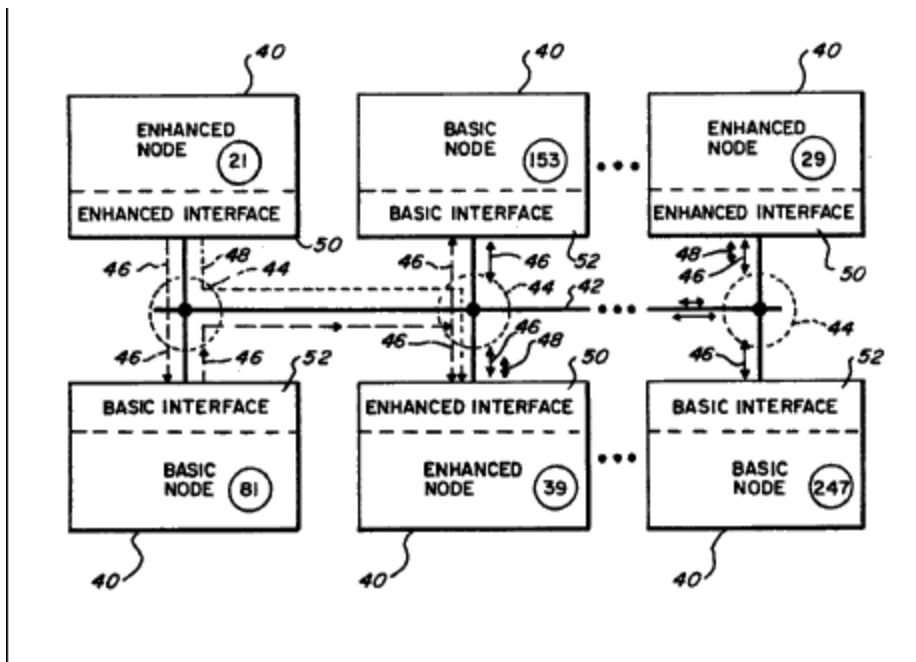
("Datapoint") challenges the propriety of the district court's adoption, in toto, of the Special Master's claim construction. We conclude that the Special Master's claim construction was correct, and therefore affirm the summary judgment of non-infringement, given the court's claim construction.

DISCUSSION

I

Datapoint is the assignee of United States Patent Nos. 5,008,879 ("the '879 patent") and 5,077,732 ("the '732 patent"), both drawn to local area networks ("LANs") with multiple operational capabilities. A LAN is a system of interconnected peripheral devices, or "nodes" (e.g., a computer terminal, printer, or modem) that share files and information in a relatively local environment, such as an office or college campus. LANs have grown in popularity (and necessity) with the advent of the Internet, as schools and businesses have an increased need to share files and other information and for such information to be accessible from a central location. Historically, there has been a problem seamlessly integrating upgraded peripheral devices onto existing LANs. That is, as computer technology continues to advance, LAN operators must integrate new devices onto existing LANs, without having to replace all of the older, less powerful nodes, to run the same applications. The '732 and '879 patents address this problem.

The patents-in-suit relate generally to LANs, as depicted in Figure 1 of both patents (shown below), in which all stations are interconnected to a single logical point such that the communications from one station are delivered to all other stations on the network. The six nodes **40** shown are merely representative; most LANs can and do contain substantially more nodes. All six nodes can communicate through the communication medium **42** at a "common network operability," i.e., the basic communication level, but only the enhanced nodes can communicate at an enhanced capability. The hubs **44** connect the nodes to the communication medium in a single logical point (thereby facilitating cable management, signal amplification, and fault isolation), but they do not interpret or otherwise modify LAN communications. '732 patent, col. 4, lines 48-54.



In 1996, Datapoint brought four patent infringement actions against numerous defendants in the United States District Court for the Eastern District of New York, alleging infringement of the '879 and '732 patents. The cases were consolidated and a Special Master was appointed to assist in supervising discovery and to conduct a Markman hearing. The parties agreed that claim 31 of the '732 patent and claim 1 of the '879 patent were representative for purposes of their dispute.

After a six-day Markman hearing in early 1998, the Special Master issued a thorough, 92-page claim construction memorandum construing contested terms. Datapoint filed objections. The magistrate judge overseeing the case entered a Report and Recommendation rejecting Datapoint's objections and recommending the adoption of the Special Master's Report "in its entirety." Datapoint again filed objections, which the district court overruled. Thereafter, in view of the claim construction, Datapoint stipulated to summary judgment of non-infringement; the case was dismissed and Datapoint timely appealed. We have jurisdiction pursuant to 28 U.S.C. § 1295(a)(1).

II

A

Datapoint's principal argument on appeal (and one from which many subsidiary arguments must rise or fall) is that the Special Master erred by limiting the claims to the preferred embodiment disclosed in the specification. It is undisputed that the only logical connectivity pattern of LANs shown in the patents is a bus-type LAN. According to Datapoint, however,

because the preambles of both representative claims recite "LANs" generally (and are not limited to "bus-type LANs") and because one of ordinary skill in the art would readily recognize the application of the invention to a wide range of LANs, the Special Master erred in so limiting the claims.

The sole statement in the patents that arguably evinces any contemplation of other types of LANs is the statement that "[a]lthough a bus-type logical connectivity is illustrated and described herein, the invention may be adapted to LANs having other types of predetermined logical connectivity patterns, for example, stars." '732 patent, col. 4, lines 57-61. That this statement is the only reference to any other form of logical connectivity pattern is plain: it was added as an amendment to the written description in response to the First Office Action in the application that became the '879 patent. It does not, however, change the fact that the specification makes clear that the claims are limited to LANs with nodes arranged as "equal peers." And a logical (*i.e.*, necessary) consequence of limiting the LAN structure to one employing an "equal peers" arrangement is to limit the scope of the patent claims in the manner done by the Special Master.

We reject Datapoint's argument that one of ordinary skill in the art reading the patents-in-suit would understand the invention to relate to LANs generally and thus could implement the invention for non-bus-type LANs. To the contrary, the magistrate's Report and Recommendation noted that both experts at the Markman hearing -- including Michael Fischer, a named inventor -- testified that they understood the LAN claimed in the patents to be bus-type LANs. Indeed, despite the lone alternative reference to stars as a possible logical connectivity pattern, there is little evidence that one of ordinary skill in the art would not recognize that sentence as a clear reference to the physical, rather than logical, connectivity pattern. Fischer's testimony reflects his understanding, and this understanding is itself reiterated in Datapoint's brief on appeal. The Special Master's construction is fully supported by the intrinsic evidence.

B

Datapoint next contends that it was error for the Master to construe the claim term "equal peers" in claim 31 of the '732 patent to mean that nodes must have direct access to all other nodes in the network so that all data frames transmitted by each node are "heard" by all other nodes. It contends that this claim construction is incorrect because it (1) excludes the preferred embodiment, insofar as the basic nodes in Figure 1 above, cannot "hear" the communication between the enhanced nodes, and (2) improperly limits the invention to the preferred embodiment, insofar as it requires direct access to all other nodes in the network through a single logical point. Alternatively, Datapoint asserts that it was error for the Master to define "equal peers" when that term already had been defined in the patent specification.

The phrase "equal peers," appearing first in the '732 patent specification as a part of the amendment referred to above, explains the method by which the various nodes communicate:

Each node of a bus-type LAN may directly address and communicate with all of the other nodes as equal peers through the single logical point . . . The nodes are equal peers because none of them have a higher hierarchical status than the others for purposes of communicating in accordance with the predetermined logical connectivity pattern over the single network configuration.

'732 patent, col. 4, lines 54-65. This amendatory language was accompanied by Datapoint's remarks distinguishing two prior art patents, Beierle and Coden. Datapoint distinguished Beierle by noting that some nodes, particularly in Beierle's disclosed star configuration, existed at a higher hierarchy:

The Beierle reference discloses a network in which all of the nodes are connected in a plurality of different network configurations and in which communications occur in accordance with different logical connectivity patterns [A] 'master' node in the star network has a higher hierarchy than the other nodes in order to effect the star logical connectivity pattern, and indeed some of Beierle's network configurations themselves appear to have greater hierarchy than other network configurations, even though the same nodes appear to be involved. The nodes do not, therefore, appear to be equal peers.

Similarly, Datapoint distinguished the Coden reference in a manner that sheds light on the intended meaning of "equal peers":

[Coden] appears to be a network [that] uses a bus in order to also effectuate a ring. In order to do so, the ring nodes appear to communicate with the bus nodes through an interface [that] resembles a bridge. Thus, it would appear that the ring nodes and bus nodes have different hierarchical levels and are not peers, because a ring node cannot directly communicate with another ring node, except by passing communications through bus nodes.

In effect, Datapoint urges that we determine the meaning of "equal peers" from only the amendatory language that appears in the specification. Although one may begin to glean some meaning of the term from the specification, it was entirely appropriate for the Special Master (and now for us) to look also to the prosecution history to aid in our interpretation of "equal peers." Southwall Techs., Inc. v. Cardinal IG Co., 54 F.3d 1570, 1576, 34 USPQ2d 1673, 1676 (Fed. Cir. 1995) ("Arguments and amendments made during the prosecution of a patent application and other aspects of the prosecution history, as well as the specification and other claims, must be examined to determine the meaning of terms in the claims."). This presents the classic example of why reference to the prosecution history is not only appropriate but often is necessary. To suggest in this instance, as Datapoint does, that the definition in the specification is sufficient -- "The nodes are equal peers because none of them have a higher hierarchical status than the others" -- simply begs the question of what is meant by the phrase "higher hierarchical status." We therefore do not agree that the Master erred by refusing to limit his construction of "equal peers" to the "definition" in the specification.

Considering the above-excerpted quotes distinguishing Beierle and Coden, in light of the specification, we are satisfied that the Master's construction of "equal peers" was correct. Nevertheless, Datapoint argues that it was error to require all nodes to "hear" each

communication, because "the claim language does not require a communication to traverse the entire medium." App. Br. at 32 (quoting '879 patent, col. 22, lines 45-50 ("New hubs capable of transmitting data at the enhanced rate must be presenting those segments of the network where enhanced frames are communicated, but basic hubs may continue to be used on branches of the network which contain basic nodes.")). Read in context, this excerpt does not support the proposition for which it is cited.

To the contrary, the '732 patent specification makes quite clear that (1) all data being sent over the network have a source and destination address, and (2) all nodes review the data to determine whether they are the intended recipient of the transmitted message. See, e.g., '732 patent, col. 5, lines 12-17 ("Since all of the other nodes on the LAN also receive the signals transmitted by the source node, the address of the destination node is utilized by each node on the network to recognize and accept only those transmissions addressed to it, while discarding or not recognizing the other transmissions not addressed to it.") (emphases added). Thus, the Master's construction requiring that each node "hear" (as opposed to process or otherwise manipulate) every communication, simply reflects the inherent fact that each node must "hear" a communication before it can "recognize and accept only those transmissions addressed to it." Viewed through this prism, we agree with the Master's construction.

C

The Special Master construed the phrase "communicating frames containing data between all of the nodes at a common communication capability" appearing in claim 31 of the '732 patent as follows:

I find that this phrase requires that each and every node in the network have the ability to communicate with the medium and hence with each and every other node in the network at the common communication capability, and that each node would be expected to use this ability at some time in the operation of the network. This means that in actual network operation, each node at some time can be expected to place data frames on the medium at the common capability and receive data frames from the medium at the common capability.

Datapoint asserts that the requirement that "each node actually use this ability at some time" is an extraneous limitation that controverts the specification and the claim language. According to Datapoint, the patents only require that each node have the ability to transmit and receive frames and either transmit or receive frames at the common communication capability. The Special Master determined that claim 31 of the '732 patent requires that the node not only be able to communicate at the common capability, but also that at some point each node actually do so, lest this method claim be inoperable. J.A. at 41 ("The mere fact that a node may have the capable hardware and/or software installed would not meet this method limitation if the network system organization precluded that node from using that communication capability in actual network operation.") (emphasis in original)); cf. Wang Labs, Inc. v. America Online, Inc., 197 F.3d 1377, 1383, 53 USPQ2d 1161, 1165 (Fed. Cir. 1999) (noting that claims should be construed to preserve their validity). This was not an erroneous construction.

Datapoint's position hinges on its belief that communication occurs when at least one node

transmits and at least one node receives frames containing data, such as in a broadcast communication. But claim 31 recites "a method of communicating information frames between at least three nodes in a [LAN] comprising . . . communicating frames containing data between all of the nodes at a common communication capability and in accordance with a predetermined logical connectivity pattern" (emphasis added). And the specification explicitly defines what "communication" means for purposes of the present invention: "Communication between nodes occurs by sending and receiving frames. A frame is a series of signals applied to a medium." '732 patent, col. 10, lines 49-51 (emphasis added). Thus, to meet all of the limitations of method claim 31, each of the at least three nodes in the LAN must at some point during network operation interconnect as equal peers and send and receive a series of signals applied to a medium. Such a construction comports with the purpose of the invention and is proper when claim 31 is read in light of the specification as a whole.

D

The last limitation from claim 31 construed by the Master and challenged by Datapoint is the phrase "achieving a substantially different form of data frame communication over the medium between [nodes]." Initially, the Special Master found that, within the phrase itself: (1) "medium" refers to the compilation of links and hubs which together form the assembly of pathways connecting all of the nodes; (2) "data frame" or "frames containing data" refers to frames formulated at or above the physical layer including both a source and destination address and comprising data communication between the nodes and not other physical layer signals that may exist on the network; and (3) "node" means a device, including an interface to receive and send signals to the network, connected to the network, which serves as a source or destination for frame communication and which includes a unique network address for this purpose. In light of these definitions, the Master concluded that "achieving a substantially different form of data frame communication over the medium between [nodes]" requires that the two different forms of data frame communication occur over the same overall assembly of links comprising the medium interconnecting all of the nodes; it does not merely mean that different modes of communication occur over separate or distinct links, zones, or sections of the system.

Datapoint disagrees with the Special Master's construction in two ways. First, it disputes the Master's conclusion that the communication must occur over the entire medium and be heard by all nodes. But based on our discussion above that the invention is limited to LANs wherein the nodes are connected as equal peers through a single logical point, we reject this contention out-of-hand. Second, Datapoint alternatively contends that "frames containing data," when properly construed, means only "a series of signals that are applied by a node to the communication medium," and that the Master allegedly erred by limiting "data frame" to a specific type of frame.

Datapoint's proposed definition is more appropriately assigned to "frames" than "frames containing data." Compare '732 patent, col. 10, lines 49-51 ("A frame is a series of signals applied to the medium."). The written description in the '732 patent facially distinguishes "frames containing data" from simply "frames":

"Link level" again refers to the standard seven layer reference model for networks, and generally relates to the sending and receiving of frames of data over the medium **42** and controlling access to the medium **42**.

Frames of data, as will be discussed below, relate to groupings of various physical level signals in such a way to achieve the desired network functionality. For example, all the functions involved in sending and receiving frames, including inserting starting delimiters, ending delimiters, and stripping these off once the data is received, are link level functions.

'732 patent, col. 7, lines 34-44 (emphasis added). One may readily observe from this passage that "frames containing data" are groups of frames -- e.g., inquiry frames, response frames, data packet frames, and token frames -- that achieve given certain network functionality. Consequently, it does not appear to us, as Datapoint suggests, that the Special Master's claim construction in any way limits the term "frames containing data" to a specific type of frame. Rather, it properly recognizes the inherent distinction between "frames" and "frames containing data." The Master's in-depth discussion of the prosecution history and the Markman testimony buttresses this conclusion. To be sure, Datapoint must acknowledge that the two have different meanings, as it attempted during prosecution to amend the original language claiming "frames" to further include "containing data." Cf. CAE Screenplates, Inc. v. Heinrich Fiedler GmbH, 224 F.3d 1308, 1317, 55 USPQ2d 1804, 1810 (Fed. Cir. 2000) ("In the absence of any evidence to the contrary, we must presume that the use of these different terms in the claims connotes different meanings.") (citing Tandon Corp. v. U.S. Int'l Trade Comm'n, 831 F.2d 1017, 1023, 4 USPQ2d 1283, 1288 (Fed. Cir. 1987)). Accordingly, the Special Master's construction of "frames containing data" was correct.

E

The phrase "network operational activity" is not expressly defined in the '897 specification, and the Master found that it had no customary meaning to those of ordinary skill in the art. Thus, looking solely to the intrinsic evidence to discern the meaning of the phrase, the Special Master concluded the phrase "network operational activity" contemplates "a need for valid network activity sensed throughout the network to maintain some aspect of the network functionality." (emphasis in original). Moreover, the Master concluded that it must not be "a fleeting or transitory event." According to Datapoint, "network operational activity" is a subset of "network activity," which it asserts is defined by the specification as "the application of a signal to the medium in either common or enhanced protocol." It asserts network operational activity "may help certain nodes and devices on the network calibrate, and the detection of such activity may cause or prevent an enhanced node from changing from one communication protocol to another."

Once again, Datapoint's basic argument that the communication need not be heard network-wide fails, for the reasons stated above. As for the argument that network operational activity may be fleeting or transitory, we agree with the Master's conclusion that the purpose of the network operational activity is for "all nodes [to] sense something occurring on the network and respond accordingly," essentially to keep them from timing out. The last limitation of '879 patent claim 1 makes clear that the network operational activity is more than simply signals, and serves some additional purpose other than communicating information: "the signals are applied in predetermined patterns to create network operational activity in both protocols while simultaneously communicating information"

This conclusion is fully supported by the '879 patent specification, which demonstrates, in the words of the Master, that the network operational activity is tied to "persistence and consistency." See, e.g., '879 patent, col. 17, lines 14-16 ("Several timeout intervals in the basic link level protocol (discussed below) depend on detection of network activity . . . "); '879 patent, col. 17, lines 36-43 ("[The] periodic guarantee of basic signal activity prevents any basic nodes from forcing network reconfiguration due to apparent inactivity during enhanced frames. In configurations using active hubs as part of the physical media, this periodic guarantee of basic signal activity prevents any hubs from dropping into idle state due to apparent inactivity during enhanced frames."); '879 patent, col. 22, lines 14-22 ("In order to prevent the basic nodes from timing out and initiating a network reconfiguration, each basic node must detect network activity . . . within its activity timeout period (78.4 μ sec for standard ARCNET). In order to eliminate the small possibility that the middle of an enhanced frame could be misinterpreted as the beginning of a basic frame, each basic node must detect network activity every 4.4 [nanoseconds]."). Our de novo review satisfies us that the Master's claim construction of "network operational activity" is supported by the intrinsic evidence.

F

Finally, two limitations in '879 patent claim 1 recite "interface means" for establishing network operational activity and communicating information. Datapoint urges that, despite the invocation of "means" language, "interface means" should not be subject to 35 U.S.C. § 112 ¶ 6. A rebuttable presumption exists that a claim limitation that uses "means" functional language is subject to § 112 ¶ 6. See Enviroco Corp. v. Clestra Cleanroom, Inc., 209 F.3d 1360, 1364, 54 USPQ2d 1449, 1452 (Fed. Cir. 2000). The patentee can rebut this presumption by demonstrating that the claim recites sufficient structure to perform the claimed function. Id. The only evidence Datapoint presents allegedly supporting its argument is its conclusory statement that "the term 'interface' connotes a well known structure," coupled with sundry citations to the specification. The Master's construction was not erroneous, as the claim hardly recites sufficient structure to perform the identified function. We are satisfied, given the quantum of evidence adduced by Datapoint, that the Special Master properly read the term "interface means" as subject to the provisions of 35 U.S.C. § 112 ¶ 6.

III

The last remaining issue is Datapoint's overarching concern that the Master's claim construction was improperly commingled with findings on infringement. In particular, Datapoint takes great exception to the Master's frequent references to bridges (which we can infer from Datapoint's argument the accused device possesses) in his claim construction analysis. Our precedent is clear that construing claims and comparing the properly-construed claims to the accused device is a two-step process. See, e.g., Cole v. Kimberly-Clark Corp., 102 F.3d 524, 528, 41 USPQ2d 1001, 1004 (Fed. Cir. 1996). It is equally clear, however, that in certain circumstances a claim construction analysis may effectively moot the second prong of the infringement analysis. E.g., Multiform Dessicants, Inc. v. Medzam Ltd., 133 F.3d 1473, 1476, 45 USPQ2d 1429, 1431 (Fed. Cir. 1998) ("On occasion the issue of literal infringement may be resolved with the step of claim construction, for upon correct claim construction it may be apparent whether the accused device is within the claims."); accord Vivid Techs., Inc. v. Am.

Sci. & Eng'g, Inc., 200 F.3d 795, 803, 53 USPQ2d 1289, 1294 (Fed. Cir. 1999).

It is entirely appropriate when, in the course of properly and completely construing a claim, the court (or the Special Master, as the case may be) either necessarily or coincidentally considers aspects of the accused device. Here, the Special Master was required to address the issue of bridges and what role they played in the scope of the claims, in light of the prosecution history. At the very least, it was of import to the claim construction analysis because Datapoint engaged in a discussion of bridges in the file wrapper to distinguish the Examiner's first rejection in light of Coden. To the extent that further discussion implicated aspects of the accused device, we view it as warranted under the circumstances. In any event, such discussion could not be the basis for a claim of reversible error because the district court, in the stipulated order and judgment, adopted the claim construction only, expressly disclaiming issues impacting the infringement analysis. J.A. at 2 ("[The Master's] findings are adopted by the court in their entirety, with the exception of what may be characterized as any suggestion of lack of infringement -- an issue beyond the scope of the references and of the authority of the special master or magistrate judge.").

CONCLUSION

For the foregoing reasons, we see no error in the Special Master's claim construction and, accordingly, in the district court's adoption of that construction in its entirety. We therefore affirm.

FOOTNOTES:

[1] See J.A. at 1063-64 ("A star is a term that could be used in referring to a logical topology, but in general is a term that is more relevant to a physical topology. . . . [W]hile in some cases the logical topology and physical topology are the same, there are numerous cases [with] logical buses, but typically physically wired as a star [because it] facilitates physically maintaining the cable planned, but the actual flow of information can be a bus over a star [or] can be a ring over a star."); see also App. Br. at 21-22 ("Although none of the intrinsic evidence discusses star wired networks, such networks are well known in the art In point of fact, the physical topology of the fast ethernet is a type of star network.") (emphasis added).

[2] There appears to us no distinction between the terms "data frame," "frames of data," and "frames containing data." We do not understand the parties to disagree significantly with this assessment.