United States Court of Appeals for the Federal Circuit

IN RE KATZ INTERACTIVE CALL PROCESSING PATENT LITIGATION

RONALD A. KATZ TECHNOLOGY LICENSING LP,
Plaintiff-Appellant,

v.

AMERICAN AIRLINES, INC.,
Defendant-Appellee,

and

FEDEX CORPORATE SERVICES, INC., FEDEX CORPORATION,
FEDEX CUSTOMER INFORMATION SERVICES, INC.,
AND FEDERAL EXPRESS CORPORATION,
Defendants-Appellees,

and

DHL EXPRESS (USA), INC., DHL HOLDINGS (USA), INC.,
AND SKY COURIER, INC.,
Defendants-Appellees,

and

U.S. BANCORP AND U.S. BANK NATIONAL ASSOCIATION,
Defendants-Appellees,

and

TIME WARNER CABLE, INC., TIME WARNER ENTERTAINMENT COMPANY, L.P., TIME WARNER NY CABLE LLC, AOL, LLC, COMPUSERVE INTERACTIVE SERVICES, INC., NETSCAPE COMMUNICATIONS CORP., CHARTER COMMUNICATIONS ENTERTAINMENT I LLC, CHARTER COMMUNICATIONS HOLDING COMPANY LLC, CHARTER COMMUNICATIONS OPERATING LLC, AND CHARTER COMMUNICATIONS, INC.,
Defendants,

and

CSC HOLDINGS, INC. (NOW KNOWN AS CSC HOLDINGS, LLC), CABLEVISION SYSTEMS CORPORATION, CABLEVISION SYSTEMS NEW YORK CITY CORPORATION, CABLEVISION OF BROOKHAVEN, INC., CABLEVISION OF CONNECTICUT CORPORATION, CABLEVISION OF HUDSON COUNTY, INC., CABLEVISION OF LITCHFIELD, INC., CABLEVISION OF MONMOUTH, INC., CABLEVISION OF NEW JERSEY, INC., CABLEVISION OF OAKLAND LLC, AND CABLEVISION OF ROCKLAND/RAMAPO LLC,
Defendants-Appellees,

and

TDS METROCOM LLC, TDS TELECOMMUNICATIONS CORPORATION, AND UNITED STATES CELLULAR CORPORATION,
Defendants.

2009-1450, -1451, -1452, -1468, -1469, 2010-1017

Appeals from the United States District Court for the Central District of California in case nos. 2:07-ML-1816, 07-CV-2192, 07-CV-2196, 07-CV-2360, and 07-CV-2134, Judge R. Gary Klausner.

Decided: February 18, 2011

FRANK V. PIETRANTONIO and JONATHAN G. GRAVES, Cooley Goodward Kronish LLP, of Reston, Virginia, argued for plaintiff-appellant. With them on the brief were NATHAN K. CUMMINGS; STEPHEN C. NEAL and LORI R.E. PLOEGER, of Palo Alto, California.

MARK A. PERRY, Gibson, Dunn & Crutcher LLP, of Washington, DC, argued for all defendants-appellees. With him on the brief were JOSH A. KEVITT, of New York, New York and David A. Segal, of Irvine, California; and Adam T. Bernstein, CSC Holding, LLC, of Bethpage, New York, for CSC Holding, et al.

MIKE MCKOOL, JR., McKool Smith, P.C., of Dallas, Texas, for defendant-appellee American Airlines, Inc. With him on the brief were PETER J. AYERS and JOEL L. THOLLANDER, of Austin, Texas.

KARAN F. STOLL, Finnegan, Henderson, Farabow, Garrett & Dunner, LLP, of Washington, DC, for defendants-appellees FedEx Corporation Services, Inc., et al. With her on the brief were JASON W. MELVIN; and JEFFREY A. BERKOWITZ and JAMES J. BOYLE, of Reston, Virginia; and E. CHRIS CHERRY, FedEx Corporation, of Memphis, Tennessee.

CHRISTOPHER S. RUHLAND, Orrick, Herrington & Sutcliffe LLP, of Los Angeles, California, for defendant-appellee DHL Express (USA), Inc. With him on the brief were EDWIN V. WOODSOME, JR.; and MATTHEW H. POPPE, of Menlo Park, California, and MARK J. SHEAN, of Irvine, California.

JONATHAN R. SPIVEY, Foley & Lardner LLP, of Chicago, Illinois, for defendants-appellees U.S. Bancorp et al. With him on the brief were GREGORY S. NORROD and SCOTT R. KASPAR; and GEORGE E. QUILLIN, of Washington, DC.

Before NEWMAN, LOURIE, and BRYSON, *Circuit Judges*.

BRYSON, *Circuit Judge*.

In this multi-district litigation patent case, the plaintiff Ronald A. Katz Technology Licensing LP ("Katz") appeals from final judgments entered by the United States District Court for the Central District of California in a group of consolidated cases. The judgments held numerous claims from Katz's patent portfolio either invalid or not infringed. We affirm in part, vacate in part, and remand.

I

Katz owns a number of patents on interactive call processing systems and call conferencing systems. The 14 patents that Katz asserts in this appeal all relate to interactive call processing systems. The patents fall into four groups; the patents in each group share a common specification.

The first group of patents, referred to as the "Statistical Interface" group, covers a telephonic interface system for acquiring data from a large group of callers and using

that data to identify some subset of the group.[1] *See, e.g.*, '863 patent, col. 1, ll. 52-64. The claimed system can be used in connection with a variety of telephone-based operations, such as "an auction sale, a contest, a lottery, a poll, a merchandising operation, a game, and so on." '863 patent, col. 2, ll. 18-19.

The second group of patents, referred to as the "Conditional Interface Plus" group, covers "a telephonic-computer interface system" that can handle a large number of calls and direct them either to live-operator stations or to computer-operated stations.[2] '285 patent, col. 2, ll. 3-8. The claimed system is designed to avoid the "sometimes complex and burdensome" interfaces presented to callers that can result in ineffective screening, misdirection of calls, and cumbersome delay. *Id.*, col. 1, ll. 60-62.

The third group of patents, referred to as the "Dual Call Mode" group, covers a telephone call processing system for receiving and processing calls relating to a game or contest format, in which the system has means for neutralizing the advantages in the game or contest

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[1] That group of patents includes U.S. Patent No. 5,235,309 ("the '309 patent"), U.S. Patent No. 5,561,707 ("the '707 patent"), U.S. Patent No. 5,684,863 ("the '863 patent"), U.S. Patent No. 5,815,551 ("the '551 patent"), U.S. Patent No. 5,898,762 ("the '762 patent"), U.S. Patent No. 6,035,021 ("the '021 patent"), U.S. Patent No. 6,148,065 ("the '065 patent"), U.S. Patent No. 6,292,547 ("the '547 patent"), and U.S. Patent No. 6,678,360 ("the '360 patent"). The '309, '762, and '021 patents are discussed in Katz's brief, but no claims from those patents have been selected against any of the appellees. Those patents are therefore not at issue in this appeal. *See infra* Part VIII.

[2] That group of patents includes U.S. Patent No. 5,351,285 ("the '285 patent") and U.S. Patent No. 5,917,893 ("the '893 patent").

that would otherwise be obtained by repeat callers.[3] '120 patent, col. 2, ll. 62-66. The preferred embodiment described in those patents uses different procedures for qualifying the caller to participate in the game depending on whether the caller has dialed an 800 number, a 900 number, or an area code number. *Id.*, fig. 2.

The last patent, U.S. Patent No. 6,335,965 ("the '965 patent"), referred to as the "Voice-Data" patent, claims a telephone-computer interface system that is designed to receive and identify both digital signals and voice signals from callers. '965 patent, col. 2, ll. 20-23, 28-29

In 1997, Katz asserted many of the same patents in an action brought against AT&T Corporation in the United States District Court for the Eastern District of Pennsylvania. The parties settled that action. In 2001, Verizon Communications Inc. filed a declaratory judgment action against Katz in the United States District Court for the Central District of California. The parties settled that action after claim construction and summary judgment rulings. Between 2005 and 2006, Katz filed 25 separate actions in federal district courts in the Eastern District of Texas and the District of Delaware. The Judicial Panel on Multidistrict Litigation transferred all the cases to the Central District of California for coordinated pretrial proceedings before Judge R. Gary Klausner, who had presided over Verizon's declaratory judgment suit. Across all 25 actions, Katz asserted a total of 1,975 claims from 31 patents against 165 defendants in 50 groups of related corporate entities ("defendant groups"). Katz has subsequently filed 28 additional actions that have also

[3] That group of patents includes U.S. Patent No. 5,974,120 ("the '120 patent") and U.S. Patent No. 6,434,223 ("the '223 patent").

been assigned to Judge Klausner. This appeal arises from the initial 25 actions.

Several groups of defendants asked the district court to limit the number of asserted claims to be addressed in the litigation. One group proposed that Katz initially select 40 claims per action and then narrow the number of selected claims to 20 per action after discovery. Katz countered with a broader proposal to initially select 50 claims per defendant group and then narrow the number of selected claims to 20 per defendant group after discovery. Katz did not question the need to limit the number of claims in order to make the case manageable.

Choosing a middle ground between the two proposals, the district court ordered Katz initially to select no more than 40 claims per defendant group, and after discovery to narrow the number of selected claims to 16 per defendant group. The court further directed that the total number of claims to be asserted against all defendants could not exceed 64 (eight claims for each unique specification including four specifications not at issue in this appeal). However, the court added a proviso that the limitations on the numbers of claims were not immutable. The proviso permitted Katz to add new claims if they "raise[d] issues of infringement/validity that [were] not duplicative" of previously selected claims. Katz added new claims to exceed a total of 64 across all the actions, but the number of claims did not exceed 16 per defendant group.[4]

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[4] Katz selected 16 claims to assert against appellees U.S. Bancorp and U.S. Bank National Association ("U.S. Bank"). From the Statistical Interface group, Katz selected claims 43, 49, 96, 98, and 99 of the '863 patent; claims 21 and 33 of the '551 patent; claims 13 and 86 of the '360 patent; and claim 13 of the '065 patent. From the Conditional Interface Plus group, Katz selected claims 19, 49, and 71 of the '285 patent. From the Dual Call Mode

group, Katz chose claim 5 of the '223 patent. And from the Voice-Data patent, Katz selected claims 61 and 66.

Katz selected 16 claims to assert against appellees DHL Express (USA), Inc., and its associated parties ("DHL"). From the Statistical Interface group, Katz selected claims 19 and 33 of the '551 patent; claims 14 and 36 of the '360 patent; claim 98 of the '863 patent; and claim 13 of the '065 patent. From the Conditional Interface Plus group, Katz selected claim 61 of the '285 patent and claims 1 and 2 of the '893 patent. From the Dual Call Mode group, Katz chose claims 34, 57, and 63 of the '120 patent. And from the Voice-Data patent, Katz selected claims 31, 35, 61, and 66.

Katz selected 11 claims to assert against appellee American Airlines, Inc. From the Statistical Interface group, Katz selected claims 43 and 98 of the '863 patent; claims 19 and 21 of the '551 patent; claims 14 and 86 of the '360 patent; claim 85 of the '707 patent; and claim 13 of the '065 patent. From the Dual Call Mode group, Katz chose claims 34 and 67 of the '120 patent. And from the Voice-Data patent, Katz selected claim 53.

Katz selected 15 claims to assert against appellees Cablevision Systems Corporation and its associated parties. From the Statistical Interface group, Katz selected claim 11 of the '547 patent; claim 33 of the '551 patent; claims 14 and 36 of the '360 patent; claim 69 of the '707 patent; and claim 13 of the '065 patent. From the Conditional Interface Plus group, Katz selected claims 1 and 61 of the '285 patent as well as claims 2 and 83 of the '893 patent. From the Dual Call Mode group, Katz chose claim 57 of the '120 patent and claim 2 of U.S. Patent No. 6,512,415, which is not at issue on appeal. And from the Voice-Data patent, Katz selected claims 31, 61, and 66.

Katz selected 15 claims to assert against appellee FedEx Corporation and its associated defendants. From the Statistical Interface group, Katz selected claim 18 of the '547 patent; claim 19 of the '551 patent; claims 18 and 86 of the '360 patent; claim 85 of the '707 patent; claim 43 of the '863 patent; and claim 13 of the '065 patent. From the Conditional Interface Plus group, Katz selected claims 19 and 49 of the '285 patent and claims 2 and 83 of the '893 patent. From the Dual Call Mode group, Katz chose

Instead of selecting additional claims and seeking to show that those claims raised non-duplicative issues of infringement or validity, Katz moved the court to sever and stay the non-selected claims. Katz contended that the court's requirement that it select particular claims violated its due process rights because the court's order could result in decisions having a preclusive effect on non-selected claims regardless of whether those claims presented distinct issues of invalidity or infringement. The court denied Katz's motion. The court held that Katz's rights under the unselected claims were protected by the proviso that Katz could add new claims if it could show that the new claims raised non-duplicative issues of validity or infringement.

The defendants then jointly moved for summary judgment on the issues of anticipation, obviousness, written description, and indefiniteness. The defendants also moved individually for summary judgment on case-specific grounds. In response to those motions, the district court held all the claims selected against the appellees to be either invalid or not infringed by the appellees' accused devices. The court then entered final judgments in favor of the appellees. The related actions against other defendants are still pending in the district court.

II

Katz appeals the district court's decision not to sever and stay the unselected claims. Katz contends that by entering final judgments in these cases without severing and staying the unselected claims, the district court divested Katz of its rights in the unselected claims without due process. Katz argues that the court's judgments may have preclusive effects in any subsequent actions on

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claims 34 and 67 of the '120 patent. And from the Voice-Data patent, Katz selected claims 31 and 53.

the unselected claims and that due process requires that Katz be allowed to litigate the unselected claims either in this case or in subsequent actions.[5] Katz also contends the district court assumed its claims were duplicative, in violation of the claim-differentiation doctrine and the independent presumption of claim validity from 35 U.S.C. § 282.

A

We reject Katz's due process argument. Katz has not shown that the claim selection procedure the district court employed was inadequate to protect Katz's rights with respect to the unasserted claims.[6] To make out a due process claim, Katz must demonstrate that the district court's claim selection procedure risked erroneously depriving it of its rights and that the risk outweighed the added costs associated with a substitute procedure. *See Mathews v. Eldridge*, 424 U.S. 319, 335 (1976).

Katz argues that it was improper for the district court to impose any burden on it to make a showing that any of the unselected claims raised issues of infringement or invalidity that were not duplicative of the issues raised by the selected claims. According to Katz, the court should have required the appellees to bear the burden to show that issues were duplicative; absent such a showing, Katz contends, the unasserted claims should have been expressly excluded from the judgments entered in this case.

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[5] Although we accept Katz's assertion that the final judgments could have preclusive effects in later actions brought against the same or other parties, the precise effect of the judgments in this case will necessarily have to be decided in any such later actions that may be brought.

[6] We assume without deciding that Katz has a separate property right in each claim of each asserted patent.

Katz supports its argument by pointing to collateral estoppel cases in which a second defendant has borne the burden of demonstrating that the asserted claims lacked patentably significant additions to claims previously found to be invalid when asserted against a first defendant. *See Bourns, Inc. v. United States*, 537 F.2d 486, 493 n.6 (Ct. Cl. 1976); *Medinol Ltd. v. Guidant Corp.*, 341 F. Supp. 2d 301, 314 (S.D.N.Y. 2004). Because other defendants in future suits would bear the burden of showing that any newly asserted claims were barred by the district court's judgment as a matter of issue preclusion, Katz argues by analogy that the appellees should have been required to show that the issues presented by the claims that Katz did not select in this case were identical to the issues presented by the selected claims. Burden allocation, however, is a tool "intended progressively to sharpen the inquiry into the elusive factual question[s]" in a case. *See Tex. Dep't of Cmty. Affairs v. Burdine*, 450 U.S. 248, 255 n.8 (1981). When the claimant is in the best position to narrow the dispute, allocating the production burden to the claimant will benefit the decision-making process and therefore will not offend due process unless the burden allocation unfairly prejudices the claimant's opportunity to present its claim.

Katz has failed to demonstrate that the allocation of burdens in the claim selection procedure adopted by the district court unfairly prejudiced it by creating a significant risk that Katz would be erroneously deprived of property rights in unselected claims. The district court noted that by providing examples of duplicative claims and pointing out the common genealogy of Katz's patents and the terminal disclaimers in almost all of them, the defendants had made "a convincing showing that many of

the claims are duplicative."[7] Because neither side had provided an analysis of all of the claims, the court recognized the possibility that the limitations on the number of claims to be asserted might be unduly restrictive. The court therefore provided that more claims could be added if Katz could show that the additional claims presented unique issues. Under the circumstances of this case, we conclude that the district court acted reasonably in concluding that it would be more efficient to require Katz to point out those unselected claims that raised separate issues of infringement and invalidity rather than requiring the defendants to prove that all of the unselected claims were duplicative.

Katz made no effort to identify any such claims. Instead, it complained that the number of claims the court allowed was insufficient, and it moved to add new claims exceeding the 64-claim limit across all actions. The district court noted that Katz did not "attempt to prove that the specific newly asserted claims raise[d] new infringement/validity issues." Instead, the court observed, Katz merely asserted "the generalized notion that 64 was too few [claims] for the number of accused services at issue." Because Katz did not file a motion to add claims with the requisite showing of need, the court concluded that Katz "cannot legitimately complain that it did not have a meaningful opportunity to be heard on those claims." Even absent a showing of uniqueness, the court allowed Katz to add new claims that were closely

[7] Although Katz objects that the court examined only a small number of claims before making that finding, the court also based its finding on the common genealogy of Katz's patents. Because Katz has thousands of claims stemming from only eight unique specifications with a common genealogy, we cannot conclude that district court erred in finding that many of Katz's claims are duplicative based on the evidence before it and Katz's refusal to make a counter-showing.

related to claims it had already selected.[8] In the end, Katz selected a total of almost 100 claims to be addressed in the consolidated cases. Nonetheless, Katz moved to sever and stay all of the unselected claims. The district court rejected that motion, explaining:

> The motion fails to identify any claims that are substantially different from the claims it is currently asserting. It does not identify any services or products that it could accuse of infringing non-selected claims, let alone, show that these services do not present the same issues for selected claims. Plaintiff's motion merely states that an order limiting it to 16 claims per defendant group violates due process. However, due process is not merely a theoretical concern, the plaintiff must be able to show that it has lost some tangible right.

We agree with the district court's due process analysis. Based on its initial determination that the asserted patents contained many duplicative claims, it was both efficient and fair to require Katz to identify those unasserted claims that, in Katz's view, raised separate legal issues from those raised by the asserted claims. In light of Katz's failure to make, or even attempt to make, any such showing, it was reasonable for the district court to

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[8] Per defendant group, the court gave Katz the unlimited right to substitute any claim for a previously selected claim that was dependent on the newly selected claim. In addition, the court permitted Katz to make as many as three substitutions of claims per defendant group, choosing those claims from among the previously selected 40 claims, from any claims from which the previously selected 40 claims depended, or from any claims that depended from the previously selected 40 claims. Finally, the court permitted Katz one substitution of any claim with any claim already identified in Katz's motion to add new claims.

deny Katz's motion to sever and stay the disposition of all of the unselected claims.

In approving the district court's procedure, we do not suggest that a district court's claim selection decisions in a complex case such as this one are unreviewable. Katz could have sought to demonstrate that some of its unselected claims presented unique issues as to liability or damages. If, notwithstanding such a showing, the district court had refused to permit Katz to add those specified claims, that decision would be subject to review and reversal.[9] As noted, however, the problem with Katz's position is that Katz made no effort to make such a showing with respect to any of the unselected claims. Instead, Katz chose to make the "all or nothing" argument that the entire claim selection process was flawed from the start and that it is impermissible to give the judgments effect as to the unselected claims regardless of Katz's failure to make any showing as to the uniqueness of any of those claims. That sort of global claim of impropriety is unpersuasive. In complex cases, and particularly in multidistrict litigation cases, the district court "needs to have broad discretion to administer the proceeding." *In re Phenylpropanolamine (PPA) Prods. Liab. Litig.*, 460 F.3d 1217, 1232 (9th Cir. 2006). Given the district court's need to manage the cases before it and the "strong public interest in the finality of judgments in patent litigation," *Cardinal Chem. Co. v. Morton Int'l, Inc.* 508 U.S. 83, 100 (1993), we cannot adopt Katz's broad proposition. And, not having made a record reflecting that the court erred

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[9] It is also conceivable that a claim selection order could come too early in the discovery process, denying the plaintiff the opportunity to determine whether particular claims might raise separate issues of infringement or invalidity in light of the defendants' accused products and proposed defenses. Katz makes no such argument in this appeal.

in its disposition of particular claims, Katz cannot point to specific errors by the court in the administration of the claim selection scheme that the court adopted.

B

Turning to Katz's other arguments, we hold that the court did not violate the statutory presumption that each claim is independently presumed valid, *see* 35 U.S.C. § 282, or the "rebuttable presumption that different claims are of different scope," *Amgen Inc. v. Hoechst Marion Roussel, Inc.*, 314 F.3d 1313, 1326 (Fed. Cir. 2003). While different claims are presumed to be of different scope, that does not mean that they necessarily present different questions of validity or infringement. And the court only required Katz to demonstrate that new claims presented unique questions of validity or infringement. The court explained that with respect to infringement, Katz "should be prepared to show that a non-infringement defense raised by a specific defendant group to a currently asserted claim does not apply in substantially the same manner to a newly asserted claim." With respect to validity, the court ordered that Katz "should be prepared to show that the defendants have raised serious issues of validity on a currently asserted claim, but that the same defense does not affect the newly asserted claim in substantially the same way." Although the court required Katz to show that additional claims presented unique questions for the case, the court did not place a burden on Katz to demonstrate that its claims covered distinct subject matter.

III

The district court granted summary judgment of indefiniteness as to a number of the asserted claims under two different theories. With respect to certain claims that were drafted in the means-plus-function format pre-

scribed by 35 U.S.C. § 112 ¶ 6, the court concluded that the claims were invalid for indefiniteness because the only corresponding structure disclosed in the specification was a general purpose computer and the specification did not disclose an algorithm by which the general purpose computer performed the recited function. We affirm that ruling in part, vacate it in part, and remand for further proceedings. The district court also invalidated several claims as indefinite for claiming both an apparatus and a method of using that apparatus. We affirm that ruling.

A

Katz appeals the district court's ruling that claims directed to a "means for processing" were indefinite because the claims failed to satisfy the requirements of section 112, paragraph 6. In particular, the court held that the claims failed to disclose structure corresponding to the recited function in the form of a computer algorithm. On that ground, the court invalidated a number of claims from the Statistical Interface and Conditional Interface Plus groups. The invalidated claims are claims 96, 98, and 99 of the '863 patent, which recite a "means for processing at least certain of said answer data signals"; claims 11 and 18 of the '547 patent, which recite an "analysis structure for receiving and processing said caller data signals"; claim 19 of the '551 patent, which recites an "analysis structure connected to the record memory for processing at least certain of the data relating to certain individual callers subject to qualification by the qualification structure"; claims 21 and 33 of the '551 patent and claim 13 of the '065 patent, which recite a "processing means . . . for receiving customer number data entered by a caller and for storing the customer number data . . . and based on a condition coupling an incoming call to the operator terminal, the processing means visually displaying the customer number data"; and claim 61 of the '285

patent, which recites a "means for processing coupled to said forwarding means for processing caller information data entered by an operator." The court invalidated those claims pursuant to the analysis set forth in *WMS Gaming, Inc. v. International Game Technology*, 184 F.3d 1339 (Fed. Cir. 1999), and *Aristocrat Technologies Australia Pty Ltd v. International Game Technology*, 521 F.3d 1328 (Fed. Cir. 2008), because the specifications of each of the patents at issue disclosed only general purpose processors and did not disclose the algorithms that those processors used to perform the recited functions.

In *WMS Gaming*, this court addressed a means-plus-function limitation in which the recited function was implemented by a general purpose computer. The patent claimed slot machines having a "means for assigning a plurality of numbers representing" the angular positions of each slot reel. 184 F.3d at 1346. The parties agreed that a computer controlled the means-plus-function limitation, and the district court construed the limitation to cover "any table, formula, or algorithm" that might be used to perform the function of assigning numbers representing the angular positions of the reel. This court rejected that interpretation and construed the limitation to cover only the algorithm disclosed in the specification. The court did so because it construed the corresponding structure not to be a general purpose computer, but rather to be a special purpose computer programmed to perform the disclosed algorithm. *Id.* at 1348-49, citing *In re Alappat*, 33 F.3d 1526, 1545 (Fed. Cir. 1994) (en banc).

The subsequent case of *Harris Corp. v. Ericsson Inc.*, 417 F.3d 1241 (Fed. Cir. 2005), involved a signal processing patent claiming a "time domain processing means" for simulating the dispersive effect of media through which signals travel. *Id.* at 1245-46. The district court in that case held that the structure corresponding to that function was a "symbol processor." *Id.* at 1249. This court

reversed. The court noted that a "computer-implemented means-plus-function term is limited to the corresponding structure disclosed in the specification and equivalents thereof, and the corresponding structure is the algorithm." *Id.* at 1253. The court then held that the structure corresponding to the "time domain processing means" could not be merely a "symbol processor," because the "symbol processor" did not incorporate any disclosed algorithm. *Id.* at 1254.

In the *Aristocrat* case, decided several years later, the court applied *WMS Gaming* and *Harris* to a patent that failed to disclose the algorithm that the recited computer used to perform a computer-implemented function. The patent at issue in *Aristocrat* covered a slot machine with a "control means" to control displayed images, to define a set of predetermined arrangements for a given game depending on the player's selections, and to pay a prize when a predetermined arrangement of symbols was displayed. *Aristocrat*, 512 F.3d at 1330-31. The only disclosed structure was a standard microprocessor-based gaming machine with "appropriate programming." *Id.* This court affirmed the district court's ruling that the claims were indefinite due to the lack of structure corresponding to the recited functions. The court noted that the algorithm by which the functions are performed must be disclosed so as "to avoid pure functional claiming." *Id.* at 1333.

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Several of Katz's claims are clearly indefinite under the principles of *WMS Gaming*, *Aristocrat*, and *Harris*. Claims 21 and 33 of the '551 patent and claim 13 of the '065 patent contain a means-plus-function limitation that recites a "processing means . . . for receiving customer number data entered by a caller and for storing the customer number data . . . and based on a condition coupling

an incoming call to the operator terminal, the processing means visually displaying the customer number data." The '551 and '065 patents, however, do not disclose an algorithm that corresponds to the "based on a condition coupling an incoming call to the operator terminal" function.

Computers can be programmed to conditionally couple calls in many ways. Without any disclosure as to the way Katz's invention conditionally couples calls, the public is left to guess whether the claims cover only coupling based on particular system conditions, such as the availability of an operator, or are broad enough to cover any coupling in conjunction with an if-then statement in source code. Katz's claims therefore fail to fulfill the "public notice function" of 35 U.S.C. § 112 ¶ 2 by "particularly pointing out and distinctly claiming" the invention. *See Praxair, Inc. v. ATMI, Inc.*, 543 F.3d 1306, 1319 (Fed. Cir. 2008). And by claiming a processor programmed to perform a specialized function without disclosing the internal structure of that processor in the form of an algorithm, Katz's claims exhibit the "overbreadth inherent in open-ended functional claims," *Halliburton Energy Servs. v. M-I LLC*, 514 F.3d 1244, 1256 n.7 (Fed. Cir. 2008), in violation of the limits Congress placed on means-plus-function claims in section 112, paragraph 6.[10] Because of the absence of the requisite structure, we affirm the district court's indefiniteness ruling as to claims 21 and 33 of the '551 patent and claim 13 of the '065 patent.

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[10] In an effort to point to structure corresponding to the function recited in those claims, Katz points to communication lines connecting the processor to an "interface terminal." Those lines constitute the structure by which the processor sends calls to the operator terminal, but merely referring to those communication lines does not describe the algorithm by which a processor tests a condition and couples an incoming call to a terminal depending on the outcome of that test.

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We reach a different conclusion with respect to the district court's analysis of claims 96, 98, and 99 of the '863 patent, claims 11 and 18 of the '547 patent, claim 19 of the '551 patent, and claim 61 of the '285 patent. As to those claims, we conclude that the district court interpreted the principles of *WMS Gaming*, *Aristocrat*, and *Harris* too broadly, so we vacate the court's indefiniteness ruling and remand to the district court for claim construction and application of the correct rule.

The court interpreted those cases to require that "the specification . . . disclose an algorithm for [any] recited function" that is performed solely or predominantly by a general purpose computer. The appellees characterize that rule as applying to any function that is "linked" to a general purpose computer. But that interpretation of our prior cases is too broad. Those cases involved specific functions that would need to be implemented by programming a general purpose computer to convert it into a special purpose computer capable of performing those specified functions. *See, e.g.*, *Aristocrat*, 521 F.3d at 1333-34; *Harris*, 417 F.3d at 1253; *WMS Gaming*, 184 F.3d at 1349. By contrast, in the seven claims identified above, Katz has not claimed a specific function performed by a special purpose computer, but has simply recited the claimed functions of "processing," "receiving," and "storing." Absent a possible narrower construction of the terms "processing," "receiving," and "storing," discussed below, those functions can be achieved by any general purpose computer without special programming.[11] As

[11] In substance, claiming "means for processing," "receiving," and "storing" may simply claim a general purpose computer, although in means-plus-function terms. While broadly claiming in that manner makes it easier to satisfy the statutory requirement of "particularly

such, it was not necessary to disclose more structure than the general purpose processor that performs those functions. Those seven claims do not run afoul of the rule against purely functional claiming, because the functions of "processing," "receiving," and "storing" are coextensive with the structure disclosed, i.e., a general purpose processor.

The appellees contend that the district court's broad rule of indefiniteness is supported by language from *Net MoneyIN, Inc. v. VeriSign, Inc.*, 545 F.3d 1359 (Fed. Cir. 2008). In that case, this court stated that "a means-plus-function claim element for which the only disclosed structure is a general purpose computer is invalid if the specification fails to disclose an algorithm for performing the claimed function." *Id.* at 1367, citing *WMS Gaming*, 184 F.3d at 1337-38. When viewed in context, it is clear that the quoted language applied only to computer-implemented means-plus-function claims in which the computer would be specially programmed to perform the recited function. As authority, the court cited *WMS Gaming*, which was limited to a computer implementing a specific function. And the claim at issue in *Net MoneyIN* recited a particular function not disclosed simply by a reference to a general purpose computer. That claim involved a credit card authorization system with a "means for generating an authorization indicia in response to queries containing a customer account number and amount." *Net MoneyIN*, 545 F.3d at 1365. The only recited structure for performing that function was a "bank computer." The patentee contended that the recited structure was sufficient because a person of ordinary skill in the art would understand that a bank computer com-

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pointing out and distinctly claiming the subject matter" of the claims, 35 U.S.C. § 112 ¶ 2, it increases the vulnerability of the claims to possible invalidity on other grounds.

pares account data and transaction amount data to determine if credit is available. This court rejected that argument on the ground that the specification did not disclose an algorithm to perform the specified function, even though a person of ordinary skill in the art might have been able to devise one. *Net MoneyIN*, therefore, does not support a broader principle of indefiniteness than was applied in this court's previous cases.

At oral argument, the parties disagreed about what the claims meant by "processing." Katz contended that "processing" meant nothing more specific than "processing." The appellees contended that "processing" was limited to the specific functions disclosed in the specifications. The district court's construction of "means for processing" in related patents as "processing calls in an interface format" does not resolve that dispute. Because the parties have not briefed the construction of the term "processing" as used in the seven claims referred to above, we leave it to the district court to construe that term, along with the terms "receiving" and "storing." Based on its construction, the district court can then determine whether the functions recited in those seven contested claims can be performed by a general purpose processor or, instead, constitute specific computer-implemented functions as to which corresponding algorithms must be disclosed.

3

As an alternative argument for vacating the court's indefiniteness ruling, Katz contends that the corresponding structure for the means-plus-function terms is not limited to the general purpose microprocessor 92, but also includes the interface 20, disclosed in the common specification of the Statistical Interface patents. Katz is correct that the interface 20 may perform analysis on data, *see* '863 patent, col. 4, ll. 52-53, but that is beside the point. If

a function's corresponding structure is a type of computer or processor, indefiniteness analysis does not turn on the name of the structure that does the processing. *See, e.g.*, *Net MoneyIN*, 545 F.3d at 1366-67 (rejecting the argument that persons of skill in the art would understand how a "bank computer" would be programmed); *Harris*, 417 F.3d at 1254 (rejecting the construction of "symbol processor" as corresponding structure because it did not incorporate the disclosed algorithm). The key inquiry is whether one of ordinary skill in the art would understand the patent to disclose structure that sufficiently corresponds to the claimed function, which in the case of a specific function implemented on a general purpose computer requires an algorithm. *See Aristocrat*, 521 F.3d at 1337, citing *Med. Instrumentation & Diagnostics Corp. v. Elekta AB*, 344 F.3d 1205, 1212 (Fed. Cir. 2003). As to claims 21 and 33 of the '551 patent and claim 13 of the '065 patent, which recite the "based on a condition coupling an incoming call to the operator terminal" limitation, Katz has not provided sufficient evidence that a person of ordinary skill would understand that interface 20 discloses a particular algorithm for conditionally coupling calls.[12] The patent discloses that interface 20 has "switching mechanisms," but that is an insufficient

[12] Because the display terminals are the corresponding structure for the function of "visually displaying the customer number data," one of the recited functions in the "processing means" limitation of these claims, Katz argues that the specification need not set forth an algorithm for performing the other functions recited in the limitation. Katz contends that by disclosing the display terminals the Statistical Interface specification has disclosed "more than" a general purpose computer and thereby has avoided "pure functional claiming." *Aristocrat*, 521 F.3d at 1333. Although the display terminals are special purpose machines, Katz has provided no evidence that they include structure capable of conditionally coupling calls.

description of an algorithm for conditionally coupling calls. As to the other claims, it may be necessary for the district court to address whether a person of ordinary skill in the art would understand interface 20 to sufficiently disclose structure that performs pertinent functions, depending on the outcome of the court's construction of the "processing," "receiving," and "storing" functions recited in those claims.

B

The district court held that Statistical Interface claims 1, 2, and 83 of the '893 patent are indefinite under *IPXL Holdings, L.L.C. v. Amazon.com, Inc.*, 430 F.3d 1377, 1384 (Fed. Cir. 2005), because they claim both an apparatus and a method of use. In *IPXL*, this court addressed a claim that covered a system with "an input means" and required a user to use the input means. This court held that the claim was indefinite because it was unclear "whether infringement . . . occurs when one creates a system that allows the user [to use the input means], or whether infringement occurs when the user actually uses the input means." *Id.*

Claims 1, 2, and 83 of the '893 patent cover a system with an "interface means for providing automated voice messages . . . to certain of said individual callers, wherein said certain of said individual callers digitally enter data." The district court found "no meaningful distinction" between those claims and the claim at issue in *IPXL*.

Katz seeks to distinguish *IPXL* on the ground that the term "wherein" does not signify a method step but instead defines a functional capability. We disagree and uphold the district court's ruling. Like the language used in the claim at issue in *IPXL* ("wherein . . . the user uses"), the language used in Katz's claims ("wherein . . . callers digitally enter data" and "wherein . . . callers provide . . . data") is directed to user actions, not system capabilities.

In the alternative, Katz contends that this court narrowed *IPXL* in the subsequent decision in *Microprocessor Enhancement Corp. v. Texas Instruments Inc.*, 520 F.3d 1367, 1374-75 (Fed. Cir. 2008). That case dealt with a method claim that recited structural elements. The claim took the form of a "method of executing instructions in a pipelined processor comprising: [structural limitations of the pipelined processor]; the method further comprising: [method steps implemented in the pipelined processor]." *Id.* at 1374. The court in *Microprocessor* distinguished *IPXL* because the method claim in *Microprocessor* did not create any confusion as to when the claim was directly infringed; direct infringement occurred upon practicing the claimed method in a processor with the required structural limitations. Simply making or selling a processor having that structure would not have infringed. Katz's claims, however, create confusion as to when direct infringement occurs because they are directed both to systems and to actions performed by "individual callers." Katz's claims therefore fall squarely within the rationale of *IPXL* and are indefinite.

IV

The district court invalidated several claims from the Statistical Interface patents and the Dual Call Mode patents for failing to satisfy the written description requirement of 35 U.S.C. § 112 ¶ 1.

Written description is a factual inquiry. *Ariad Pharm., Inc. v. Eli Lilly & Co.*, 598 F.3d 1336, 1351 (Fed. Cir. 2010) (en banc). "[T]he test requires an objective inquiry into the four corners of the specification from the perspective of a person of ordinary skill in the art. Based on that inquiry, the specification must describe an invention understandable to that skilled artisan and show that the inventor actually invented the invention claimed." *Id.* The purpose of the written description requirement "is to

ensure that the scope of the right to exclude, as set forth in the claims, does not overreach the scope of the inventor's contribution to the field of art as described in the patent specification." *Reiffin v. Microsoft Corp.*, 214 F.3d 1342, 1345 (Fed. Cir. 2000).

A

From the Statistical Interface group of patents, the district court invalidated method claims 13, 14, 36, and 86 of the '360 patent for claiming the step of "visually displaying customer number data" without describing that step in the specification.[13] Those claims also require the step of "receiving customer number data entered by a caller." Thus, the district court concluded that the specification had to describe the visual display of customer number data entered by a caller. The district court read the specification as lacking such a description and held the claims invalid for that reason.

Katz contends that the district court erred by considering the second step, "receiving customer number data entered by a caller," when the defendants identified the first step as the only disputed limitation. Katz claims that by doing so, the court deprived it of the opportunity to advance claim construction arguments, demonstrate specification support, or proffer expert testimony. We disagree. That the defendants did not challenge certain limitations does not make those limitations irrelevant for understanding the scope of the claims. *See ACTV, Inc. v. Walt Disney Co.*, 346 F.3d 1082, 1088 (Fed. Cir. 2003) ("[T]he context of the surrounding words of the claim also

[13] The district court also held claim 13 of the '065 patent and claims 21 and 33 of the '551 patent invalid for a lack of written description. Those patents are similar to the '360 patent, but we have affirmed the district court's indefiniteness ruling for those claims, so we do not discuss them further here.

must be considered in determining the ordinary and customary meaning of those terms."). The district court did not hold that the specification fails to describe the step of "receiving customer number data entered by a caller." Instead, the court held that the specification fails to describe the step of "visually displaying customer number data" because the only descriptions of visual display in the specification involve information that was not entered by customers. In doing so, the district court construed the claims, but that was entirely permissible, as claim construction is inherent in any written description analysis.

We reject Katz's contention that the district court's claim constructions denied it the opportunity to demonstrate specification support or proffer expert testimony. It should have been clear to Katz that the construction of the claims was important to the written description analysis. Moreover, the defendants specifically identified very similar language from claim 75 of the same patent (the '360 patent) as failing to satisfy the written description requirement. The similarity of that language, "identification data entered by the callers," put Katz on notice of the deficiency in the specification, i.e., the lack of disclosure of the visual display of data entered by callers. Thus, Katz had ample incentive and opportunity to demonstrate specification support and offer expert testimony on that issue.

Despite that opportunity, Katz has not shown specification support for the visual display of caller-entered customer number data. Katz points to three statements in the specification as providing that support, but each fails to show that the inventor was in possession of the claimed invention as of the filing date. First, Katz contends that the discussion of the interface terminal discloses the display of customer-entered data. That discussion, however, references only the display of opera-

tor-entered data. *See* '360 patent, col. 11, ll. 11-16. Next, Katz points to the command terminal in an auction embodiment, which displays the "number of bidders" and "fresh bidders." *Id.*, col. 15, ll. 23-32. Even if Katz's expert were correct that the fresh bidders are identified by customer numbers, the specification would still not provide the required support, because it contains no indication that those customer numbers were entered by the customer. Finally, Katz points to a broad statement that "[i]n any of the various formats, the status of the analysis can be televised by selecting a camera focused on the interface terminal IT." *Id.*, col. 19, ll. 51-53. The district court called that sentence the "Bootstrapping Sentence" because Katz contended that it disclosed the display of everything "[i]n any of the various formats." The previous descriptions of the interface terminal, however, were limited to operator-entered data. And Katz's expert did not state that the sentence in question disclosed the display of caller-entered data. Because Katz failed to point to a genuine factual dispute over whether the specification disclosed the display of caller-entered customer numbers, the district court properly entered summary judgment on that issue.

B

From the Dual Call Mode group, the district court invalidated claim 34 of the '120 patent for claiming a system in which "called number identification signals (DNIS) . . . identif[y] said operating process format" without describing such a system in the specification. Katz contends that the specification describes such a system by disclosing that DNIS signals correspond to different "call modes," such as 800 number or 900 number, and that different call modes are used to identify different "call processing flows." The appellees contend that different call processing flows are not different "formats," as that

term was construed by the district court. The court construed the term "format" as follows:

> Format refers to a call processing flow implemented by at least one computer program that sets forth the content and sequence of steps to gather information from and convey information to callers through pre-recorded prompts and messages. Selection of, or branching to, a module or subroutine within a computer program does not constitute selection of a separate format. Selection of (or branching to), a second computer program by a first computer program, that together implement a call process flow application also does not constitute selection of a separate format.

We agree with Katz that the different call modes disclosed by the specification identify different formats. For example, the specification describes asking different questions to and gathering different information from callers who dial an 800 number, as opposed to those who dial a 900 number. *Compare* '120 patent, col. 7, ll. 1-8, *with id.*, col. 7, ll. 27-39. The different questions, however, are relevant only to qualifying the 800 caller for participation in the game or contest. Katz did not point to anything in the specification that describes presenting 800 callers with a different version of the game or contest. It is unclear whether the claim requires such a description, because the district court has not construed "operating process format," which may have a narrower definition than "format." *See id.* col. 3, ll. 10-11, 39-43. The parties have not briefed us on this construction, and we decline to construe it *sua sponte*. We therefore vacate the district court's judgment of invalidity as to claim 34 of the '120 patent and remand for construction of the term "operating process format."

V

Katz next appeals the district court's rulings on obviousness. The court held that several of the Voice-Data claims from the '965 patent would have been obvious in view of a prior art patent to Szlam and a prior art reference known as "Yoshizawa." The court also invalidated several of the Dual Call Mode claims from the '120 patent in view of two prior art references known as "Student Registration" and "Moosemiller." Finally, the court invalidated one other claim from the '120 patent in view of Szlam and Student Registration. We affirm all of those rulings.

A

In appealing the obviousness ruling as to claims 31, 35, 53, 61, and 66 of the '965 patent, Katz admits that Szlam and Yoshizawa disclose all the elements of the claims. Katz argues, however, that the trial court erred in concluding that it would have been obvious to combine those references.

Szlam describes a customer-service system using a voice response unit ("VRU") to receive ordering information from callers and to transfer callers to agents. Katz agrees that Szlam discloses all of the claim limitations except the limitation in claims 31, 35, and 53 that requires acknowledgement numbers to be provided to individual callers and the limitation in claims 61 and 66 that requires the system to confirm stored information with a caller. Katz does not dispute that those limitations are disclosed in Yoshizawa, which describes a telephone betting system using a VRU that allows a caller to place bets and that gives the caller a registration number that can be used to cancel the bet. Yoshizawa reads back stored information to the caller before the caller can cancel a bet. Katz argues that it would not have been

obvious to combine the two references because the registration numbers in Yoshizawa are used to cancel a bet under "tight time constraints," which are not present in a customer-service system such as Szlam. We disagree. Yoshizawa explicitly states that its invention can be applied to "order entry" systems, which are not described as operating under "tight time constraints." Moreover, the use of a registration number to cancel an order works in the same way as canceling a bet, even in the absence of time pressures.

We also disagree with Katz's contention that a person of ordinary skill in the art would not be motivated to combine Yoshizawa with Szlam because Yoshizawa distinguishes operator-assisted systems such as Szlam. A reference can distinguish prior art in order to show the novelty of an invention without teaching away from combining the prior art with the invention disclosed in the reference. *See Ricoh Co., Ltd. v. Quanta Computer Inc.*, 550 F.3d 1325, 1332 (Fed. Cir. 2008) ("A reference may be said to teach away when a person of ordinary skill, upon reading the reference, would be discouraged from following the path set out in the reference, or would be led in a direction divergent from the path that was taken by the applicant.") (internal quotation omitted).

Katz also contends that the prior art references teach away from claim 31, which requires both caller-entered customer numbers and ANI ("Automatic Number Identification," i.e., signals indicating the caller's number in a manner similar to caller identification) to obtain account information. According to Katz, Szlam teaches away from using both techniques because it discloses only the use of ANI or caller-entered customer numbers. Katz contends that Yoshizawa teaches away from using ANI because its system allows users to place bets "on a street corner," whereas ANI could not effectively operate in that setting because people could bypass the system by calling from

different telephones. While those are distinctions between the prior art and the invention, they do not lead to the conclusion that the prior art teaches away from the invention. Neither of the references would lead an inventor down an errant path or discourage using the combination of ANI and caller-entered numbers to obtain account information. We agree with the district court that there is no dispute of material fact as to whether the identified claims of the '965 patent would have been obvious in view of Szlam and Yoshizawa.

Katz next appeals the district court's decision that claims 35, 53, 61, and 66 of the '965 patent were not entitled to priority over Szlam. Once an accused infringer establishes obviousness by clear and convincing evidence, the burden shifts to the patentee to prove priority over the invalidating prior art. *See PowerOasis, Inc. v. T-Mobile USA, Inc.*, 522 F.3d 1299, 1305 (Fed. Cir. 2008). To be entitled to the priority date of an earlier application, the patentee must show that "the application necessarily discloses that particular device." *Hyatt v. Boone*, 146 F.3d 1348, 1354 (Fed. Cir. 1998) (internal quotation omitted). Therefore, in order for the claims to have priority over Szlam, the parent application needed to disclose the invention of those claims: receiving caller-entered signals, looking up data corresponding to that caller in a file, and displaying the located data. To support its argument that the earlier application provided such disclosure, Katz points to the same portions of the Statistical Interface specification that it did in appealing the written description rulings—the interface terminal, the command terminal, and the "Bootstrapping Sentence." Katz fails, however, to explain how those specification statements disclose the display of data corresponding to caller-entered signals. Because Katz has not met its burden to establish priority over Szlam, we affirm the district

court's ruling that claims 35, 53, 61, and 66 of the '965 patent are invalid for obviousness.

B

The district court held that claims 57 and 63 of the '120 patent would have been obvious in view of the Student Registration and Moosemiller references, and that claim 67 of the '120 patent would have been obvious in view of the Szlam and Student Registration references. Moosemiller discloses a voice response system that uses a host computer to provide callers with voice prompts allowing callers to log in to the system with touchtone signals. The Moosemiller system can identify the number that the caller has dialed and use that information to classify incoming calls and greet each caller with an appropriate prompt.

Katz argues that there is a genuine factual issue as to whether Student Registration discloses the "cue suppression" limitation of "utilizing, for qualified callers, the identification signals relating to the callers, to avoid prompting certain callers with a certain previously provided cue or cues." The court construed that limitation to require using "identification signals . . . to prevent" callers from receiving previously provided prompts. In the Student Registration system, students use their identification numbers to register for courses, and the system provides different messages depending on a student's registration status. For example, the system will use Dialog #23 if the student wishes to be placed on a course registration waiting list. If the student is already on the waiting list, the system will not play Dialog #23 but will instead play Dialog #27, which tells the student that he or she is already registered or is on the waiting list for the course. Katz argues that the asserted claims of the '120 patent require a system that tracks the cues a user has received, and that Student Registration discloses a sys-

tem that tracks only the student's registration status. The asserted claims, however, simply require using identification signals to avoid repeating cues; they do not dictate how that must be accomplished. Because the Student Registration system uses student numbers to access the caller's registration status and avoid giving repeat cues, Student Registration clearly discloses the "cue suppression" limitation.

Katz next argues that it would not have been obvious to combine Student Registration and Szlam to create the invention of claim 67 of the '120 patent, which bases cue suppression on ANI data. Katz contends that students' mobility and their tendency to share telephone numbers would cause "unpredictable and disastrous results" in a cue suppression system based solely on ANI data. The problem with Katz's argument is that claim 67 reads on any method to suppress cues by identifying callers based in part on ANI data. And Student Registration discloses multi-faceted identification techniques such as using a personal identification number or a birth date in addition to a registration number. Claim 67 is therefore an obvious combination of Student Registration's cue suppression with the ANI-based identification process of Szlam. *See KSR Int'l Co. v. Teleflex Inc.*, 550 U.S. 398, 417 (2007) ("[I]f a technique has been used to improve one device, and a person of ordinary skill in the art would recognize that it would improve similar devices in the same way, using the technique is obvious unless its actual application is beyond his or her skill.").

VI

Katz next appeals three of the district court's claim constructions pertaining to several of the asserted claims. However, none of those claim construction issues gives rise to reversible error.

A

Claim 31 of the '965 patent (the Voice-Data patent) recites a method claim for controlling communications in a communications facility, including the step of "generating computer acknowledgement numbers to identify the transaction for the system and individual callers and providing said computer acknowledgement numbers to the individual callers." The district court construed the term "acknowledgement number" as "a number used by a caller to verify or acknowledge a transaction to the system." That construction does not specify how the caller uses the number to acknowledge a transaction to the system. One reasonable reading of the court's construction is that the caller enters the number to the system. Another is that the caller listens to the number and then confirms that it is correct. A third possible reading is that the caller simply listens to the number and does not need to provide any confirmation to the system, i.e., the transaction is "to the system," but the acknowledgement is not. In a subsequent opinion, the district court held "there is nothing within the specification or the term itself that requires an acknowledgment number to be provided to the system." The appellees, however, contend that the district court's construction requires the caller to repeat the acknowledgment number to the system.

Katz argues that a construction that requires the caller to enter a confirmation number into the system would erroneously limit the proper scope of the claims by importing limitations from a single embodiment. We agree. While the health poll embodiment of the '762 patent requires the user to enter the acknowledgement number into the system as a security measure, '762 patent, col. 8, ll. 43-49, another embodiment does not require the user to enter the acknowledgement number, *id.*, col. 11, ll. 49-58. And an embodiment from the '965

patent explicitly states that the caller may enter the acknowledgement number but is not required to do so. '965 patent, col. 12, ll. 57-59.[14] Because there is a strong presumption against a claim construction that excludes a disclosed embodiment, *Chimie v. PPG Indus., Inc.*, 402 F.3d 1371, 1377 (Fed. Cir. 2005), we reject the appellees' interpretation of the term "acknowledgement number" as a number that the caller must repeat to the system. Instead, we hold that the correct construction of "acknowledgement number" is "a number that can be used by a caller to identify a transaction." This construction does not affect any of the district court's summary judgment rulings, however, because we have affirmed the district court's ruling that claim 31 is invalid for obviousness, and the construction of the term "acknowledgement number" does not affect that ruling.

B

Based on an argument Katz made during reexamination to avoid prior art, the district court construed the term "personal identification data" to have a meaning distinct from passwords and PIN numbers. From the Statistical Interface group, claim 43 of the '863 patent and claim 18 of the '547 patent cover the use of "personal identification data." In response to the examiner's rejection on reexamination based on Yoshizawa's use of a

[14] The parties agree that the term "acknowledgement number" has the same meaning in the '762 patent as in the '965 patent. Our holding, however, is limited to the meaning of the term "acknowledgement number" in the '965 patent because no claims of the '762 patent have been selected against any of the appellees. If defendants other than the appellees wish to argue for a different construction for the '762 patent, they would be free to do so unless they had agreed that the terms should have a consistent meaning across both patents.

password as the "personal identification data," Katz explained:

> Although the Examiner alleges that the password entered by a subscriber satisfies the "one other distinct identification data element," the Patentee respectfully submits that the claim requires that "one other distinct identification data element" to be "personal identification data" of the caller. A password that is composed (and frequently changed) serves as an access code or PIN, rather than personal identification data. . . . [S]everal examples of personal identification data [include] a caller's name, address, telephone number, initials, age, etc.

On appeal, Katz argues that the distinction it proffered in reexamination did not have the effect of disclaiming all passwords or PINs, particularly those that are not arbitrarily composed and are not frequently changed. We reject that argument. Katz's disclaimer distinguished "personal identification data" from all composed passwords, not just arbitrarily composed passwords. For example, Katz disclaimed the use of passwords that can be composed and changed, including passwords that are initially set to telephone numbers or other personal identification data. Katz contends that would-be infringers could circumvent the patent simply by labeling "personal identification data" as a "password." For example, Katz envisions a circumventing system that assigns a user's social security number to the user as a "password." However, such a concern is not present in this case and could be addressed by determining whether the purported password can be composed and changed. If the system allowed the user to change his password from his social security number to another phrase of his choosing, that system would lie outside the scope of Katz's claims in light of the prosecution history. We therefore find no

error in the district court's claim construction of "personal identification data."

C

For several patents in the Statistical Interface group, the district court construed the term "customer number" to mean a number assigned to a customer by a vendor or recognized by the vendor for the purpose of identifying the customer. The court further construed that term to be distinct from a credit card number. The court's construction applied to the use of that term in claim 18 of the '360 patent and claim 43 of the '863 patent. Katz appeals the district court's construction of "customer number," noting that the specification contains embodiments in which a "credit card number" is used to identify people. However, Katz is unable to point to any place in the specification where the term "credit card number" is linked to the term "customer number." The only references to both terms indicate that they are used for different purposes. A figure in the specification shows "customer number" and "credit card number" as two distinct fields. *See* '863 patent, fig. 5. Additionally, claim 32 of the '762 patent treats the two elements as distinct. It recites a means to provide signals "indicative of an individual caller's customer number and credit card number" and a structure "to verify said individual caller's customer number and credit card number to determine said individual caller's credit." Because we ordinarily interpret claims consistently across patents having the same specification, *NTP, Inc. v. Research in Motion, Ltd.*, 418 F.3d 1282, 1293 (Fed. Cir. 2005), we agree with the district court's construction of the term "customer number."

VII

Finally, Katz appeals from the district court's summary judgment determinations that U.S. Bank, American

Airlines, and DHL did not infringe the remaining claims selected against them. Claim 63 of the '120 patent was asserted only against DHL and is the only remaining claim against DHL. Because we have sustained the district court's order invalidating that claim, we do not address the infringement issue as to that claim.

A

Katz appeals from the district court's summary judgment that U.S. Bank's accused systems do not infringe Statistical Interface claims 43 and 49 of the '863 patent and Conditional Interface Plus claims 19, 49, and 71 of the '285 patent. Those claims require that the interface structure or method include means or a step for receiving "dialed number identification service" ("DNIS") data signals, which the court construed to mean data or signals "that identify the number called" by the party calling the data processing system.

Although the parties do not disagree with the court's construction of the term DNIS, they disagree about the meaning of the court's construction. Specifically, Katz argues that the DNIS limitation, as construed by the court, is satisfied as long as the accused system assigns a distinct value to each called number, which can be used to identify the called number and route incoming calls accordingly. U.S. Bank seems to argue that the court's construction of the DNIS limitation requires that the accused system actually store the ten-digit telephone number dialed by the caller, rather than a value that "identifies" that number in some other fashion. In the summary judgment opinion, it appears that the district court may have adopted that narrower interpretation, as it remarked that U.S. Bank's system did not store the called number itself, but only a shorter number that represented the called number.

The district court's brief discussion of the DNIS issue leaves it unclear whether the court's construction of the DNIS limitation requires that the accused system use the full ten-digit called telephone number or merely some other representation that uniquely identifies the called number. Because the parties have addressed this issue only fleetingly in their briefs, we vacate the court's summary judgment order as to these claims and remand for the district court to resolve this issue of claim construction.

U.S. Bank argued in the alternative that, even under the broader interpretation of the court's claim construction advocated by Katz, the accused U.S. Bank systems do not infringe because they lack signals that uniquely identify the called number. The accused systems use only five digits, which are sometimes referred to as vector directory numbers ("VDNs"). U.S. Bank's expert, Dr. Paul S. Min, stated that one VDN can correspond to many called numbers in the accused system and thus does not uniquely identify the number called. If Dr. Min's statement had been undisputed, summary judgment of noninfringement would have been proper. Katz, however, pointed to a genuine factual dispute over whether the five digit codes can identify the called number in the accused systems. Katz's expert, Dr. David Lucantoni, noted that U.S. Bank uses the terms VDN and DNIS interchangeably to refer to five digit codes. U.S. Bank contends that Dr. Lucantoni's conclusion was wholly unsupported, but some of the documentation supporting U.S. Bank's summary judgment motion labels five-digit codes as DNIS, not VDN. Other U.S. Bank documents specifically direct the creation of a one-to-one relationship between the assigned DNIS values and the numbers dialed by callers. Because the evidence suggests U.S. Bank's systems use five-digit codes to uniquely identify called numbers, we conclude that summary judgment in U.S. Bank's favor on

the DNIS issue was improper under the broader construction of the term DNIS.

Katz also appeals from the district court's summary judgment that U.S. Bank's accused system does not infringe claim 5 of the '223 patent. Katz first appeals the district court's implicit claim construction that "means for selectively receiving calls" requires that some of the calls not be received by the system. Katz contends that the court's construction would not cover one of the disclosed embodiments, in which different audio response units ("ARUs") receive different categories of calls, i.e., calls to 800 numbers, calls to 900 numbers, and calls to area code numbers. We disagree. The system as a whole has to selectively receive calls because the "means for selectively receiving calls" consists of "means for receiving calls in a plurality of call modes" including the 800, 900, and area code modes. Katz's contention that each ARU is the "means for selectively receiving calls" fails because claim 5 makes clear that the "means for selectively receiving calls" consists of multiple ARUs. Additionally, the embodiment Katz points to does not receive all calls, because calls in the 800 and area code calling modes will be aborted under certain conditions. *See* '223 patent, fig. 2.

We reject Katz's argument that the accused system does not receive all calls. Both parties agree that the accused system consists of a public branch exchange ("PBX"), which connects calls to an interactive voice response unit ("IVR"). Katz's expert, Dr. Lucantoni, stated that in the accused system some calls are never received by the IVR portion of the system, but he did not dispute that all of the calls are received by the PBX portion of the system. Dr. Lucantoni's contention that the IVR "selects" not to receive certain calls was based on his description of several "examples" of instances in which the IVR does not receive calls. The examples cited by Dr. Lucantoni, however, do not support his characterization of

the accused system. He pointed to a failure to connect due to a theoretical corrupted data packet. He also gave the theoretical example of holding a call in a queue until an IVR is available and, after an extended delay, canceling the call if an IVR is still not available. In both of those examples, the system was designed to connect all calls to an IVR but was vulnerable to failure due to unforeseen circumstances. A reasonable jury could not conclude from those examples that that the accused system selects not to receive calls in the same way the '223 patent provides that calls will be aborted in order to "limit repeat-call advantages" to callers who seek to place multiple calls to the system. *See* '223 patent, fig. 2, col. 3, ll. 21-25. Accordingly, we affirm the summary judgment of noninfringement as to claim 5 of the '223 patent.

B

American Airlines moved for summary judgment of noninfringement, contending that its accused system lacked a "record structure" that stored both "called data signals" developed by caller-operated touchtone telephones and "caller data" entered into the system by live operators. For those reasons, American Airlines argued, its accused system did not satisfy the "record structure" limitation of claim 43 of the '863 patent. In response to that motion, Katz changed its infringement theory after the close of discovery to assert that SABRE, a third-party system used by American Airlines, was the infringing record structure. Katz had previously contended that the "record structure" was a combination of two structures—SABRE and a system referred to as Periphonics IVR. Although the district court stated that it was "troubled" by the last-minute switch in Katz's theory, the court viewed the issue of the belated assertion of Katz's infringement theory as moot because it concluded that American Airlines did not infringe even under Katz's new

theory. We hold that summary judgment on Katz's new theory was inappropriate. We therefore vacate the district court's summary judgment order and remand to the district court the portion of the case involving the assertion of claim 43 of the '863 patent against American Airlines. On remand, the district court may revisit the question whether Katz timely asserted its present infringement theory under that claim.

Katz's new theory is that SABRE is a "record structure" that "receive[s] said caller data signals from said interface structure for accessing a file and storing certain of said data developed by said remote terminals," as required by claim 43. *See* '863 patent, col. 25, ll. 21-25 (independent claim 27, from which claim 43 depends). American Airlines contends that Katz's theory has two deficiencies. First, American Airlines argues that receiving and storing caller-entered data is insufficient because the record structure must "receive said caller data signals" and store "data developed by said remote terminals." *Id.* For that reason, it argues, claim 43 requires that the system receive and store touchtone signals generated when users actuate the buttons on a remote terminal (e.g., a telephone), rather than receiving and storing bits representing the signals. Putting aside the physical challenges associated with storing "signals," the difficulty with American Airlines' construction is that the "record structure" receives the signals from the "interface structure." And the "interface structure" does not provide touchtone signals to the record structure, but instead provides "caller data signals representative of data . . . developed by said remote terminals." *Id.*, col. 25, ll. 14-16. Thus, receiving and storing information representative of the caller-entered data is sufficient to infringe.

Second, American Airlines contends that Katz fails to point to any evidence that SABRE receives and stores information representative of caller-entered data. We

disagree. There is at least a genuine issue of material fact as to whether SABRE stores information representative of caller-entered data. Katz submitted an expert's infringement report stating that the SABRE collects information from the caller and stores the information in the SABRE database including passenger and flight information. That evidence is supported by an American Airlines document entitled "Dialog Specification: Non Revenue Travel Application." That document describes a telephone-interface system that collects caller-entered data including passenger and flight information. In describing eligibility checks for various flight bookings, the document states that "SABRE will also check for [various eligibility criteria] when trying to build the [passenger record], and will return a specific error code." This implies that SABRE receives and stores caller-entered data. Because there is a genuine issue of material fact as to whether American Airlines' system receives and stores information representative of caller-entered data, we vacate the district court's summary judgment of noninfringement against American Airlines on claim 43 of the '863 patent and remand for further proceedings on that issue, subject to the district court's revisiting, at its discretion, the timeliness of Katz's assertion of its current infringement theory.

VIII

Katz appeals many of the district court's rulings on claims that were not selected against any of the appellees. Because those claims are not at issue in this appeal, we do not address Katz's arguments with respect to the district court's rulings on those claims. Those rulings are the following: the court's indefiniteness rulings as to claim 11 of the '021 patent, claim 19 of the '547 patent, claim 116 of the '707 patent, claim 34 of the '551 patent, claim 4 of the '893 patent, and claims 41 and 42 of the

'309 patent; the court's written description rulings as to claim 34 of the '551 patent, claim 32 of the '120 patent, claims 18, 106, 110, 114, and 119 of the '360 patent, and claims 1, 7, 51, 58, and 86 of the '223 patent; the court's obviousness ruling as to claim 43 of the '965 patent; and the court's claim construction ruling as to claim 32 of the '762 patent. While we do not directly address any of those issues, any further proceedings relating to those issues may, of course, be affected by our analysis of related issues in this opinion.

Each party shall bear its own costs for these appeals.

AFFIRMED IN PART, VACATED IN PART, and REMANDED