United States District Court,
S.D. New York.

CIAS, INC,
Plaintiff.
v.
ALLIANCE GAMING CORPORATION and Bally Gaming, Inc,
Defendants.

No. 03 CIV.3064 (LAK)

March 29, 2006.

Background: Patentee brought suit alleging infringement of patent on a system for detecting counterfeit items that was used in tickets used for playing cashless slot machines in casinos. Defendant filed motion for summary judgment.

Holding: The District Court, Kaplan, J., held that accused systems did not infringe patents claims either literally or under the doctrine of equivalents.

Motion granted.

5,367,148. Cited.

Robert C. Morgan, A. Peter Adler, Ropes & Gray, New York City, for Plaintiff.

Kenneth G. Roberts, Charles M. Hart, Wolf, Block, Schorr and Solis-Cohen LLP, New York City, for Defendants.

MEMORANDUM OPINION

KAPLAN**, District Judge.**

This patent infringement case involves a patent on a system for detecting counterfeit items that is used in tickets used for playing cashless slot machines in casinos, among other things. The matter is before the Court on defendant's motion for summary judgment dismissing the complaint on the ground that its accused systems do not infringe plaintiff's patent.

I. Facts

A. The Parties

Plaintiff CIAS, Inc. ("CIAS") owns U.S. Patent No. 5,283,422 (the "'422 patent"), which teaches a system of counterfeit detection. FN1

FN1. *See* Joint Pre-Trial Order, Stipulated Facts ("JPTO") para.para. 1, 7.

Defendants are Alliance Gaming Corporation and its subsidiary, Bally Gaming, Inc. (collectively, "Alliance"). FN2 It is a "leading manufacturer of systems and machines used in the gaming industry." FN3 Among other things, it manufactures and sells two systems that manage all aspects of a casino's slot machines, including accounting and management functions.FN4

FN2. *See* id. para.para. 2, 3.

FN3. Alliance's Local Rule 56.1 Statement of Material Facts ("Alliance 56.1") para. 8.

FN4. *See* id. para. 9; CIAS's Local Rule 56.1 Statement of Material Facts ("CIAS 56.1") para. 8.

B. The '422 Patent

After overcoming several rejections based on the cited prior art,FN5 the ' 422 patent issued on February 1, 1994.FN6 In connection with infringement litigation unrelated to this case, CIAS requested re-examination on March 30, 1999.FN7 A re-examination certificate was issued on October 17, 2000, confirming patentability after amendment of Claim 1 by combining it with the original Claim 8.FN8

FN5. *See* Roberts Decl., Ex. F ("'422 File History"), Tabs 7-10. In particular, the inventors addressed U.S. Patent No. 4,463,250 ("McNeight") as not recognizing that
"a counterfeit detection system may utilize information coded according to a *detectable series,* such as sequential serial numbers. McNeight [ ] discloses a method for detecting counterfeits in which articles ... are coded in accordance with a *secret algorithm,* and in which counterfeits are detected by detecting codes which do not conform to the algorithm ... McNeight [ ] is premised on the use of a secret algorithm ... and does not recognize that a counterfeit detection system could use sequential serial numbers.... McNeight's authorized numbers conform to a secret algorithm and are different from a detectable series such as sequential serial numbers."

Id. at Tab 8 (emphasis in original). The inventors described McNeight further as teaching a system under which its "authorized numbers conform to a secret algorithm and are different from randomly selected information. There is no suggestion in McNeight [ ] to utilize *randomly-selected* authorized information." Id. (emphasis in original).
FN6. *See* JPTO para. 5.

FN7. *See* id. para. 6; CIAS 56.1 para. 28.

FN8. *See* JPTO para. 6; CIAS 56.1 para. 29. During re-examination, the inventors' stated reason for distinguishing U.S. Patent No. 3,833,795 ("Shoshani") was that Shoshani "teaches the use of a pair of numbers, and not either serial numbers alone or randomly-selected numbers alone." Roberts Decl., Ex. K ("Request for Re-Examination") at 4.

The parties dispute vigorously the scope and meaning of the '422 patent's claims, as addressed below. It is undisputed, however, that the '422 patent describes a counterfeit detection system.FN9 The system detects counterfeits by assigning identifying information to a finite number of objects and storing that information.FN10 When an object later is presented for authentication, the system compares the object's identifying information to the stored data.FN11 If the identifying information either does not appear in the stored data or previously has been presented for authentication, the system determines that the object is counterfeit.FN12

FN9. *See generally* Roberts Decl., Ex. B ("'422 Patent").

FN10. *See* id.

FN11. *See* id.

FN12. *See* id.

Claim 1 of the '422 patent reads in full:

"A counterfeit detection system for identifying a counterfeit object from a set of similar authentic objects, each object in said set having unique authorized information associated therewith comprised of machine-readable code elements coded according to a detectable series, the system comprising:

means at a first facility for storing said authorized information;

means at a plurality of facilities other than said first facility for machine-reading code elements from a similar object and providing information related to the machine-read code elements;

means coupled to receive said information related to said code elements machine-read from aid object for at least temporarily storing that information; and

means at said first facility for detecting counterfeits coupled to said storing means and to said means for temporarily storing, said detecting means including a computer programmed to detect a counterfeit from information in said storing means at said first facility and from information received by said means for temporarily storing when information related to code elements machine read from a similar object is different from said authorized information." FN13

FN13. Id. at 49:41-66.

Claims 2 through 10 are dependent on Claim 1 and describe various permutations of the system.FN14 Claims 11 and 12 describe systems similar to that set out in Claim 1, but with different means of collecting and comparing the unique authorized information.FN15 Claims 13 and 14 describe similar systems, but the information associated with each object is "unique randomly selected authorized information [ ] comprised of machine-readable code elements." FN16 Finally, Claims 15 and 16 describe a method for designating objects as authorized objects by

FN14. *See* id. at 49:67-50:33.

FN15. *See* id. at 50:34-51:14.

FN16. Id. at 51:17-19, 52:1-3.

"randomly selecting m sets of unique authorized information from n sets of unique information, said n sets of unique information being a non-random series and m being substantially less than n, such that no given set of said m sets of unique authorized information is deducible from all or part of the remaining of said m sets of authorized information, n and m being integers and n being greater than one; storing said m sets of authorized information; and applying said m sets of authorized information to respective authorized objects in a machine readable form." FN17
FN17. Id. at 52:25-39. Claim 16 describes the "method according to claim 15 wherein said n sets of unique information are a detectable series." Id. at 52:40-41. CIAS does not allege that Alliance's systems infringe Claims 15 or 16.

C. Alliance's Systems

Alliance offers two products, called the Slot Data System ("SDS") and the Slot Management System ("SMS"),FN18 that manage "all aspects of a casino's slot machines, including accounting and management functions." FN19 They allow players to use "cashless" slot machines by inserting and retrieving electronically-generated tickets redeemable for cash.FN20 These paper tickets, called eTickets,FN21 are the size of a dollar bill and imprinted with an 18-digit identification number, which appears both numerically and in a standard bar code format.FN22 Slot machines read eTickets with "bill validators," equipment that includes standard bar code readers.FN23

FN18. *See* Alliance 56.1 para. 10; CIAS 56.1 para. 10.

FN19. Alliance 56.1 para. 9; CIAS 56.1 para. 9.

FN20. *See* Alliance 56.1 para.para. 9, 10; CIAS 56.1 para.para. 9, 10.

FN21. *See* Alliance 56.1 para. 11; CIAS 56.1 para. 11.

FN22. *See* Alliance 56.1 para. 14; CIAS 56.1 para. 14.

FN23. *See* Alliance 56.1 para.para. 14, 17; CIAS 56.1 para.para. 14, 17.

While the SDS and SMS systems each produce an 18-digit identification number for every eTicket, they do so in different manners. The SDS system produces a number comprised of five subparts: FN24

FN24. *See* Alliance 56.1 para. 20; CIAS 56.1 para. 20.

Ticket Type	1 digit identifying whether the eTicket was printed at a slot machine or casino cashier station.
Property Identifier	3 digits, identifying the casino.
Machine Number	5 digits, identifying the machine or cashier station that printed the eTicket.
Ticket Number	5 digit serial number for the individual eTicket, ranging from 00001 to 99999.
Unique Ticket Identifier	4 digits, generated by a secret algorithm using the preceding numbers.

In contrast, an 18-digit identification number produced by the SMS system FN25 is comprised of five digits that identify the machine issuing the eTicket and thirteen digits that are generated by a secret algorithm, that operates on a machine identification number, casino identification number, the date, and the time as its input data.FN26

FN25. The SMS system is known also as the ACSC system. JPTO para. 8.

FN26. *See* Alliance 56.1 para. 23; CIAS 56.1 para. 23.

CIAS contends that the SDS system infringes Claims 1 (as amended), 3, 5-7, and 9-12 and that the SMS system infringes Claims 13 and 14.

II. The Standard

Summary judgment is appropriate if there is no genuine issue of material fact and the moving party is entitled to judgment as a matter of law. FN27 The moving party has the burden of demonstrating the absence of a genuine issue of material fact,FN28 and the Court must view the facts in the light most favorable to the nonmoving party.FN29 Where the burden of proof at trial would fall on the nonmoving

party, it ordinarily is sufficient for the movant to point to a lack of evidence on an essential element of the nonmovant's claim.FN30 In that event, the nonmoving party must come forward with admissible evidence FN31 sufficient to raise a genuine issue of fact for trial or suffer an adverse judgment.FN32

FN27. *See* FED.R.CIV.P. 56(c); Anderson v. Liberty Lobby, Inc., 477 U.S. 242, 248, 106 S.Ct. 2505, 91 L.Ed.2d 202 (1986); White v. ABCO Eng'g Corp., 221 F.3d 293, 300 (2d Cir.2000).

FN28. *See* Adickes v. S.H. Kress & Co., 398 U.S. 144, 157, 90 S.Ct. 1598, 26 L.Ed.2d 142 (1970).

FN29. *See* United States v. Diebold, Inc., 369 U.S. 654, 655, 82 S.Ct. 993, 8 L.Ed.2d 176 (1962); Hetchkop v. Woodlawn at Grassmere, Inc., 116 F.3d 28, 33 (2d Cir.1997).

FN30. *See* Celotex Corp. v. Catrett, 477 U.S. 317, 322-23, 106 S.Ct. 2548, 91 L.Ed.2d 265 (1986); Virgin Atl. Airways Ltd. v. British Airways PLC, 257 F.3d 256, 273 (2d Cir.2001).

FN31. *See, e.g.,* Nora Beverages, Inc. v. Perrier Group of Am., Inc., 269 F.3d 114, 123-24 (2d Cir.2001).

FN32. *See, e.g.,* Nebraska v. Wyoming, 507 U.S. 584, 590, 113 S.Ct. 1689, 123 L.Ed.2d 317 (1993); Goenaga v. March of Dimes Birth Defects Found., 51 F.3d 14, 18 (2d Cir.1995).

When a party moves for summary judgment of non-infringement, the court first determines the meaning and scope of the claims as a matter of law and then compares the construed claims to the allegedly infringing product.FN33 A court may, but need not, conduct a Markman hearing to determine the scope of the claims.FN34

FN33. *See, e.g.,* Markman v. Westview Instruments, Inc., 52 F.3d 967, 976 (Fed.Cir.1995), *aff'd,* 517 U.S. 370, 376, 116 S.Ct. 1384, 134 L.Ed.2d 577 (1996).

FN34. *See, e.g.,* EMI Group North America, Inc. v. Intel Corp., 157 F.3d 887, 891 (Fed.Cir.1998); *cf.* Keen, Inc. v. InfoRocket.com, No. 01 Civ. 8226(LAP), 2002 WL 1732359 (July 26, 2002).

III. Claim Construction

A. Applicable Law

"It is a 'bedrock principle' of patent law that 'the claims of a patent define the invention to which the patentee is entitled the right to exclude.' " FN35 Claim terms in a patent normally have their ordinary and customary meanings as understood by those skilled in the relevant art at the time of invention.FN36 The understanding of a claim term by one of ordinary skill in the art "provides an objective baseline from which to begin claim interpretation." FN37

FN35. Phillips v. AWH Corp., 415 F.3d 1303, 1312 (Fed.Cir.2005) (*en banc*) (internal citations omitted).

FN36. Id. at 1313; *see also, e.g.,* CCS Fitness, Inc. v. Brunswick Corp., 288 F.3d 1359, 1366 (Fed.Cir.2002).

FN37. Phillips, 415 F.3d at 1313.

[1] The construction inquiry does not take place in a vacuum, as the reading is deemed to take place "not only in the context of the particular claim in which the disputed term appears, but in the context of the entire patent, including the specification." FN38 Although in some instances the meaning of claim language as understood by a person of ordinary skill in the art may be readily apparent to lay courts, in other cases the analysis may not be as straightforward, as when a patentee uses a term idiosyncratically. FN39 In such instances, the court looks to "those sources available to the public that show what a person of skill in the art would have understood disputed claim language to mean." FN40 Those sources include "the words of the claims themselves, the remainder of the specification, the prosecution history, and extrinsic evidence concerning relevant scientific principles, the meaning of technical terms, and the state of the art." FN41

FN38. Id.

FN39. Id. at 1314.

FN40. Innova/Pure Water, Inc. v. Safari Water Filtration Sys., Inc., 381 F.3d 1111, 1116 (Fed.Cir.2004).

FN41. Phillips, 415 F.3d at 1314 (quoting Innova, 381 F.3d at 1116).

[2] Of these sources, the Federal Circuit and its predecessors have "long emphasized the importance of the specification in claim construction." FN42 Because the specification's statutory role is to describe the claimed invention in "full, clear, concise, and exact terms," FN43 it is "the single best guide to the meaning of a disputed term," always highly relevant, and "[u]sually [ ] dispositive." FN44 Thus, if a specification reveals a particular definition given to a claim term that differs from its usual meaning, the inventor's definition controls.FN45 Similarly, if a specification includes "an intentional disclaimer, or disavowal, of claim scope," that too is dispositive.FN46

FN42. Id. at 1315.

FN43. 35 U.S.C. s. 112.

FN44. Vitronics Corp. v. Conceptronic, Inc., 90 F.3d 1576, 1582 (Fed.Cir.1996).

FN45. Phillips, 415 F.3d at 1315; *see also* Vitronics, 90 F.3d at 1582 (the specification "acts as a dictionary when it expressly defines terms used in the claims or when it defines terms by implication.").

FN46. Phillips, 415 F.3d at 1316.

Another intrinsic source that a court should consider is the patent's prosecution history, which is the "complete record of the proceedings before the PTO and includes the prior art cited during the examination of the patent." FN47 The prosecution history can be helpful evidence of how the PTO and the inventor understood the patent.FN48 On the other hand, because the prosecution history reflects negotiations between the PTO and inventor, it may lack the specification's clarity and therefore be less useful for claim construction.FN49 All the same, it "can often inform the meaning of the claim language by demonstrating how the inventor understood the invention and whether the inventor limited the invention in the course of prosecution, making the claim scope narrower than it would otherwise be." FN50

FN47. Id. at 1317.

FN48. *See* id.; *see also, e.g.,* Lemelson v. Gen. Mills, Inc., 968 F.2d 1202, 1206 (Fed.Cir.1992).

FN49. *See* Phillips, 415 F.3d at 1317; *see also, e.g.,* Inverness Med. Switz. GmbH v. Warner Lambert Co., 309 F.3d 1373, 1380-82 (Fed.Cir.2002).

FN50. Phillips, 415 F.3d at 1317.

[3] Although intrinsic evidence is primary in claim construction, a court may rely also upon extrinsic evidence to "shed useful light on the relevant art." FN51 This includes expert and inventor testimony, dictionaries, and treatises.FN52 Expert testimony can be useful in a variety of circumstances, such as

FN51. C.R. Bard, Inc. v. U.S. Surgical Corp., 388 F.3d 858, 862 (Fed.Cir.2004) (internal citations omitted).

FN52. *See* Phillips, 415 F.3d at 1317-18.

"to provide background on the technology at issue, to explain how an invention works, to ensure that the court's understanding of the technical aspects of the patent is consistent with that of a person of skill in the art, or to establish that a particular term in the patent or the prior art has a particular meaning in the pertinent field." FN53
FN53. Id. at 1318.

A court should take care not to rely overmuch on extrinsic evidence, as by its nature it has less of a connection to the specific patent at issue than does intrinsic evidence.FN54 Moreover, extrinsic evidence typically is assembled in litigation, when a party can be expected to select evidence that best supports its case and "leav[e] the court with the considerable task of filtering the useful extrinsic evidence from the fluff." FN55 Accordingly, a court may consider extrinsic evidence in claim construction, but should keep its potential flaws in mind and measure it against the yardstick of the intrinsic evidence.FN56

FN54. *See* id.

FN55. Id.

FN56. Id. at 1319.

Finally, as the Federal Circuit recently noted, "there is no magic formula or catechism for conducting claim construction." FN57 The touchstone is how a person of ordinary skill in the art would understand the claim terms, but a court is not constrained to follow a precise choreographed sequence in conducting its analysis.FN58

FN57. Id. at 1324.

FN58. *See* id.

B. The Terms of the '422 Patent

To resolve Alliance's motion for summary judgment, it is necessary to construe the terms "unique authorized information," "machine-readable code elements," "detectable series," and "randomly selected" as used in the '422 patent.

1. Unique Authorized Information

[4] Claims 1-12, 15 and 16 all refer to "unique authorized information" associated with individual objects.FN59 As CIAS concedes,FN60 neither the claims nor the specification define the term explicitly. FN61

FN59. *See* '422 Patent at 49:41-51:14, 52:25-41. Claims 13 and 14 refer to "unique randomly selected information." *See id*. at 51:15-52:24.

FN60. *See* CIAS Mem. at 14.

FN61. *See generally* '422 Patent.

CIAS argues that there was no need to define the term, as "unique authorized information" was "intended to and does carry its common and ordinary meaning. The information associated with each object is unique to that object, and it is information that has been authorized by the system." FN62 In other words, "unique authorized information" incorporates any data so designated by the counterfeit detection system-even "a picture of Mickey Mouse with a moustache." FN63

FN62. CIAS Mem. at 14.

FN63. Tr., Oct. 15, 2004, 19:10-11.

Alliance makes two arguments in favor of a more limited definition. It first contends that the specification requires that the term be construed as referring "merely to a small 'authorized' subset of a larger set of 'valid' numbers." FN64 As a matter of logic, the "unique authorized information" selected by the system for a given set of objects will be a subset of all *possible* information that could be so selected. There is no support in the specification, however, for the initial selection of a set of "valid" information from which the "unique authorized information" is then distilled. Alliance points to one section of the specification that, in describing the particular embodiment of casino chips, suggests that casinos, as a practical matter, will need to reserve some coded information for future use.FN65 This description of the potential pragmatic needs of one embodiment of the invention, however, cannot be read as a limitation on the claim term itself. FN66

FN64. Alliance Mem. at 13-14.

FN65. *See* '422 Patent at 7:36-55, 15:57-63.

FN66. *See* Phillips, 415 F.3d at 1323-24.

Alliance next contends that the inventors disclaimed multi-part information from inclusion in "unique authorized information" during re-examination of the '422 patent. During re-examination, the inventors cited Shoshani, another counterfeit detection patent, as prior art that had not been cited during initial prosecution.FN67 The inventors described Shoshani as "teach[ing] away from the use of serial numbers alone [because they provide inadequate counterfeit protection]." FN68 Instead, according to the '422 inventors, Shoshani provides objects with

FN67. *See* Request for Re-Examination at 4.

FN68. Id.

"an associated pair of numbers [ ]. One number of the pair [ ] is a serially-selected identification number [ ], and the other number of the pair is a randomly-selected control number [ ]. A master list of the associated pairs of numbers applied to objects is stored in mass memory ... [When an object's pair of numbers is scanned, the device compares that pair with] pairs of numbers stored in the mass memory, and discrepancies are indicated ... Shoshani [ ] teaches the use of a pair of numbers, and not either serial numbers alone or randomly-selected numbers alone." FN69
FN69. Id.

Alliance argues that by distinguishing Shoshani in this way-by the focus on its use of a pair of numbers as opposed to a serial number or a random number alone-the '422 inventors disclaimed multi-part information from "unique authorized information."

CIAS responds that Shoshani actually is distinguishable as prior art because "it does not detect when information relating to code elements machine read from a similar object is the same as information previously read from a similar object." FN70 This argument, however, is misplaced, as the issue is not whether the ' 422 patent should have issued over Shoshani on re-examination, but rather whether the inventors disclaimed multi-part numbers from their patent. Other possible differences between the ' 422 patent and Shoshani that were not discussed by the inventors at that time are therefore of no present moment.

FN70. CIAS Mem. at 17.

CIAS argues further that Shoshani does not treat the pair of numbers as a unit, but as separate numbers: "To check authenticity, it first looks at the serial number. Then it checks the control number to see if it matches the corresponding control number for that serial number stored in a computer. Accordingly, the two numbers in Shoshani are used separately and not together as either a detectable series or a random number." FN71

FN71. Id. at 9.

Again, while this may be an accurate description of how Shoshani actually works, the question here is what the inventors disclaimed during re-examination. The inventors there characterized Shoshani differently, stating that it "teaches the *use of a pair of numbers,* and not either serial numbers alone or randomly-selected numbers alone." FN72 They did not state that Shoshani used the two numbers separately, but instead implied that the patent used them together, as opposed to "serial numbers alone or randomly-selected numbers alone." The inventors requested re-examination because of their failure to disclose Shoshani as prior art during the initial prosecution, FN73 and so the context of their description of Shoshani was their interest in distinguishing it from the ' 422 patent. With that framework in mind, the implication of the inventors' description is that they understood and claimed the ' 422 patent, in contrast to Shoshani, to use either serial numbers alone or randomly-selected numbers alone.FN74

FN72. Request for Re-Examination at 4 (emphasis added).

FN73. *See* id. at 2-4.

FN74. *See* Phillips, 415 F.3d at 1317 ("Like the specification, the prosecution history provides evidence of how the [ ] inventor understood the patent. Furthermore ... the prosecution history was created by the patentee in attempting to explain and obtain the patent.").

Despite being secondary to the specification, prosecution history can demonstrate "how the inventor understood the invention and whether the inventor limited the invention in the course of prosecution, making the claim scope narrower than it would otherwise be." FN75 A competitor, "reading the prosecution history, would reasonably conclude" that the '422 inventors had restricted their claims to information of a single type and thus had given up multi-type information.FN76 On the basis of the re-examination statements of the inventors in distinguishing Shoshani, therefore, the term "unique authorized information" excludes information other than serial information alone or randomly-selected information alone.

FN75. Id.

FN76. Haynes Int'l v. Jessop Steel Co., 8 F.3d 1573, 1578 (Fed.Cir.1993).

Against this construction, CIAS argues that the full language of Claim 1 makes "unique authorized information" open-ended.

"The '422 patent claims 'unique authorized information ... comprised of machinereadable code elements coded according to a detectable series. The claim language has no exclusion of multi-part information. To the contrary, use of the word "comprised" expressly means that the 'unique authorized information' may include something in addition to the detectable series." FN77

FN77. CIAS Mem. at 15-16.

In other words, Claim 1's description of "unique authorized information" includes not just machine readable elements coded according to a detectable series, but also any additional information that the system selects. Thus, argues CIAS, multi-part or -type information is included.

As an initial matter, this argument does not address the re-examination history detailed above, as the Claim 1 language is original to the initial prosecution and so subject to the inventors' disclaimer during re-examination. Accordingly, even if CIAS were correct as to the language in Claim 1, the conclusion would remain the same.

Further, despite the Court's invitation,FN78 CIAS was unable to locate binding case law holding that "comprised of" is an open-ended term, rather than a limiting one. Instead, both parties' searches, as well as the Court's, indicate that there is no consensus in the Federal Circuit as to the meaning of this phrase.FN79 In the absence of such precedent, of any indication in the patent itself as to the phrase's meaning, and of any external evidence offered by the parties, the Court adheres to the ordinary and customary meaning of "comprised of" as a limiting description of composition.FN80 This construction preserves the distinction

between "comprised of" and "comprising," the latter of which in fact is a patent term of art when used in a transitional phrase, meaning "including, but not limited to." FN81

FN78. *See* Tr., Oct. 15, 2004, 63:14-65:21.

FN79. *E.g.,* Glaxo Grp. Ltd. v. Apotex, Inc., 376 F.3d 1339, 1343 (Fed.Cir.2004); Kohus v. Toys R Us, Inc., 282 F.3d 1355, 1356 n. 2 (Fed.Cir.2002); Schaefer Fan Co., Inc. v. J & D Mfg., 265 F.3d 1282, 1284-85 (Fed.Cir.2001).

FN80. *See, e.g.,* Apotex, 376 F.3d at 1343 ("Apotex's spray dried solution creates an amorphous 'co-precipitate' comprised of 90% CA, 9% sorbitol, and 1% zinc chloride by mass.").

FN81. *See, e.g.,* Georgia-Pacific Corp. v. United States Gypsum Co., 195 F.3d 1322, 1327-28 (Fed.Cir.1999).

Accordingly, the Court construes "unique authorized information" to mean information associated with each object, unique to that object and authorized by the '422 patent's system, but excluding information other than serial information alone or randomly-selected information alone.

2. Machine-Readable Code Elements

[5] Claims 1-14 describe how the objects are associated by the system with unique authorized information comprised of "machine-readable code elements." Alliance contends that the phrase is limited to directly-encoded binary numbers, while CIAS argues that it refers to any code that can be separated into parts and automatically obtained from objects.

The specification defines "machine-readable" as "used in a broad sense and [ ] meant to encompass techniques, methods and apparatus for automatically obtaining from objects information applied thereto or associated therewith." FN82 Since the specification here acts explicitly as a dictionary, its definition of "machine-readable" controls.FN83

FN82. '422 Patent at 4:49-57.

FN83. *See* Phillips, 415 F.3d at 1315; *see also* Vitronics, 90 F.3d at 1582.

"Code elements" are also defined in the specification, albeit less concretely, as "digits, characters, positions, places, pulses, signals, etc." FN84 This list of examples is non-exclusive, which suggests that the phrase is intended to refer broadly to any individual part of a code. Defendants argue that the specification describes only embodiments that use binary code, but again, a patent is not limited to one embodiment if its terms, as defined, include a broader scope.FN85 Here, the specification describes numerous kinds of code elements, not just binary forms.

FN84. '422 Patent at 4:60-61.

FN85. *See* Phillips, 415 F.3d at 1323-24.

The specification is "the single best guide to the meaning of a disputed term." FN86 Where, as here, it provides explicit definitions, the Court must follow its direction.FN87 Accordingly, the phrase "machine-readable code elements" is construed as individual parts of a code (1) that can be separated into parts and (2) that can be automatically obtained from objects.

FN86. Vitronics, 90 F.3d at 1582.

FN87. *See* id.

3. Detectable Series

[6] Claims 1-12 describe each particular object as being associated with unique authorized information comprised of machine-readable code elements "coded according to a detectable series." FN88 The specification does not define "detectable series" and discusses "series" in the context of a binary embodiment.FN89 While the inventors did not define "detectable series" explicitly during prosecution, they listed "sequential serial numbers" as an example in several places.FN90 Further, they contrasted the term with the results of "secret algorithms" and noted that in McNeight, which uses a secret algorithm as its means of counterfeit detection, "serial numbers are of no value." FN91

FN88. *See* '422 Patent at 49:41-51:14. Claim 16 describes the designation method of Claim 15 "wherein said n sets of unique information are a detectable series." *Id*. at 52:40-41.

FN89. *See generally id*.

FN90. *E.g.,* '422 File History, Tab 8 at 2, 4, 6, 7.

FN91. *Id*. at 5.

Against this intrinsic evidence, CIAS offers its expert's opinion that, to one skilled in the art, "detectable series" means "information in which a pattern, relationship, or arrangement may be detected through examination of a practical number of samples in the context in which the invention is used." FN92

FN92. Cohen Decl. para. 14.

Alliance objects that the expert's opinion is unsupported and argues that the phrase has no meaning in the art.FN93 Without pointing out what is erroneous about the offered definition, or what aspects, if any, are contradicted by the patent, it concludes that the term must be limited to the binary embodiments described in the specification.FN94 Alliance's own expert, however, despite professing confusion, uses the phrase without difficulty as part of his own analysis of the ' 422 patent.FN95 This demonstrates that to one skilled in the art-a category which Alliance certainly concedes includes its expert-the phrase has meaning.Moreover, and once again, a patent drawn to encompass multiple possible embodiments is not limited to a single exemplar from the specification. FN96

FN93. *See* Alliance Reply at 5-6.

FN94. *See* id.

FN95. *See, e.g.,* Roberts Decl., Exhibit H ("Wiklof Expert Report") at 12-13, 23.

FN96. *See* Phillips, 415 F.3d at 1323-24.

Accordingly, the term "detectable series" is construed to mean "information in which a pattern, relationship, or arrangement may be detected through examination of a practical number of samples in the context in which the invention is used." This definition is consistent with the inventors' description in the prosecution history, including the inclusion of "sequential serial numbers" and the exclusion of the results of "secret algorithms." FN97

FN97. *See* id. at 1317.

4. Randomly Selected

[7] The final term requiring construction is "randomly selected," which appears in Claims 13 and 14.FN98 Those claims describe each particular object as being associated with unique "randomly selected" authorized information comprised of machine-readable code elements.FN99 The term is thus substituted in Claims 13 and 14 for the term "detectable series" in Claims 1-12.FN100 The specification does not define the term.FN101

FN98. *See* '422 Patent at 51:15-52:24.

FN99. *See id.*

FN100. Claim 15 describes a method for designating objects as authorized objects that involves "randomly selecting" unique authorized information from a larger set of authorized information. *See id.* at 52:25-39.

FN101. *See generally id*.

Alliance contends that the term means exactly what it says: selection according to a random process, without any pattern or predictability whatsoever, as in a generator that selects digits based on cosmic noise. FN102 It argues further that the term cannot include pseudo-random selection, which is apparent randomness that has been generated purposefully, as by a computer algorithm or other program.FN103 CIAS does not disagree with Alliance's definition of pseudo-random or argue that a computer or algorithm can generate anything besides a pseudo-random number. It contends, however, that a person of ordinary skill in the art understands "randomly selected" to include information selected by both true and pseudo-random means. FN104

FN102. *See* Alliance Mem. at 15-19; Alliance Reply at 6-7.

FN103. *See id*.

FN104. *See* CIAS Mem. at 22-23. The Court uses the terms "pseudo-random" and "true random" for clarity.

Each side has provided expert testimony to support its position, but neither expert provides additional support, making their assertions less helpful.FN105 The specification is silent. Alliance makes the somewhat convoluted argument that because the specification does not teach the use of an algorithm for information selection-which no party disputes would be a pseudo-random selection process-"randomly selected" should be construed to refer only to true random selection.FN106 But Alliance does not argue, nor could it, that the use of an algorithm is the *only* means of pseudo-random selection, so that its absence necessitates the exclusion of pseudo-random selection altogether.

FN105. *See* Roberts Decl., Exhibit M ("Williams Expert Report") at 1-2; Cohen Decl., Exhibit 1 ("Cohen Expert Report") at para. 16.

FN106. *See* Alliance Mem. at 17-18.

Each side points to prior art to support its position. Alliance cites to Shoshani, which explicitly defines " 'random numbers' [to mean] true random numbers, as well as Pseudo-random numbers." FN107 Alliance argues that Shoshani must have included this definition because the normal meaning of "random" as excluding pseudo-random would otherwise apply. In other words, Shoshani had to provide its own definition to bring pseudo-random within "random." In turn, CIAS cites to U.S. Patent No. 6,048,269 ("Burns"), a slot machine system patent, which discloses use of a "unique random number" that nonetheless is generated by a computer and therefore pseudo-random.FN108

FN107. Cohen Decl., Exhibit 2 ("Cohen Reply Report") at 6.

FN108. Harms Decl., Exhibit B ("Burns Patent") at 4:8-13, 6:21-45. CIAS cites also to U.S. Patent No. 4,448,419 ("Telnaes"), a gaming machine patent, which uses a "random number generator" to select the machine's stopping position. *See generally* id., Exhibit N ("Telnaes Patent"). It is not clear from the Telnaes claims or specification, however, whether the patent relies on a true or pseudo-random number generator, and thus it is also not clear what Telnaes meant by "random." Although Mr. Storch, one of the '422 patent inventors, states that he is familiar with the "type of slot machines described in" the Telnaes patent and that they do not use true random number generators, his professed experience with that genre of slot machines (which may very well include slot machines other than those described in Telnaes) cannot circumscribe the Telnaes language itself. *See* Storch Decl. para. 15.

[8] Finally, Alliance argues further that a sibling patent by the same inventors, U.S. Patent No. 5,367,148 (the "'148 patent"),FN109 recognizes that "random" does not include pseudo-random. A court may look to a sibling patent and the common application for the meaning of shared terms used in similar contexts.FN110 Both the '148 and ' 422 patents include the term "randomly selected" in the context of choosing information for counterfeit detection.FN111

FN109. The '422 and '148 patent derive from a common parent, U.S. Patent No. 4,814,589 (the "'589 patent"), and incorporate the parent's patent disclosure. *See* Roberts Decl, Ex. O ("'589 Patent").

FN110. *See, e.g.,* Intergraph Corp. v. Intel Corp., 89 Fed.Appx. 218, 225-26 (Fed.Cir.2004).

FN111. *See* '422 Patent at 51:15-52:24; Roberts Decl., Exhibit N ("'148 Patent") at 10:45-48.

The '148 patent describes a system in which "[e]ach random portion may contain one or more randomly selected digits. A random number generator may be used which may, e.g., randomly select digits based on cosmic noise." FN112 The '148 specification goes on to state, "[w]ith the applicants' random technique, the problems and worries described above for traditional serial numbers and ID numbers in accord with a secret algorithm are simply avoided." FN113 This distinction between the results of the '148 "randomly selected" technique and those of pseudo-random algorithmic methods indicates that the '148 technique is a true random one and, therefore, that the '148/'422 inventors used "random" to mean true random.

FN112. '148 Patent at 10:45-48.

FN113. Id. at 10:63-65.

Further, during prosecution of the '148 patent, the inventors described another patent, Zoltai, as disclosing a system in which

"[so-called] random process units at a central and remote location output the same code in response to the

same unit. The 'random' in [Zoltai's so-called] random process units is a misnomer. If both [Zoltai] units are truly random generators, there should be an infinitesimal or no chance for them both to output the same number at the same time ... [In fact,] Zoltai [elsewhere] discloses that the patterns are not random but 'predetermined from within the units' ... Thus, [Zoltai does] not disclose the use of random numbers." FN114

FN114. Roberts Decl., Exhibit P ("'148 File History") at 7.

Thus, the '148 inventors took prior art to task for using the term "random" incorrectly to include pseudo- or non-random information. This correction further clarifies that when the inventors themselves used "randomly selected" in the '148 patent, they referred to true random selection.

Since the '148 and '422 patents are siblings, the identical claim language of the former can be considered in construing the '422 patent's claims. FN115 Although it is a close question, the Court concludes that "randomly selected," as used by the '148 and '422 inventors, refers to true and not pseudo-random selection.

FN115. *See, e.g.,* Intergraph, 89 Fed.Appx. at 225-26; Jonsson v. Stanley Works, 903 F.2d 812, 818 (Fed.Cir.1990).

IV. Infringement

[9] "[W]hoever without authorization makes, uses, offers to sell, or sells any patented invention, within the United States or imports into the United States any patented invention during the term of the patent therefor [directly] infringes the patent." FN116 To establish direct infringement, a plaintiff must prove that one or more claims of the patent read on the accused device literally or under the doctrine of equivalents.FN117 Literal infringement requires that each and every limitation set forth in a claim appear in an accused product.FN118 Under the doctrine of equivalents, however, "[t]he scope of a patent is not limited to its literal terms but instead embraces all equivalents to the claims described." FN119 It thus permits the patentee to claim "insubstantial alterations that were not captured in drafting the original patent claim" and prevents infringers from pointing to inconsequential additions to escape literal infringement.FN120

FN116. 35 U.S.C. s. 271(a) (2000).

FN117. *See, e.g.,* Advanced Cardiovascular Sys., Inc. v. Scimed Life Sys., Inc., 261 F.3d 1329, 1336 (Fed.Cir.2001).

FN118. *See, e.g.,* Cross Med. Prods., Inc. v. Medtronic Sofamor Danek, Inc., 424 F.3d 1293, 1310 (Fed.Cir.2005).

FN119. Festo Corp. v. Shoketsu Kinzoku Kogyo Kabushiki Co., 535 U.S. 722, 732, 122 S.Ct. 1831, 152 L.Ed.2d 944 (2002).

FN120. Id. at 733, 122 S.Ct. 1831.

A. The SDS System

[10] CIAS contends that the SDS system infringes Claims 1 (as amended), 3, 5-7, and 9-12 of the '422 patent. All of those claims have in common the requirement that the counterfeit detection system provide for each object to have "unique authorized information associated therewith comprised of machine-readable code elements coded according to a detectable series." FN121

FN121. '422 Patent at 49:41-51:14.

It is undisputed that Alliance's SDS system produces for each eTicket an identification number comprised of five subparts: ticket type, property identifier, machine number, ticket number, and unique ticket identifier. FN122 The ticket number is a 5-digit serial number ranging from 00001 to 99999.FN123 The unique ticket identifier, in contrast, is a pseudo-random number, generated by a secret computer algorithm that uses the preceding ticket type, property identifier, machine, and ticket numbers as its inputs.FN124

FN122. *See* Alliance 56.1 para. 20; CIAS 56.1 para. 20.

FN123. *See* id.

FN124. *See* id.

This composite nature of the SDS eTicket identification number takes it outside the construed claim term "unique authorized information." As construed, "unique authorized information" excludes information other than serial information alone or randomly-selected information alone. Here, the SDS eTicket identification number does include a serial number, the five-digit ticket number, but includes also three non-serial, non-random numbers and the pseudo-random unique ticket identifier. This combination of data means that the SDS system does not read literally on the "unique authorized information" element of Claims 1, 3, 5-7, and 9-12, as it does not use serial information alone, nor randomly-selected information at all. Nor does the doctrine of equivalents apply, as the '422 inventors narrowed this claim during re-examination to exclude information other than serial information alone or randomly-selected information alone. They cannot now recover that surrendered subject matter by means of the doctrine of equivalents.FN125

FN125. *See* Festo, 535 U.S. at 733-34, 122 S.Ct. 1831 ("The doctrine of equivalents allows the patentee to claim those insubstantial alterations that were not captured in drafting the original patent claim but which could be created through trivial changes. When, however, the patentee originally claimed the subject matter alleged to infringe but then narrowed the claim in response to a rejection, he may not argue that the surrendered territory comprised unforeseen subject matter that should be deemed equivalent to the literal claims of the issued patent ... Prosecution history estoppel ensures that the doctrine of equivalents remains tied to its underlying purpose. Where the original application once embraced the purported equivalent but the patentee narrowed his claims to obtain the patent or to protect its validity, the patentee cannot assert that

he lacked the words to describe the subject matter in question.").

Further, and for much the same reason, the SDS system does not use information "comprised of machine-readable code elements coded according to a detectable series." As construed, a detectable series is "information in which a pattern, relationship, or arrangement may be detected through examination of a practical number of samples in the context in which the invention is used." Although an individual SDS eTicket identification number contains a serial number subpart (the ticket number), it is undisputed that the SDS *system* does not produce eTickets with identification numbers from which a pattern may be detected through examination of a practical number of samples. The final subpart of an SDS eTicket identification number is generated by a secret algorithm, which produces numbers that appear to be random.FN126 CIAS concedes that this final part of an SDS eTicket identification number is not a detectable series.FN127 Indeed, the '422 inventors distinguished between a detectable series and the results of such an algorithm during prosecution. FN128 Since part of the SDS eTicket identification number is not a detectable series, the entire numbers also are not a detectable series, and so the SDS system does not include that element.

FN126. *See* Alliance 56.1 para. 25; CIAS 56.1 para. 25. Although CIAS states that it disputes Alliance 56.1 para. 25, the disagreement goes to the definition of "random," not the results of the SDS algorithm. *See* CIAS 56.1 para. 25.

FN127. *See* CIAS Mem. at 29; Tr., Oct. 15, 2004, 62:20-63:1.

FN128. *See* '422 File History, Tab 8 ("a counterfeit detection system may utilize information coded according to a *detectable series,* such as sequential serial numbers. McNeight [ ] discloses a method for detecting counterfeits in which articles ... are coded in accordance with a *secret algorithm,* and in which counterfeits are detected by detecting codes which do not conform to the algorithm ... McNeight [ ] is premised on the use of a secret algorithm ... and does not recognize that a counterfeit detection system could use sequential serial numbers.... McNeight's authorized numbers conform to a secret algorithm and are different from a detectable series such as sequential serial numbers.") (emphasis in original).

Accordingly, the SDS system does not infringe Claims 1, 3, 5-7, or 9-12 either literally or under the doctrine of equivalents.

B. The SMS System

CIAS contends that the SMS system infringes Claims 13 and 14 of the '422 patent, both of which require the use of "unique randomly selected authorized information" to identify objects.FN129 "Randomly selected" has been construed to exclude pseudo-random selection and to refer to true random selection only.

FN129. *See* '422 Patent at 51:15-52:24.

It is undisputed that the SMS 18-digit eTicket identification number is comprised of five digits that identify the machine issuing the eTicket and thirteen digits that are generated by a secret algorithm, which uses a

machine identification number, casino identification number, the date, and the time as its input data.FN130 It is undisputed also that the SMS secret algorithm, like all algorithms, generates pseudo-random numbers.FN131 As the term "randomly selected" from Claims 13 and 14 has been construed to refer to true random selection only, the SMS system thus does not literally infringe those claims. CIAS argues that the doctrine of equivalents should apply here, as Alliance has conceded that pseudo-random information presents "the appearance of randomness," arguably the crucial deterrence function of a counterfeit detection system.FN132 Alliance does not address this argument, but since the SMS system does not infringe Claims 13 and 14 for an independent reason, it is ultimately an academic point.

FN130. *See* Alliance 56.1 para. 23; CIAS 56.1 para. 23.

FN131. *See* Alliance 56.1 para. 25; CIAS 56.1 para. 25. Although CIAS states that it disputes Alliance 56.1 para. 25, the disagreement goes to the definition of "random," not the results of the SMS algorithm. *See* CIAS 56.1 para. 25.

FN132. CIAS Mem. at 33.

As with the SDS system, the SMS system does not use "unique ... authorized information," as that term has been construed to exclude information other than serial information alone or randomly-selected information alone. It is undisputed that the SMS 18-digit eTicket identification number is comprised of five digits that identify the machine issuing the eTicket and thirteen digits that are generated by a secret algorithm, which uses a machine identification number, casino identification number, the date, and the time as its input data. FN133 As with the SDS system, this multi-type information (part serial, part non-serial) contradicts the "unique ... authorized information" element of Claims 13 and 14, as it is neither serial information alone nor randomly-selected information at all. Again, since the inventors voluntarily narrowed the scope of the patent during re-examination to exclude information other than serial information alone or randomly-selected information alone, the doctrine of equivalents does not apply.FN134

FN133. *See* Alliance 56.1 para. 23; CIAS 56.1 para. 23.

FN134. *See* Festo, 535 U.S. at 733-34, 122 S.Ct. 1831.

Accordingly, the SMS system does not infringe Claim 13 or 14 either literally or under the doctrine of equivalents.

V. Conclusion

Alliance's motion for summary judgment dismissing the complaint is granted. As this moots defendants' counterclaim, the action is dismissed in its entirety.

SO ORDERED.

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