

No. 2016-1499

**United States Court of Appeals
for the Federal Circuit**

RECOGNICORP, LLC,
Plaintiff-Appellant,

v.

**NINTENDO CO., LTD. and
NINTENDO OF AMERICA, INC.**
Defendants-Appellees,

*Appeal from the United States District Court for the
Western District of Washington in Case No. 2:12-cv-
01873-RAJ, Judge Richard A. Jones.*

**PLAINTIFF-APPELLANT RECOGNICORP, LLC'S
COMBINED PETITION FOR REHEARING
AND REHEARING EN BANC**

Jonathan D. Baker
FARNEY DANIELS PC
411 Borel Avenue, Suite 310
San Mateo, CA 94402
Telephone: 424.268.5200
Facsimile: 424.268.5219
JBaker@farneydaniels.com

David P. Swenson
FARNEY DANIELS PC
3144 Hennepin Ave. S, Ste. 201
Minneapolis, MN 55408
Telephone: 612.424.9220
Facsimile: 612.424.9230
DSwenson@farneydaniels.com

Counsel for Plaintiff-Appellant

May 30, 2017

CERTIFICATE OF INTEREST

1. The full name of every party represented by me is:
RecogniCorp, LLC
2. There are no other real parties in interest represented by me.
3. Apache Innovations, L.P. is a corporate parent that owns 10% or more of the stock of RecogniCorp, LLC.
4. The names of all the firms or lawyers that appeared for the party now represented by me in the trial court or are expected to appear in this court are as follows:
 - David P. Swenson, Jonathan D. Baker, Steven R. Daniels, Melissa V. Melton, and Caryn L. Cross of FARNEY DANIELS PC
 - Timothy Devlin and Lei Sun formerly of FARNEY DANIELS PC
 - Bradley M. Ganz and Lloyd L. Pollard of Ganz Law P.C.
 - Mark S. Carlson of Hagens Berman Sobol Shapiro LLP
 - Ryan Blair Meyer of Dorsey & Whitney

Dated: May 30, 2017

/s/ Jonathan D. Baker
Jonathan D. Baker

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STATEMENT OF COUNSEL

Based on my professional judgment, I believe the panel decision is contrary to the following decisions of the Supreme Court of the United States and the precedents of this Court:

- *Alice Corp. Pty. Ltd. v. CLS Bank Int’l*, 134 S. Ct. 2347 (2014)
- *Bilski v. Kappos*, 561 U.S. 593 (2010)
- *Enfish, LLC v. Microsoft Corp.*, 822 F.3d 1327 (Fed. Cir. 2016)
- *McRO, Inc. v. Bandai Namco Games Am. Inc.*, 837 F.3d 1299 (Fed. Cir. 2016)
- *Amdocs (Isr.) Ltd. v. Openet Telecom, Inc.*, 841 F.3d 1288 (Fed. Cir. 2016)

Based on my professional judgment, I believe this appeal requires an answer to one or more precedent-setting questions of exceptional importance:

1. Whether patents which involve encoding or decoding of data categorically fail the first step of the *Alice* test for subject matter eligibility?
2. Whether novel mathematical limitations are categorically excluded from constituting inventive concepts under the second step of the *Alice* test?
3. Whether patents that recite improved methods for encoding data on a computer by reducing the required memory and bandwidth using novel mathematical processes are categorically excluded from patent protection?

/s/ Jonathan D. Baker

Jonathan D. Baker

Counsel for Plaintiff-Appellant

ARGUMENT

I. BACKGROUND

A. Introduction

The panel opinion in this case threatens the validity of all encoding and decoding patents, including patents covering important technologies such as MP3 audio coding, MPEG video coding, and JPEG image coding. Encoding and decoding data using computers is an important and innovative field of technology. Data compression is a type of encoding that allows data to be stored using less memory and to be transmitted more quickly. Many of the modern advances in computer technology, consumer electronics, and telecommunications were made possible by the development of new and better encoding algorithms that made it feasible to store and transmit large amounts of data on storage mediums or over networks that have limited data capacity. For example, MP3 players, DVD and Blu-ray players, digital cameras, cell phones, videoconferencing systems, voice-over-IP telephone systems, and online video services such as Netflix and YouTube, all use encoding in the form of data compression to reduce the bandwidth and storage space required for audio/video content.¹ Error correction coding is another important encoding technology which allows reliable communication even in the

¹ See, e.g., *Lucent Technologies, Inc. v. Gateway, Inc.*, 543 F.3d 710, 715 (Fed. Cir. 2008) (describing MP3); *JVC Kenwood Corp. v. Nero, Inc.*, 797 F.3d 1039, 1041 (Fed. Cir. 2015) (describing use of MPEG encoding on DVD and Blu-Ray discs).

presence of errors. For example, disk drives and optical drives use error correction coding to ensure that data can be correctly retrieved even if some of the bits become corrupted.² Similarly, encryption is another type of encoding that brings security and privacy to a user's data. For example, every time a user visits his bank's website, secure socket layer (SSL) technology uses encoding to encrypt the communications.³

Accordingly, numerous courts throughout the country have long considered patents directed to the encoding or decoding of data to be eligible for patent protection. *See, e.g. DDR Holdings, LLC v. Hotels.com, L.P.*, 773 F.3d 1245, 1259 (Fed. Cir. 2014) (suggesting that “an improved, particularized method of digital data compression” would be patentable); *Cal. Inst. of Tech. v. Hughes Communs., Inc.*, 59 F. Supp. 3d 974, 1000 (C.D. Cal. 2014) (finding patent directed to “using a linear transform operation to encode data” patentable because it “solve[d] a problem unique to computing (data corruption due to noise)”); *TQP Dev., LLC v. Intuit Inc.*, 2014 U.S. Dist. LEXIS 20077 (E.D. Tex. Feb. 19, 2014) (Bryson, J.)

² *See, e.g., France Telecom SA v. Marvell Semiconductor Inc.*, 39 F. Supp. 3d 1080, 1091 (N.D. Cal. 2014) (finding “method for error-correction coding of source digital data elements” to be patent-eligible).

³ *See, e.g., Federal Financial Institutions Examination Council, “Authentication in an Internet Banking Environment,” available at https://www.ffiec.gov/pdf/authentication_guidance.pdf (“The use of digital certificates coupled with encrypted communications (e.g., Secure Socket Layer, or SSL) is one” of the “[t]echniques for authenticating a [banking] Web site.”).*

(finding encryption technique patentable because it provided “a way of making computer communication itself more effective by making that communication more secure”).

Despite the wide recognition of the technological importance of encoding and decoding techniques, the panel’s precedential decision in *RecogniCorp, LLC v. Nintendo Co., Ltd.* threatens the validity of all encoding and decoding patents. In a clear deviation from Supreme Court and Federal Circuit precedent, the *RecogniCorp* panel found the patent-in-suit invalid by creating what are in effect new *per se* rules of patentability for encoding and decoding patents.

In particular, *RecogniCorp* holds that patents directed to “encoding and decoding,” regardless of the specific method of encoding or the subject matter encoded, are categorically directed to an “abstract idea” under step one of the *Alice* test. Slip Op. at 7 (analogizing the patent at issue to both “Morse Code” and “Paul Revere’s “one if by land, two if by sea” signaling system).⁴ Moreover, the *RecogniCorp* panel also held that novel mathematical algorithms or formulas that

⁴ Notably the Supreme Court found Morse’s patent valid except for its broadest claim. *O’Reilly v. Morse*, 56 U.S. 62 (1854). Specifically, the Court only invalidated the claim to “the use of...electro-magnetism, however developed, for making or printing intelligible characters, signs or letters at any distances.” *Id.* at 62. But the Court found the other claims valid, including the claim directed to Morse Code, i.e., “the system of signs, consisting of dots and spaces, and of dots, spaces, and horizontal lines.” *Id.* at 86, 112 (“We perceive no well founded objection to...his right to a patent for the first seven inventions.”).

improve the manner of encoding over the prior art are not patentable under step one, holding that “[a]dding one abstract idea (math) to another abstract idea (encoding and decoding) does not render the claim nonabstract.” Slip. Op. at 7-8. In doing so, the panel failed to follow this Court’s precedent from *Enfish* which affirmed the patentability of software inventions that “are directed to an improvement of an existing technology.” *Enfish, LLC v. Microsoft Corp.*, 822 F.3d 1327, 1337 (Fed. Cir. 2016). In particular, the *RecogniCorp* panel held that *Enfish* does not apply—even when the patent improves an existing technological process—unless the patent “improves the functioning of a computer.” Slip. Op. at 8. This is not only inconsistent with *Enfish*, but is plainly contrary to *Alice*’s holding that inventions can be patentable when they “improve the functioning of the computer itself” or when “they effect an improvement in [a]...technology or technical field.” *Alice Corp. Pty. Ltd. v. CLS Bank Int’l*, 134 S. Ct. 2347, 2360 (2014).

The *RecogniCorp* panel’s analysis under *Alice*’s step two similarly threatens the patentability of all novel encoding techniques. In particular, *RecogniCorp* categorically holds that mathematical formulas or algorithms cannot constitute patent-eligible inventive concepts under step two of the *Alice* test, stating that “[a] claim directed to an abstract idea does not automatically become eligible merely by adding a mathematical formula” and that “[t]he addition of a mathematical

equation that simply changes the data into other forms of data cannot save it.”

Slip. Op.at 10. But innovations in encoding technology, including data compression and encryption, rely upon the invention of new and better mathematical algorithms.⁵

In light of the broad language in *RecogniCorp* rejecting the patentability of encoding, no matter how novel, sophisticated, or inventive, any patent involving any type of encoding is at risk of being held invalid for claiming unpatentable subject matter. As discussed in further detail below, the *RecogniCorp* panel’s categorical rules regarding encoding technology are inconsistent with well-established Supreme Court and Federal Circuit precedent. Thus, this Court should grant rehearing and confirm the patent-eligibility of inventions in this important technological field.

⁵ See, e.g., ISO/IEC 14496-10:2008 Standard, “Information technology -- Coding of audio-visual objects -- Part 10: Advanced Video Coding,” available at <https://www.iso.org/standard/50726.html> (noting that new video encoding standard was developed “in response to the growing need for higher compression of moving pictures for various applications such as digital storage media, television broadcasting, Internet streaming, and real-time audiovisual communication” and improves upon prior art encoding techniques by using “syntactical features with associated decoding processes...that can be used to achieve highly efficient compression” including “motion vectors for block-based inter-picture prediction to exploit temporal statistical dependencies between different pictures.”).

B. Factual Background

The panel decision correctly described the most important improvements of U.S. Patent No. 8,005,303 (“the ’303 patent”) over the prior art:

Prior to the invention disclosed in the ’303 patent, composite facial images typically were stored in file formats such as “bitmap,” “gif,” or “jpeg.” But these file formats required significant memory, and compressing the images often resulted in decreased image quality. Digital transmission of these images could be difficult. The ’303 patent sought to solve this problem by encoding the image at one end through a variety of image classes that required less memory and bandwidth, and at the other end decoding the images.

Slip Op. at 2; ’303 patent at 1:35-37, 1:57-2:6.

Consistent with this description, RecogniCorp argued that the claims, rather than being directed to the abstract idea of “encoding and decoding” generally, were instead directed to “a particular improved encoding process using a specific mathematical algorithm to solve the technological problem of storing and transmitting computer-generated composite facial images.” Appeal Br. at 11.

In particular, claim 1 of the ’303 patent, which the panel found representative, recites:

1. A method for creating a composite image, comprising:
 - displaying facial feature images on a first area of a first display via a first device associated with the first display, wherein the facial feature images are associated with facial feature element codes;
 - selecting a facial feature image from the first area of the first display via a user interface associated with the first device, wherein the first device incorporates the selected facial feature image into a composite image on a second area of the first display, wherein the composite image is associated with a

composite facial image code having at least a facial feature element code and wherein the composite facial image code is derived by performing at least one multiplication operation on a facial code using one or more code factors as input parameters to the multiplication operation; and reproducing the composite image on a second display based on the composite facial image code.

RecogniCorp identified at least two inventive concepts recited in the claims of the '303 patent: (1) using a single composite facial image code composed of a number of facial feature element codes, such as for lips or eyes, to represent the entire facial image instead of encoding the image pixel-by-pixel as was done in the prior art; and (2) using a particular algorithm to combine the various facial feature element codes together into a single composite facial image code by multiplying the facial code by a code factor for each facial feature. Appeal Br. at 30-31; Reply Br. at 18-23.

II. THE PANEL OPINION IS CONTRARY TO SUPREME COURT AND FEDERAL CIRCUIT PRECEDENT

A. The Panel Opinion Failed to Follow Binding Precedent Regarding Step One of the *Alice* Test

1. The Panel Opinion Failed to Consider Whether the Claims Improve an Existing Technological Process as Required by Binding Precedent, and Instead Erroneously Focused Solely on Whether the Claims Improve the Functioning of the Computer Itself

The Supreme Court's *Alice* standard requires that courts "first determine whether the claims at issue are directed to a patent-ineligible concept." *Alice Corp. Pty Ltd. v. CLS Bank Int'l*, 134 S. Ct. 2347, 2355 (2014). As this Court held in

Enfish, the Supreme Court’s “formulation plainly contemplates that the first step of the inquiry is a meaningful one, ...[and] therefore, cannot simply ask whether the claims *involve* a patent-ineligible concept...[but] [r]ather the ‘directed to’ inquiry applies a stage-one filter to claims, considered in light of the specification, based on whether ‘their character as a whole is directed to excluded subject matter,’” and in particular, “the focus of the claimed advance over the prior art.” *Enfish, LLC v. Microsoft Corp.*, 822 F.3d 1327, 1335 (Fed. Cir. 2016). As *Enfish* recognized, *Alice* expressly identifies two distinct ways of demonstrating that computer-related technology is patentable under step one: “claims ‘purport[ing] to improve the functioning of the computer itself,’ or ‘improv[ing] an existing technological process.’” *Id.* at 1335 (emphasis added); *see also Alice*, 134 S. Ct. at 2358-59 (“The method claims do not, for example, purport to improve the functioning of the computer itself.... Nor do they effect an improvement in any other technology or technical field.”).

Notably, the panel’s opinion acknowledged that “[t]he ’303 patent sought to solve [the] problem” presented by prior art “file formats”—which “required significant memory, and...often resulted in decreased image quality”—“by encoding the image at one end through a variety of image classes that required less memory and bandwidth, and at the other end decoding the images.” *Slip Op.* at 2. Thus, plainly, the panel opinion acknowledged that the ’303 patent improves upon

existing technology in the “technical field” of image encoding and compression. Nonetheless, the panel opinion rejected patentability under *Alice*’s step one and *Enfish* by noting that “[u]nlike *Enfish*, claim 1 does not claim a software method that improves the functioning of a computer.” Slip Op. at 8. Even if that were true—it is not—that does not end the inquiry into whether the claims are “directed to” an abstract idea under step one. *Alice* and *Enfish* make clear that claims may still be patentable, even where they do not improve the functioning of the computer, if “they effect an improvement in” a “technology or technical field.” Thus, the panel opinion’s holding that “improv[ing] the functioning of the computer” itself is the sole and exclusive manner of showing patentability under step one for computer-related technologies was clearly inconsistent with *Alice* and *Enfish*.

Moreover, the panel could not have concluded that the ’303 patent did not improve upon a technology or technical field. Indeed, the panel opinion acknowledged that the ’303 patent improved upon the prior art methods of encoding facial images. Slip Op. at 2. The panel opinion also did not have any basis for holding that the fields of image encoding and data compression were not “technical field[s]” in which patentable improvements could be made. As such, the panel could not have concluded that the ’303 patent did not effect an improvement in a technical field.

2. The Panel Opinion Applied an Unduly Narrow Interpretation of What it Means to “Improve the Functioning of a Computer” That Conflicts with Binding Precedent

The panel opinion also failed to follow precedent in concluding that the claims “do[] not claim a software method that improves the functioning of a computer.” Slip Op. at 8. The panel opinion provides little analysis for that conclusion which is plainly contrary to the opinion’s earlier acknowledgment that “[t]he ’303 patent[’s]...variety of image classes [] required less memory and bandwidth.” Slip Op. at 2. These technological improvements are strikingly similar to the types of improvements that were found patentable in *Enfish*, which held that “the self-referential table recited in the claims on appeal is a specific type of data structure designed to improve the way a computer stores and retrieves data in memory.” *Enfish*, 822 F.3d at 1339; *see also id.* at 1337 (“our conclusion that the claims are directed to an improvement of an existing technology is bolstered by the specification’s teachings that the claimed invention achieves other benefits over conventional databases, such as increased flexibility, *faster search times*, and *smaller memory requirements*.”) (emphasis added). Thus, reducing bandwidth and memory storage requirements are specific improvements in the functioning of a computer.

The panel opinion apparently dismissed these improvements by analogizing to *Digitech Image Technologies, LLC v. Electronics for Imaging, Inc.*, 758 F.3d

1344 (Fed. Cir. 2014). In particular, the panel stated that, like *Digitech*, “a user starts with data, codes that data using ‘at least one multiplication operation,’ and ends with a new form of data.” Slip. Op. at 9. But that is plainly not what the claims of the ’303 patent recite. They do not recite “start[ing] with data,” or even “gathering...data [without]...input from a physical device,” but rather begin with “displaying facial feature images” which are “select[ed]” “via a user interface.” See, e.g., ’303 patent claim 1. Similarly, the claims do not “end with a new form of data,” but rather they end with the *display*, on a second display, of the reproduction of a facial image based on the composite facial image code. See *id.*

Moreover, that *some* claim limitations perform mathematical operations on data using a computer cannot be the sole basis for finding a patent ineligible under step one. That would be plainly inconsistent with this Court’s holdings in *Enfish*, *McRO*, and *Amdocs*, all of which started with data, performed mathematical operations on a computer with that data, and then ended with the data in a new form. See *McRO, Inc. v. Bandai Namco Games Am. Inc.*, 837 F.3d 1299, 1307-08 (Fed. Cir. 2016) (starting with “a first set of rules” and “a timed data file of phonemes,” performing mathematical operations, and ending in “a final stream of output morph weight sets”); *Enfish*, 822 F.3d at 1336-37 (starting with a “logical table [] comprised of rows and columns,” performing mathematical operations to “[a]ssign each row and column an object identification number (OID),” and ending

in a “self-referential table for a computer database”); *Amdocs (Isr.) Ltd. v. Openet Telecom, Inc.*, 841 F.3d 1288, 1299 (Fed. Cir. 2016) (starting with “a first network accounting record,” performing mathematical operations to “correlate[e] the first network accounting record with accounting information available from a second source,” and ending with an “enhance[d]” “accounting record.”). Indeed, because all computer technology involves, at some level, the processing and transformation of data using mathematical operations, the panel’s opinion in this case, and its characterization of *Digitech*, is inconsistent with *Enfish*’s holding that “[s]oftware can make non-abstract improvements to computer technology.” *Enfish*, 822 F.3d at 1335.

Additionally, *Digitech* is further distinguishable from the present case because *Digitech* merely involved “taking two data sets and combining them into a single data set” without being “tied to a specific structure or machine.” *Digitech*, 758 F.3d at 1351. Thus, it is not surprising that there was no asserted improvement in the operation of a computer or to existing technology in *Digitech*. By contrast, the claims in this case plainly recite limitations that use a specific computer, which, as the panel opinion acknowledges, benefits from the invention’s improvements in bandwidth and memory storage.⁶ Thus, the panel erred by extending *Digitech* to

⁶ The panel opinion mentions in passing that “claim 1 does not even require a computer; the invention can be practiced verbally or with a telephone.” Slip. Op. at 10. This appears to be an inadvertent misstatement by the panel because claim 1

exclude patentability to any computer-based processing of data, and thereby ignored the tangible improvements in bandwidth and memory savings provided by the '303 patent.

B. The Panel Opinion Failed to Follow Binding Precedent Regarding Step Two of the *Alice* Test By Adopting a New Legal Principle that Excludes Innovative Mathematical Algorithms from Constituting Inventive Concepts

The panel opinion is also inconsistent with this Court's precedent regarding the second step of the *Alice* test. As noted in the panel opinion, "RecogniCorp argue[d] that the claims of the '303 patent contain an inventive concept sufficient to render them patent-eligible," including the "facial feature element codes" and the "particular encoding process using the specific algorithm disclosed" that uses those codes to create a "composite facial image code." Moreover, after the user's selection of the facial features and the derivation of the composite facial image code, the claims then recite "reproducing the composite image on a second display

plainly recites a computerized "user interface" which "display[s] facial feature images on a first area of a first display" and permits "selecting a facial feature image from the first area of the first display via a user interface associated with the first device." '303 patent claim 1. Moreover all of the claims inherently require a computer associated with the second display to reproduce the composite image on a second display using the composite facial image code. *See, e.g.*, '303 patent claim 1 ("reproducing the composite image on a second display based on the composite facial image code."); *see also* '303 patent at 12:1-10. The panel's citation to the specification regarding the possibility of practicing the claims "verbally or with a telephone" refers to the *transmission* of the composite facial image code between the first and second computers, which is not even recited as a limitation of any independent claim. '303 patent at 11:49-12:3.

based on the composite facial image code.” This limitation therefore reflects the benefits in “memory and bandwidth” described in the specification of the patent—the image can be reproduced from the composite facial image code, which requires less memory and can be sent more quickly than the prior art methods. ’303 patent at 1:61-2:12, 2:41-60, 9:57-10:3, 12:1-10.

The panel rejected the potential that any such combination of facial feature element codes, code factors, and mathematical algorithms could result in a patentable invention by broadly holding that “[t]he addition of a mathematical equation that simply changes the data into other forms of data cannot save it.” Slip Op. at 10. That is, the panel rejected the potential that mathematical equations and algorithms, even when implemented on a computer to produce tangible benefits in that computer’s operation, can constitute patentable inventive concepts under the second step of *Alice*. This is plainly inconsistent with precedent from the Supreme Court and this Court.

As a threshold issue, the proper approach in analyzing step two is to analyze whether the claims recite “an element or combination of elements that is ‘sufficient to ensure that the patent in practice amounts to significantly more than a patent upon the [ineligible concept] itself.’” *Alice*, 134 S. Ct. at 2355. The panel opinion failed to perform any such analysis—it did not attempt to analyze whether the “facial feature element codes,” “code factors,” and the “particular encoding process

using the specific algorithm disclosed” that uses those codes to create a “composite facial image code” was “significantly more” than “the abstract idea of encoding and decoding image data.” Slip Op. at 7, 10. Rather, the panel bypassed that analysis by categorically holding that “a mathematical equation that simply changes the data into other forms of data” cannot constitute an inventive concept. Slip Op. at 10. But improvements in computer and software technology often take the form of new and innovative mathematical operations and algorithms, which when appropriately claimed as being performed on a computer as part of a technological process, should certainly be eligible for patent protection. Indeed, the improvements in *Enfish*, *McRO*, and *Amdocs* all reflect improvements which are, at some level, inherently implemented by mathematical operations.

Finally, the panel opinion reflects, in essence, a categorical approach to patents relating to encoding technology (which includes encryption and data compression), and holds broadly that such patents are not eligible for protection where the improvement is in the nature of mathematical equations or algorithms. But the Supreme Court has repeatedly rejected such fixed or categorical approaches to subject matter patentability. Indeed, in *Bilski*, the Supreme Court rejected the proposal to create a categorical exception to patentability for business method patents. *Bilski v. Kappos*, 561 U.S. 593, 606-09 (2010). Moreover, the Supreme Court rejected the “the machine-or-transformation test” because “it would

create uncertainty as to the patentability of software, advanced diagnostic medicine techniques, and inventions based on linear programming, data compression, and the manipulation of digital signals.” *Id.* at 605. The panel’s opinion runs directly contrary to this Supreme Court precedent which indicates that innovations in these fields, including data compression, may be patent-eligible even though they all involve, in essence, “mathematical equation[s]” and algorithms “that simply change[] data into other forms of data.”

III. CONCLUSION

The panel opinion employs categorical rules regarding subject matter patentability that are inconsistent with the Supreme Court’s *Alice* standard and with this Court’s precedents in *Enfish*, *McRO*, and *Amdocs*. In doing so, the panel opinion threatens to render all encoding and decoding patents invalid in technological fields as important and innovative as data compression, error correction coding, and encryption. Therefore, this Court should grant rehearing and find that the ’303 patent is directed to patent-eligible subject matter.

Dated: May 30, 2017

Respectfully submitted,

/s/ Jonathan D. Baker

Jonathan D. Baker
FARNEY DANIELS PC
411 Borel Avenue, Suite 310
San Mateo, CA 94402
Telephone: 424.268.5200
Facsimile: 424.268.5219
JBaker@farneydaniels.com

David P. Swenson
FARNEY DANIELS PC
3144 Hennepin Ave. S, Suite 201
Minneapolis, MN 55408
Telephone: 612.424.9220
Facsimile: 612.424.9230
DSwenson@farneydaniels.com

*Counsel for Plaintiff-Appellant
RecogniCorp, LLC*

ADDENDUM

**United States Court of Appeals
for the Federal Circuit**

RECOGNICORP, LLC,
Plaintiff-Appellant

v.

**NINTENDO CO., LTD., NINTENDO OF AMERICA,
INC.,**
Defendants-Appellees

2016-1499

Appeal from the United States District Court for the
Western District of Washington in No. 2:12-cv-01873-
RAJ, Judge Richard A. Jones.

Decided: April 28, 2017

JONATHAN DANIEL BAKER, Farney Daniels PC, San
Mateo, CA, argued for plaintiff-appellant. Also represent-
ed by DAVID P. SWENSON, Minneapolis, MN.

MARK S. PARRIS, Orrick, Herrington & Sutcliffe LLP,
Seattle, WA, argued for defendants-appellees. Also repre-
sented by DONALD E. DAYBELL, Irvine, CA; MARC SHAPIRO,
New York, NY; WILL MELEHANI, San Francisco, CA.

Before LOURIE, REYNA, and STOLL, *Circuit Judges*.

REYNA, *Circuit Judge*.

RecogniCorp sued Nintendo for patent infringement. The district court found that RecogniCorp's patent claims ineligible subject matter and, based on that finding, granted Nintendo's motion for judgment on the pleadings. RecogniCorp appeals. The patent's claims are directed to the abstract idea of encoding and decoding image data, and the claims do not contain an inventive concept sufficient to render the patent eligible. Therefore, we affirm.

BACKGROUND

1. The '303 Patent

U.S. Patent No. 8,005,303 ("303 patent") patent is entitled "Method and Apparatus for Encoding/Decoding Image Data." J.A. 17. It teaches a method and apparatus for building a composite facial image using constituent parts. *See, e.g.*, J.A. 27 (col. 1 ll. 30–56 and col. 2 ll. 19–28); J.A. 28 (col. 4 ll. 35–45).

Prior to the invention disclosed in the '303 patent, composite facial images typically were stored in file formats such as "bitmap," "gif," or "jpeg." But these file formats required significant memory, and compressing the images often resulted in decreased image quality. Digital transmission of these images could be difficult. The '303 patent sought to solve this problem by encoding the image at one end through a variety of image classes that required less memory and bandwidth, and at the other end decoding the images.

RECOGNICORP, LLC V. NINTENDO CO., LTD.

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For purposes of this appeal, we find amended claim 1 to be representative.¹ It recites:

1. A method for creating a composite image, comprising:

displaying facial feature images on a first area of a first display via a first device associated with the first display, wherein the facial feature images are associated with facial feature element codes;

selecting a facial feature image from the first area of the first display via a user interface associated with the first device, wherein the first device incorporates the selected facial feature image into a composite image on a second area of the first display, wherein the composite image is associated with a composite facial image code having at least a facial feature element code and wherein the composite facial image code is derived by performing at least one multiplication operation on a facial code using one or more code factors as input parameters to the multiplication operation; and

reproducing the composite image on a second display based on the composite facial image code.

J.A. 35 (US 8,005,303 C1, col. 1 ll. 23–40) (Reexamination Certificate for '303 patent)).

¹ RecogniCorp argued before the district court that “each asserted claim must be analyzed separately.” J.A. 3 n.1. RecogniCorp does not maintain this argument on appeal; it therefore is waived. *SmithKline Beecham Corp. v. Apotex Corp.*, 439 F.3d 1312, 1319 (Fed. Cir. 2006). We discuss limitations of other claims where appropriate.

2. District Court Litigation and Reexamination

The '303 patent issued on August 23, 2011. J.A. 17. It later was assigned to RecogniCorp, LLC (“RecogniCorp”). In 2012, RecogniCorp filed suit in the United States District Court for the District of Oregon against Nintendo Co., Ltd. and Nintendo of America, Inc. (together, “Nintendo”) for infringement of several claims of the '303 patent. J.A. 49, 196. In 2012, the case was transferred to the United States District Court for the Western District of Washington.

The district court stayed the case in 2013 pending a reexamination by the United States Patent and Trademark Office (“PTO”). The reexamination focused on obviousness and resulted in several amended claims, including claim 1. *See* J.A. 35. The amended claims all contain similar language regarding multiplication operations. Specifically, the limitation “wherein the composite facial image code is derived by performing at least one multiplication operation on a facial code using one or more code factors as input parameters to the multiplication operation” (or a limitation substantially identical) was added to the independent claims. J.A. 4. In light of these amendments, the PTO issued a reexamination certificate for the '303 patent. Upon completion of the reexamination in 2014, the district court lifted the stay.

In March 2015, Nintendo filed a motion for judgment on the pleadings, asserting that the claims were ineligible under 35 U.S.C. § 101. Section 101 provides that “[w]hoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor” There is an exception to that general principle: subject matter directed to laws of nature, natural phenomena, or abstract ideas is not patent-eligible. *Alice Corp. v. CLS Bank Int’l*, 134 S. Ct. 2347, 2354 (2014). The Supreme Court has established a two-

step test to determine whether patent claims are directed to ineligible subject matter. In the first step, “we determine whether the claims at issue are directed to one of those patent-ineligible concepts.” *Id.* at 2355. If the answer in step one is yes, “we then ask, ‘[w]hat else is there in the claims before us?’” *Id.* (quoting *Mayo Collaborative Servs. v. Prometheus Labs., Inc.*, 132 S. Ct. 1289, 1297 (2012)). In other words, step two asks whether the patent claims an “‘inventive concept’ sufficient to ‘transform’ the claimed abstract idea into a patent-eligible application.” *Id.* at 2357 (quoting *Mayo*, 132 S. Ct. at 1294, 1298).

In December 2015, without issuing a claim construction ruling, the district court granted Nintendo’s motion. At *Alice* step one, the district court concluded that the asserted claims are “directed to the abstract idea of encoding and decoding composite facial images using a mathematical formula.” J.A. 8. According to the district court:

[The claims] boil down to: (1) displaying potential input variables (the facial features and their modifications), (2) selecting and manipulating the inputs, (3) deriving an output code by performing a “multiplication operation” on the inputs, and (4) outputting the original inputs on another device by performing the sequence in reverse on another device.

J.A. 8. The district court analogized the process to “paint by numbers.” J.A. 8.

At *Alice* step two, the district court found that the ’303 patent contains no inventive concept. J.A. 11. It stated that “the entirety of the ’303 Patent consists of the encoding algorithm itself or purely conventional or obvious pre-solution activity and post-solution activity insufficient to transform the unpatentable abstract idea into a patent-eligible application.” J.A. 14 (quotation marks, citations, and alterations omitted). Based on these find-

ings, the district court granted Nintendo's motion for judgment on the pleadings.

RecogniCorp timely appeals. We have jurisdiction under 28 U.S.C. § 1295(a)(1).

DISCUSSION

1. Standard of Review

We review procedural aspects of motions for judgment on the pleadings using regional circuit law, which in this case is the Ninth Circuit. *McRO, Inc. v. Bandai Namco Games Am. Inc.*, 837 F.3d 1299, 1311 (Fed. Cir. 2016). The Ninth Circuit reviews motions for judgment on the pleadings *de novo*. *Enron Oil Trading & Transp. Co. v. Walbrook Ins. Co.*, 132 F.3d 526, 528 (9th Cir. 1997). We review § 101 patent eligibility determinations *de novo*. *McRO*, 837 F.3d at 1311.

2. Analysis

A. *Alice* Step One

Under the first step of *Alice*, we decide whether the claims are directed to ineligible subject matter, such as an abstract idea. *McRO*, 837 F.3d at 1312; *Internet Patents Corp. v. Active Network, Inc.*, 790 F.3d 1343, 1346 (Fed. Cir. 2015). The inquiry often is whether the claims are directed to “a specific means or method” for improving technology or whether they are simply directed to an abstract end-result. *McRO*, 837 F.3d at 1314. If the claims are not directed to an abstract idea, the inquiry ends. *Thales Visionix Inc. v. United States*, 850 F.3d 1343, 1349 (Fed. Cir. 2017).

While “generalized steps to be performed on a computer using conventional computer activity” are abstract, *Enfish, LLC v. Microsoft Corp.*, 822 F.3d 1327, 1338 (Fed. Cir. 2016), not all claims in all software patents are necessarily directed to an abstract idea, *Ultramercial, Inc. v. Hulu, LLC*, 772 F.3d 709, 715 (Fed. Cir. 2014). For

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example, we have held that software patent claims satisfy *Alice* step one when they are “directed to a specific implementation of a solution to a problem in the software arts,” such as an improvement in the functioning of a computer. *Enfish*, 822 F.3d at 1338–39.

We find that claim 1 is directed to the abstract idea of encoding and decoding image data. It claims a method whereby a user displays images on a first display, assigns image codes to the images through an interface using a mathematical formula, and then reproduces the image based on the codes. *See* J.A. 35 (col. 1 ll. 23–40). This method reflects standard encoding and decoding, an abstract concept long utilized to transmit information. *Cf. Intellectual Ventures I LLC v. Capital One Fin. Corp.*, 850 F.3d 1332, 1340–41 (Fed. Cir. 2017) (organizing, displaying, and manipulating data encoded for human- and machine-readability is directed to an abstract concept). Morse code, ordering food at a fast food restaurant via a numbering system, and Paul Revere’s “one if by land, two if by sea” signaling system all exemplify encoding at one end and decoding at the other end. Even the ’303 patent describes “a common technique for synthesizing single images of faces involv[ing] horizontally dividing the image of a face into bands for different features,” such that “[p]aper strips containing exemplary features [can] then be combined to form a composite drawing of a face.” J.A. 27 (col. 1 ll. 37–43).

RecogniCorp invokes *Diamond v. Diehr*, 450 U.S. 175 (1981), to support its argument that claiming the use of a mathematical formula does not necessarily render a patent ineligible. RecogniCorp is correct. In *Diehr*, the Supreme Court held that despite a method claim’s recitation of a mathematical formula, “a physical and chemical process for molding precision synthetic rubber products falls within the § 101 categories of possibly patentable subject matter.” *Id.* at 184. In confirming patentability, the Supreme Court focused not on the presence of a

mathematical formula but on the subject matter of the claims as a whole. *Id.* at 192 (“[A] claim containing a mathematical formula” satisfies § 101 when it “implements or applies that formula in a structure or process which, when considered as a whole, is performing a function which the patent laws were designed to protect.”). Here, the relevant inquiry does not turn one way or the other just on claim 1’s use of multiplication. *See* J.A. 35 (’303 Reexamination Certificate, col. 1 ll. 34–38). Rather, the focus is on the claim *as a whole*. *Diehr* is distinguishable because, outside of the math, claim 1 of the ’303 patent is not directed to otherwise eligible subject matter. Adding one abstract idea (math) to another abstract idea (encoding and decoding) does not render the claim non-abstract.

RecogniCorp argues that, as in *Enfish*, “the district court mischaracterized the invention using an improperly high level of abstraction that ignored the particular encoding process recited by the claims.” Appellant’s Op. Br. 11. In *Enfish*, we warned that “describing the claims at such a high level of abstraction and untethered from the language of the claims all but ensures that the exceptions to § 101 swallow the rule.” 822 F.3d at 1337. But the district court did not make that mistake regarding the ’303 patent. The claims of the ’303 patent are clearly directed to encoding and decoding image data. Unlike *Enfish*, claim 1 does not claim a software method that improves the functioning of a computer. *See id.* It claims a “process that qualifies as an ‘abstract idea’ for which computers are invoked merely as a tool.” *Id.* at 1336.

This case is similar to *Digitech Image Technologies, LLC v. Electronics for Imaging, Inc.*, 758 F.3d 1344 (Fed. Cir. 2014). There, the claims of the challenged patent were directed to the abstract idea of organizing information through mathematical correlations. *Id.* at 1350–51. We explained that the claim at issue “recites a process of taking two data sets and combining them into a

single data set” simply by organizing existing data into a new form. *Id.* at 1351. A process that started with data, added an algorithm, and ended with a new form of data was directed to an abstract idea. *Id.* In this case, the ’303 patent claims a method whereby a user starts with data, codes that data using “at least one multiplication operation,” and ends with a new form of data. We discern no material difference between the *Alice* step one analysis in *Digitech* and the analysis here.

We proceed to the second step of *Alice* because the ’303 patent claims are directed to an abstract idea.

B. *Alice* Step Two

In step two of the *Alice* inquiry, we search for an “inventive concept” sufficient to “transform the nature of the claim into a patent-eligible application.” *McRO*, 837 F.3d at 1312 (quoting *Alice*, 134 S. Ct. at 2355). To save a patent at step two, an inventive concept must be evident in the claims. *See Alice*, 134 S. Ct. at 2357 (“[W]e must examine the *elements of the claim* to determine whether it contains an ‘inventive concept.’” (emphasis added)); *Synopsys, Inc. v. Mentor Graphics Corp.*, 839 F.3d 1138, 1149 (Fed. Cir. 2016) (“The § 101 inquiry must focus on the language of the Asserted Claims themselves.”).

RecogniCorp argues that the claims of the ’303 patent contain an inventive concept sufficient to render them patent-eligible. Specifically, it contends that the combination of claim elements, *i.e.*, the “particular encoding process using the specific algorithm disclosed” in the patent “transforms” the abstract idea into a patentable invention. RecogniCorp also points out the “facial feature element codes” and “pictorial entity symbols” disclosed in the ’303 patent claims. We find that these claim elements do not transform the nature of the ’303 patent claims into a patent-eligible application. *McRO*, 837 F.3d at 1312.

In *DDR Holdings, LLC v. Hotels.com, L.P.*, we found that the patent claims satisfied *Alice* step two because “the claimed solution amounts to an inventive concept for resolving [a] particular Internet-centric problem.” 773 F.3d 1245, 1259 (Fed. Cir. 2014). Claim 1 of the ’303 patent contains no similar inventive concept. Nothing “transforms” the abstract idea of encoding and decoding into patent-eligible subject matter. *Alice*, 134 S. Ct. at 2357. Nor does the presence of a mathematical formula dictate otherwise. Claims that are directed to a non-abstract idea are not rendered abstract simply because they use a mathematical formula. *Diehr*, 450 U.S. at 187. But the converse is also true: A claim directed to an abstract idea does not automatically become eligible merely by adding a mathematical formula. See, e.g., *Clarilogic, Inc. v. FormFree Holdings Corp.*, __ F. App’x __, 2017 WL 992528, at *3 (Fed. Cir. Mar. 15, 2017). As we explained above, claim 1 is directed to the abstract idea of encoding and decoding. The addition of a mathematical equation that simply changes the data into other forms of data cannot save it.

In *BASCOM Global Internet Services, Inc. v. AT&T Mobility LLC*, the patent owner “alleged that an inventive concept can be found in the ordered combination of claim limitations that transform the abstract idea of filtering content into a particular, practical application of that abstract idea.” 827 F.3d 1341, 1352 (Fed. Cir. 2016). We found the allegation sufficient to survive a motion to dismiss, where all facts had to be construed in the patent owner’s favor. *Id.* Here, RecogniCorp has not alleged a particularized application of encoding and decoding image data. Indeed, claim 1 does not even require a computer; the invention can be practiced verbally or with a telephone. J.A. 28 (col. 4 ll. 59–63); J.A. 32 (col. 11 ll. 53–59). Independent claim 36 claims the use of a computer, but it does exactly what we have warned it may not: tell a user to take an abstract idea and apply it with a computer.

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Versata Dev. Grp., Inc. v. SAP Am., Inc., 793 F.3d 1306, 1332 (Fed. Cir. 2015).

In sum, the claims of the '303 patent lack an inventive concept that transforms the claimed subject matter from an abstract idea into a patent-eligible application. *Alice*, 134 S. Ct. at 2357.

CONCLUSION

The claims of the '303 patent are directed to encoding and decoding image data, an abstract idea. The claims provide no inventive concept to render them eligible under § 101. We therefore affirm the district court's grant of Nintendo's motion for judgment on the pleadings.

AFFIRMED

COSTS

No costs.

PROOF OF SERVICE

I certify that I served a copy of the foregoing PLAINTIFF-APPELLANT RECOGNICORP, LLC'S COMBINED PETITION FOR REHEARING AND REHEARING EN BANC on counsel of record on May 30, 2017 by electronic means (CM/ECF).

/s/ Jonathan D. Baker

Jonathan D. Baker
FARNEY DANIELS PC
411 Borel Avenue, Suite 310
San Mateo, CA 94402
Tel: (424) 268-5200
Email: jbaker@farneydaniels.com

*Counsel for Plaintiff-Appellant
RecogniCorp, LLC*