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UNITED STATES PATENT AND TRADEMARK OFFICE

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BEFORE THE PATENT TRIAL AND APPEAL BOARD

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*Ex parte* IGOR BILOGREVIC, JULIEN F. FREUDIGER,  
EMILIANO DE CRISTOFARO, and ERSIN UZUN<sup>1</sup>

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Appeal 2018-007376  
Application 14/308,639  
Technology Center 3600

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Before DEBRA K. STEPHENS, JASON V. MORGAN, and  
PHILLIP A. BENNETT, *Administrative Patent Judges*.

MORGAN, *Administrative Patent Judge*.

DECISION ON APPEAL  
STATEMENT OF THE CASE

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<sup>1</sup> We use the word “Appellant” to refer to “applicant” as defined in 37 C.F.R. § 1.42. Appellant identifies the real party in interest as Palo Alto Research Center Incorporated. Appeal Br. 1.

*Introduction*

This is an appeal under 35 U.S.C. § 134(a) from the Examiner’s final rejection of claims 1–20. This appeal is related to Appeal No. 2018-007377 (App. No. 14/308,629), as evidenced by both applications having the same inventors, the same Appellant and real party-in-interest, the same Examiner, the same filing date, the same filing dates for the notice of appeal and the appeal briefs, the same figures, similar disclosures (with many identical paragraphs), similar claims, similar rejections, and similar arguments.<sup>2</sup> We have jurisdiction under 35 U.S.C. § 6(b).

We AFFIRM.

*Summary of the disclosure*

The Specification discloses “a system for privacy-preserving aggregation of encrypted data.” Abstract.

*Representative claim*

1. A computer-executable method for access control using encrypted data, comprising:
  - obtaining, by a server, data indicating a first probability distribution associated with a behavior of a user;
  - receiving, from a device associated with the user, at least a first encrypted set of numerical values and a second encrypted set of corresponding square values of the set of numerical values, wherein the numerical values are associated with behavior data of the user;

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<sup>2</sup> Appellant and Appellant’s counsel are reminded of their duty to inform the Board of related appeals. *See* 37 C.F.R. 41.37(c)(1)(ii). This duty was not fulfilled in this appeal. *See* App. Br. 2 (asserting “Appellant is not aware of any appeals or interferences that will affect directly, will be affected directly by, or will otherwise have bearing on the decision in this appeal”); *see also* Reply Br. 4.

computing a mean and a variance of a second probability distribution based on the encrypted values;

determining that a similarity between the first probability distribution and the second probability distribution exceeds a predetermined threshold; and

granting the user access to a resource.

### *Rejection*

The Examiner rejects claims 1–20 under 35 U.S.C. § 101 as being directed to patent-ineligible subject matter. Final Act. 4–17.

## ANALYSIS

### *Principles of law*

To be statutorily patentable, the subject matter of an invention must be a “new and useful process, machine, manufacture, or composition of matter, or [a] new and useful improvement thereof.” 35 U.S.C. § 101. There are implicit exceptions to the categories of patentable subject matter identified in 35 U.S.C. § 101, including: (1) laws of nature; (2) natural phenomena; and (3) abstract ideas. *Alice Corp. Pty. Ltd. v. CLS Bank Int’l*, 573 U.S. 208, 216 (2014). The Supreme Court has set forth a framework for distinguishing patents with claims directed to these implicit exceptions “from those that claim patent-eligible applications of those concepts.” *Id.* at 217 (citing *Mayo Collaborative Servs. v. Prometheus Labs., Inc.*, 566 U.S. 66 (2012)). The evaluation follows a two-part analysis: (1) determine whether the claim is *directed to* a patent-ineligible concept, e.g., an abstract idea; and (2) if so, then determine whether any element, or combination of elements, in the claim is sufficient to ensure that the claim amounts to *significantly more* than the patent-ineligible concept itself. *See id.* at 217–18.

“[A]ll inventions at some level embody, use, reflect, rest upon, or apply laws of nature, natural phenomena, or abstract ideas.” *Mayo*, 566 U.S. at 71. We “‘must be careful to avoid oversimplifying the claims’ by looking at them generally and failing to account for the specific requirements of the claims.” *McRO, Inc. v. Bandai Namco Games Am. Inc.*, 837 F.3d 1299, 1313 (Fed. Cir. 2016) (quoting *In re TLI Commc’ns LLC Patent Litigation*, 823 F.3d 607, 611 (Fed. Cir. 2016)).

The U.S. Patent and Trademark Office (USPTO) recently published revised guidance on the application of the two-part analysis. USPTO, *2019 Revised Patent Subject Matter Eligibility Guidance*, 84 Fed. Reg. 50 (January 7, 2019) (“Memorandum”). Under that guidance, we first look to whether the claim recites:

(1) any judicial exceptions, including certain groupings of abstract ideas (i.e., mathematical concepts, certain methods of organizing human activity such as a fundamental economic practice, or mental processes) (*see id.* at 54 (step 2A, prong one)); and

(2) additional elements that integrate the judicial exception into a practical application (*see id.* at 54–55 (step 2A, prong two); MPEP §§ 2106.05(a)–(c), (e)–(h)).

*See* Memorandum, 84 Fed. Reg. at 52–55.

Only if a claim (1) recites a judicial exception and (2) does not integrate that exception into a practical application, do we then look to whether the claim:

(3) adds a specific limitation beyond the judicial exception that is not “well-understood, routine, conventional” in the field (*see* MPEP § 2106.05(d)); or

(4) simply appends well-understood, routine, conventional activities previously known to the industry, specified at a high level of generality, to the judicial exception.

*See* Memorandum, 84 Fed. Reg. at 56.

*Memorandum step 2A, prong one*

In rejecting claim 1 as being directed to patent-ineligible subject matter, the Examiner determines that claim 1, in reciting

computing means and variance values and subsequently computing probability density functions based on those values[,] is no different than calculating pure binary numbers from binary coded decimal numbers or alarm limits such as all are simply mathematical algorithms and any patent granted would be nothing more than a patent on the algorithm itself.

Final Act. 5 (citing *Gottschalk v. Benson*, 409 U.S. 63 (1972); *Parker v. Flook*, 437 U.S. 584 (1978)). The Examiner’s determination is supported by the recitations of claim 1 which include *obtaining data indicating a first probability distribution, receiving a first encrypted set of numerical values and a second encrypted set of corresponding square values of the set of numerical values, computing a mean and a variance of a second probability distribution based on the encrypted values, and determining that a similarity between the first probability distribution and the second probability distribution exceeds a predetermined threshold*. These limitations recite mathematical concepts—one of the categories of abstract ideas identified in recent USPTO Guidance. *See* Memorandum, 84 Fed. Reg. at 52.

Furthermore, the recitation of *granting the user access to a resource* itself is a recitation of a certain method of organizing human activity (e.g., enforcing a degree of control over a resource) that represents an abstract idea. *See, e.g., Prism Techs. LLC v. T-Mobile USA, Inc.*, 696 F. App'x 1014, 1017 (Fed. Cir. 2017) (citing *In re TLI Commc'ns LLC Patent Litig.*, 823 F.3d 607, 613 (Fed. Cir. 2016); *Intellectual Ventures I LLC v. Capital One Bank (USA)*, 792 F.3d 1363, 1367 (Fed. Cir. 2015)). “Adding one abstract idea . . . to another abstract idea . . . does not render the claim non-abstract.” *RecogniCorp, LLC v. Nintendo Co. Ltd.*, 855 F.3d 1322, 1327 (Fed. Cir. 2017). Therefore, we agree with the Examiner that claim 1 recites an abstract idea.

*Memorandum step 2A, prong two*

Appellant argues the invention of claim 1 “is necessarily rooted in computer technology and not directed to an abstract idea because the functions of the access control server, the encryption technology, and the access control capabilities all require a computer to execute.” Appeal Br. 15 (citing *DDR Holdings, LLC v. Hotels.com, L.P.*, 773 F.3d 1245 (Fed. Cir. 2014)). Appellant also argues “without the use of computers[,] humans cannot interact via a computer network to request access and grant access to resources.” *Id.*

The Examiner determines that “[w]ith regard to the granting of access to a resource in the final limitation of the claim this would appear to be nothing more than bolting on a generic action to the remainder of the claim in order to avoid a finding that the claim is directed towards an abstract idea by adding post-solution activity.” Ans. 5. In response, Appellant argues claim 1 is “directed to determining users’ behavioral profile from already

encrypted data. Granting a customer access to that profile is an essential aspect of the invention.” Reply Br. 14.

Appellant’s arguments are unpersuasive because the key feature on which Appellant relies, *granting the user access to a resource*—itself an abstract idea (*see Prism Techs.*, 696 Fed. App’x at 1017)—is nearly wholly unconnected with the mathematical concepts embodied in the other recitations. That is, although there is a nominal connection between the user who is being granted access to a resource and the mathematical recitations that operate on data associated with behavior of the user, or data derived therefrom, the recitations do not evince *how* performance of the mathematical operations affects *whether* the user is granted access to the resource. This disconnect between the *access granting* recitation and the mathematical recitations is in sharp contrast with the patent-eligible method of *Diehr*, which plainly connected the opening of a press and the mathematical operations that triggered the opening. *Diamond v. Diehr*, 450 U.S. 175, 181 n.5 (1981) (reciting “opening the press *automatically when a said comparison indicates equivalence*” (emphasis added)). Therefore, the rote juxtaposition of mathematical operation recitations with the access granting recitation fails to integrate the recited abstract ideas into a practical application. *See* Memorandum, 84 Fed. Reg. at 55.

Appellant argues claim 1 is patent-eligible because it is directed to “improvements in computing capabilities, which include[] preserving the privacy of user data while determining to grant access to a resource.” Appeal Br. 13 (citing *Enfish, LLC v. Microsoft Corp.*, 822 F.3d 1327 (Fed. Cir. 2016); *see also* Spec. ¶ 38); *see also* Reply Br. 8–12. These recitations, however, generally link the underlying abstract idea to a particular

technological environment rather than integrate it into a practical application. Memorandum, 84 Fed Reg. at 55.

Appellant also argues “[e]ncryption technologies require computer processing power that . . . human beings are incapable of providing.” Appeal Br. 15. No particular encryption technologies, however, are recited in claim 1. Rather, the claim is broad enough to encompass simple encryption techniques that, “with the exception of generic computer-implemented steps . . . [could be] performed by a human, mentally or with pen and paper.” *Intellectual Ventures I LLC v. Symantec Corp.*, 838 F.3d 1307, 1318 (Fed. Cir. 2016) (citing *CyberSource Corp. v. Retail Decisions, Inc.*, 654 F.3d 1366, 1371 (Fed. Cir. 2011)).

For these reasons, based on Appellant’s arguments and our review of the record, we determine that claim 1 fails to integrate the underlying abstract idea into a practical application.

*Memorandum step 2B*

The Examiner makes further determinations directed to showing that the additional recitations of claim 1 fail to make the claim significantly more than the underlying abstract idea. *See* Ans. 6–7. Appellant contends the Examiner erred because claim 1 “purposefully arranges components in a distributed architecture to achieve a technical solution to a technical problem of determining whether to grant access using encrypted data, which is a problem specific to computer networks.” Appeal Br. 17; *see also* Reply Br. 13. Similarly, Appellant argues that “an inventive concept can be found in the installation of an access control tool at a server, remote from users operating client computers, with customized access control specific to each user operating a respective client device.” Appeal Br. 19.

As noted above, the recitation of *granting a user access to a resource* is insufficiently connected to the rest of the claim. As such, Appellant’s narrow characterization of the purported inventive concept is not supported by the claim recitations. Therefore, the *access granting* recitation fails to evince that claim 1 contains a patent-eligible inventive concept.

Furthermore, the other additional recitations relate to generic computer technologies, as evidenced by the broad, generic disclosures in the Specification. *See, e.g.*, Spec. ¶¶ 124–29, Figs. 7–8. Therefore, we agree with the Examiner that the additional recitations fail to transform the underlying abstract idea of claim 1 into a patent-eligible subject matter. Ans. 6–7.

Accordingly, we sustain the Examiner’s 35 U.S.C. § 101 rejection of claim 1, and claims 2–4 and 7–18, which Appellant does not timely argue separately.

#### *Dependent claims*

Appellant further argues dependent claims 5 and 6 recite additional limitations that amount to significantly more than the underlying abstract idea. Appeal Br. 27; *see also* Reply Br. 15. These dependent claims, however, merely provide expressions for mean and variance computations. We are unable to discern how these expressions make the subject matter of claims 5 and 6 patent-eligible.

Appellant argues claim 19 recites an *application programming interface*, and “[h]umans without the use of computers do not have application programming interfaces.” Appeal Br. 28; *see also* Reply Br. 16–17. Application programming interfaces, however, are merely generic

computer technologies. Reciting an application programming interface fails to transform the underlying abstract idea into a patent-eligible invention.

Appellant argues claim 20 includes recitations that “confine the alleged abstract idea to a particular, practical application” because the “combination of limitations is not well understood, routine, or conventional activity.” Appeal Br. 29; *see also* Reply Br. 17. Claim 20, however, merely recites steps that include *generating a profile based on a plurality of attribute values, generating an encrypted set based on the plurality of attribute values with added noise, and sending the encrypted set to a server.* We are unable to discern how collecting data, obfuscating it somewhat with noise, and communicating the obfuscated data—expressed at the high-levels of generality found in the recitations of claim 20—suffices to integrate the abstract idea of independent claim 1 (from which claim 20 depends) into a practical application or otherwise transforms the abstract idea of independent claim 1 into patent-eligible subject matter.

Accordingly, we sustain the Examiner’s 35 U.S.C. § 101 rejection of claims 5, 6, and 20.

#### DECISION

<b>Claims Rejected</b>	<b>Basis</b>	<b>Affirmed</b>	<b>Reversed</b>
1–20	§ 101	1–20	

No time period for taking any subsequent action in connection with this appeal may be extended under 37 C.F.R. § 1.136(a). *See* 37 C.F.R. § 41.50(f).

AFFIRMED