UNITED STATES PATENT AND TRADEMARK OFFICE

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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 HENRI KUDELSKI
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Appeal 2018-004932
Application 12/572,804
Technology Center 3600
_____

Before BRUCE T. WIEDER, AMEE A. SHAH, and
MATTHEW S. MEYERS, *Administrative Patent Judges*.

SHAH, *Administrative Patent Judge*.

DECISION ON APPEAL

STATEMENT OF THE CASE

Pursuant to 35 U.S.C. § 134(a), the Appellant[1] appeals from the
Examiner's decision to reject claims 1–25. The Appellant's representative
appeared for Oral Argument on February 4, 2020. We have jurisdiction
under 35 U.S.C. § 6(b).

We AFFIRM.

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[1] We use the word "Appellant" to refer to "applicant" as defined in
37 C.F.R. § 1.42. The Appellant identifies the real party in interest as
"Nagravision, S.A." Appeal Br. 3.

CLAIMED SUBJECT MATTER

The Appellant's invention "concerns the prepaid service distribution field, particularly toll or pay television services." Spec. 1, ll. 7–8. More specifically, "[t]he goal of the [Appellant's] . . . invention is to secure a prepaid device for access to audio/video content having the possibility of reimbursement of the unused balance upon presentation of the . . . device to a control center." *Id.* at 3, ll. 9–11.

Claims 1 and 12 are the independent claims on appeal. Claim 1 is illustrative of the subject matter on appeal and is reproduced below (with added bracketing for reference):

> 1. A method for securely managing an account value stored in a prepaid device for controlling paid access to data, the method comprising:
>
> [(a)] receiving, with a prepaid device computer of the prepaid device, a request for access to data;
>
> [(b)] using, with the prepaid device computer, a prepaid account value stored in the prepaid device to pay an amount corresponding to a cost for the access to the data, the prepaid account value being set during an initialization of the prepaid device;
>
> [(c)] calculating, with the prepaid device computer, a new account value for the prepaid account value by modifying a current account value of the prepaid account value by the amount corresponding to the cost for the access to the data, a new remaining balance being equal to a difference between the prepaid account value and the cost;
>
> [(d)] calculating, with the prepaid device computer, a non-negative integer number of steps based on a difference between:
>
>> a first value obtained by performing at least a first predetermined function on the new account value; and

a second value obtained by performing at least the
first predetermined function on the current account value;

[(e)] executing, with the prepaid device computer, at least
one one-way function on a control value stored in the prepaid
device a number of times equal to the number of steps, wherein
the control value is initialized during the initialization, is specific
to the prepaid device, and corresponds to a device identification
stored in the prepaid device, thereby producing a new control
value specific to the prepaid device and corresponding to the
device identification, the new control value providing a
verification that the new account value corresponds to the new
remaining balance when a reimbursement of the new account
value is sought; and

[(f)] replacing, with the prepaid device, the stored control
value by the new control value.

Appeal Br. 16–17 (Claims App.).

THE REJECTION

Claims 1–25 stand rejected under 35 U.S.C. § 101 as being directed to
a judicial exception without significantly more.

OPINION

The Appellant argues the claims as a group. *See* Appeal Br. 15. We
select claim 1 as representative of the group, with claims 2–25 standing or
falling therewith. *See* 37 C.F.R. § 41.37(c)(1)(iv) (2017).

35 U.S.C. § 101 Framework

An invention is patent-eligible if it claims a "new and useful process,
machine, manufacture, or composition of matter." 35 U.S.C. § 101.
However, the Supreme Court has long interpreted 35 U.S.C. § 101 to include
implicit exceptions: "[l]aws of nature, natural phenomena, and abstract

ideas" are not patentable. *Alice Corp. Pty. Ltd. v. CLS Bank Int'l*, 573 U.S. 208, 216 (2014).

In determining whether a claim falls within an excluded category, we are guided by the Supreme Court's two-step framework, described in *Mayo* and *Alice*. *Id.* at 217–18 (citing *Mayo Collaborative Servs. v. Prometheus Labs., Inc.*, 566 U.S. 66, 75–77 (2012)). In accordance with that framework, we first determine what concept the claim is "directed to." *See Alice*, 573 U.S. at 219 ("On their face, the claims before us are drawn to the concept of intermediated settlement, *i.e.*, the use of a third party to mitigate settlement risk."); *see also Bilski v. Kappos*, 561 U.S. 593, 611 (2010) ("Claims 1 and 4 in petitioners' application explain the basic concept of hedging, or protecting against risk.").

Concepts determined to be abstract ideas, and thus patent ineligible, include certain methods of organizing human activity, such as fundamental economic practices (*Alice*, 573 U.S. at 219–20; *Bilski*, 561 U.S. at 611); mathematical formulas (*Parker v. Flook*, 437 U.S. 584, 594–95 (1978)); and mental processes (*Gottschalk v. Benson*, 409 U.S. 63, 67 (1972)). Concepts determined to be patent eligible include physical and chemical processes, such as "molding rubber products" (*Diamond v. Diehr*, 450 U.S. 175, 191 (1981)); "tanning, dyeing, making water-proof cloth, vulcanizing India rubber, smelting ores" (*id.* at 182 n.7 (quoting *Corning v. Burden*, 56 U.S. 252, 267–68 (1853))); and manufacturing flour (*Benson*, 409 U.S. at 69 (citing *Cochrane v. Deener*, 94 U.S. 780, 785 (1876))).

In *Diehr*, the claim at issue recited a mathematical formula, but the Supreme Court held that "[a] claim drawn to subject matter otherwise statutory does not become nonstatutory simply because it uses a

mathematical formula." *Diehr*, 450 U.S. at 176; *see also id.* at 191 ("We view respondents' claims as nothing more than a process for molding rubber products and not as an attempt to patent a mathematical formula."). Having said that, the Supreme Court also indicated that a claim "seeking patent protection for that formula in the abstract . . . is not accorded the protection of our patent laws, . . . and this principle cannot be circumvented by attempting to limit the use of the formula to a particular technological environment." *Id.* (citing *Benson* and *Flook*); *see, e.g.*, *id.* at 187 ("It is now commonplace that an *application* of a law of nature or mathematical formula to a known structure or process may well be deserving of patent protection.").

If the claim is "directed to" an abstract idea, we turn to the second step of the *Alice* and *Mayo* framework, where "we must examine the elements of the claim to determine whether it contains an 'inventive concept' sufficient to 'transform' the claimed abstract idea into a patent-eligible application." *Alice*, 573 U.S. at 221 (internal quotation marks omitted). "A claim that recites an abstract idea must include 'additional features' to ensure 'that the [claim] is more than a drafting effort designed to monopolize the [abstract idea].'" *Id.* (alterations in original) (quoting *Mayo*, 566 U.S. at 77). "[M]erely requir[ing] generic computer implementation[] fail[s] to transform that abstract idea into a patent-eligible invention." *Id.*

After the Appellant's briefs were filed and the Examiner's Answer mailed, the U.S. Patent and Trademark Office ("USPTO") published revised guidance on the application of § 101. *2019 REVISED PATENT SUBJECT MATTER ELIGIBILITY GUIDANCE*, 84 Fed. Reg. 50 (Jan. 7, 2019) ("2019 Revised Guidance"). That guidance revised the USPTO's examination

procedure with respect to the first step of the *Mayo/Alice* framework by

(1) providing groupings of subject matter that are considered an abstract

idea; and (2) clarifying that a claim is not "directed to" a judicial exception

if the judicial exception is integrated into a practical application of that

exception. *Id.* at 50. The 2019 Revised Guidance, by its terms, applies to all

applications, and to all patents resulting from applications, filed before, on,

or after January 7, 2019. *Id.*[2] Under the 2019 Revised 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); and

> (2) additional elements that integrate the judicial exception into a practical application (*see* MANUAL OF PATENT EXAMINING PROCEDURE ("MPEP") §§ 2106.05(a)–(c), (e)–(h) (9th Ed., Rev. 08.2017, Jan. 2018)).

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 2019 Revised Guidance, 84 Fed Reg. at 54, 56.

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[2] The 2019 Revised Guidance supersedes MPEP § 2106.04(II) and also supersedes all versions of the USPTO's "Eligibility Quick Reference Sheet Identifying Abstract Ideas." *See* 2019 Revised Guidance, 84 Fed. Reg. at 51 ("Eligibility-related guidance issued prior to the Ninth Edition, R–08.2017, of the MPEP (published Jan. 2018) should not be relied upon.").

Step One of the Mayo/Alice Framework

<u>Reciting a Judicial Exception</u>

Under the first step of the *Mayo/Alice* framework and Step 1 of Office Guidelines (*see* 2019 Revised Guidance, 84 Fed. Reg. at 53–54), we determine that claims 1–11, 18, 20, 21, and 24 are directed to a process, and claims 12–17, 19, 22, 23, and 25 are directed to a device, i.e., a machine, two of the categories of statutory subject matter.

Under the first step of the *Mayo/Alice* framework and Step 2A, Prong 1 of the 2019 Revised Guidelines, 84 Fed. Reg. at 54, the Examiner determines that claim 1 is "directed to an abstract idea of managing an account value in a prepaid device." Non-Final Act. 4. When viewed through the lens of the 2019 Revised Guidance, the Examiner's analysis depicts the claimed subject matter as a "[m]ental process[]—[a] concept[] performed in the human mind (including an observation, evaluation, judgment, opinion)" involving mathematical concepts. 2019 Revised Guidance, 84 Fed. Reg. at 52 (footnotes omitted).

The Appellant disagrees and contends that "Claim 1 is directed to a method for use, for example, in a system where a smartcard is used as a prepaid device" and "provide[s] a way to prevent the user from making a fraudulent claim for reimbursement of unused credit remaining on the device (e.g., interfering with the value of the current balance of credit to make it look like less credit has been used up than is actually the case)." Appeal Br. 11.

Before determining whether the claim at issue is directed to an abstract idea, we first determine to what the claim is directed. The Federal Circuit has explained that "the 'directed to' inquiry applies a stage-one filter

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to claims, considered in light of the specification, based on whether 'their character as a whole is directed to excluded subject matter.'" *Enfish, LLC v. Microsoft Corp.*, 822 F.3d 1327, 1335 (Fed. Cir. 2016) (quoting *Internet Patents Corp. v. Active Network, Inc.*, 790 F.3d 1343, 1346 (Fed. Cir. 2015)). It asks whether the focus of the claims is on a specific improvement in relevant technology or on a process that itself qualifies as an "abstract idea" for which computers are invoked merely as a tool. *See id.* at 1335–36. Here, it is clear from the Specification, and the claim language, that the focus of claim 1 is on an abstract idea, and not on any improvement to technology and/or a technical field.

The Specification provides for a "VALUE MANAGEMENT METHOD IN A PREPAID DEVICE." Spec., Title. In the "Background" section, the Specification discusses the prior art way of paying for streamed information using security modules or value cards with credits. *See, e.g.*, Spec. 1, ll. 10–15, 2, ll. 18–28. "For reasons of security and financial management, these value cards have an expiry date after which they no longer function." *Id.* at 2, ll. 27–28. However, "after the expiry date, these cards may still have a non-negligible credit for which the user may claim a reimbursement," making them "very attractive for malicious third parties looking to eliminate any debits from the card in order to obtain a reimbursement for all or part of the audio/video content already consumed." *Id.* at 3, ll. 1–7. Thus, "[t]he goal of the present invention is to secure a prepaid device for access to audio/video content having the possibility of reimbursement of the unused balance upon presentation of the aforementioned device to a control center." *Id.* at 3, ll. 9–11. "This goal is achieved by a method for managing a debit value (V1) in a prepaid device

and comprising an identifier (UA) specific to each device and a control value (CT)." *Id.* at 3, ll. 12–14. This method "suggests using characteristics of a one-way function to change a control value in such a way as to make any return to a previous control value impossible. At each new calculation of this control value, the old value is replaced by the new one." *Id.* at 4, ll. 8–11. "[T]his one-way function is a mathematical mapping H of a source subset towards an object subset in which each element x of the source subset is mapped to a target H(x)," and is "particularly useful when . . , [it is] of type known as Hash functions." *Id.* at 4, ll. 12–15.

Consistent with the disclosure, claim 1 recites "[a] method for securely managing an account value stored in a prepaid device for controlling paid access to data," comprising the steps of: (1) receiving a request for access to data, i.e., limitation (a):

> receiving, with a prepaid device computer of the prepaid device, a request for access to data;

(2) using a stored value to pay an amount for the access, i.e., limitation (b):

> using, with the prepaid device computer, a prepaid account value stored in the prepaid device to pay an amount corresponding to a cost for the access to the data, the prepaid account value being set during an initialization of the prepaid device;

(3) performing calculations for a new account value and a number of steps, i.e., limitations (c) and (d):

> calculating, with the prepaid device computer, a new account value for the prepaid account value by modifying a current account value of the prepaid account value by the amount corresponding to the cost for the access to the data, a new remaining balance being equal to a difference between the prepaid account value and the cost;

> calculating, with the prepaid device computer, a non-negative integer number of steps based on a difference between:
>
>> a first value obtained by performing at least a first predetermined function on the new account value; and
>>
>> a second value obtained by performing at least the first predetermined function on the current account value;

(4) executing a one-way function, i.e., a mathematical mapping such as a hash function, on a control value, i.e., limitation (e):

> executing, with the prepaid device computer, at least one one-way function on a control value stored in the prepaid device a number of times equal to the number of steps, wherein the control value is initialized during the initialization, is specific to the prepaid device, and corresponds to a device identification stored in the prepaid device, thereby producing a new control value specific to the prepaid device and corresponding to the device identification, the new control value providing a verification that the new account value corresponds to the new remaining balance when a reimbursement of the new account value is sought; and

(5) replacing the stored value with the new value, i.e., limitation (f):

> replacing, with the prepaid device, the stored control value by the new control value.

Appeal Br. 16–17 (Claims App).

When considered collectively and under the broadest reasonable interpretation, the limitations of claim 1 recite a method for securely managing an account value stored in a prepaid device by receiving, calculating, mapping, and replacing data,[3] which is an abstract idea of a

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[3] We note that "[a]n abstract idea can generally be described at different levels of abstraction." *Apple, Inc. v. Ameranth, Inc.*, 842 F.3d 1229, 1240 (Fed. Cir. 2016). The Board's "slight revision of its abstract idea analysis does not impact the patentability analysis." *Id.* at 1241.

"[c]ertain method[] of organizing human activity— . . . commercial or legal interactions (including agreements in the form of contracts; legal obligations; advertising, marketing or sales activities or behaviors; business relations)." 2019 Revised Guidance, 84 Fed. Reg. at 52

The courts have held similar concepts to be abstract. For example, the Federal Circuit has held abstract the concepts of forming financial transactions using a bankcard to pay fares in *Smart Systems Innovation, LLC v. Chicago Transit Authority*, 873 F.3d 1364, 1371–72 (Fed. Cir. 2017), detecting credit card fraud based on information relating to past Internet transactions to by obtaining, mapping, and analyzing information in *CyberSource Corp. v. Retail Decisions, Inc.*, 654 F.3d 1366, 1372–73 (Fed. Cir. 2011), and identifying and characterizing errant files by selecting a file, generating a value, comparing that value to other values, and characterizing based on the comparison in *Intellectual Ventures I LLC v. Erie Indemnity Co.*, 711 F. App'x 1012, 1014–16 (Fed. Cir. 2017)

Having concluded that claim 1 recites a judicial exception, i.e., an abstract idea, in determining whether the claim is directed to this abstract idea, we next consider whether the claim recites additional elements that integrate the judicial exception into a practical application.

<u>Integration into a Practical Application</u>

Under Step 2A, Prong 2 of the 2019 Revised Guidance, 84 Fed. Reg. at 54, we look to whether the claim "appl[ies], rel[ies] on, or use[s] the judicial exception in a manner that imposes a meaningful limit on the judicial exception, such that the claim is more than a drafting effort designed to monopolize the judicial exception," i.e., "integrates a judicial exception into a practical application." Here, the only additional element recited in

claim 1 beyond the abstract idea is a "prepaid device computer" — an element that, as the Examiner observes (Non-Final Act. 4), is described in the Specification as a generic component. The Specification does not contain the term "prepaid device computer," but does discuss that the prepaid device can be in "the most known form . . . [of] the ISO 7816 smartcard, . . . [but] may take other forms such as PCMCIA card, RFID or USB dongle, the interface to which may be electrical or contactless." Spec. 6, ll. 3–5. The Specification, in the originally filed claims, provides for a prepaid device having a processor and memory. *Id.* at 18 (claim 12). We find no indication in the Specification, nor does the Appellant direct us to any indication, that the operations recited in claim 1 require any specialized prepaid device hardware or other inventive computer components, i.e., a particular machine, invoke any asserted inventive programming, or that the claimed invention is implemented using other than the generic device components to perform the generically claimed functions. *See DDR Holdings, LLC v. Hotels.com, L.P.*, 773 F.3d 1245, 1256 (Fed. Cir. 2014) ("[A]fter *Alice*, there can remain no doubt: recitation of generic computer limitations does not make an otherwise ineligible claim patent-eligible."); *see also Smart Systems*, 873 F.3d at 1372 ("[t]he Asserted Claims are not directed to a new type of bankcard").

The Appellant contends that "[t]he claim[] provide[s] a technical solution to a technical problem" (Appeal Br. 11) and has a "technical nature" (*id.* at 12). *See also* Reply Br. 2–3. When viewed through the lens of the 2019 Revised Guidance, the Appellant contends that under Prong Two, the elements of claim 1 integrate the abstract idea into a practical application because the combination of the elements "reflects an improvement in the

functioning of a computer, or an improvement to other technology or technical field." 84 Fed. Reg. at 55 (citing *DDR Holdings*, 773 F.3d at 1258–59. We disagree.

In *DDR Holdings*, the Federal Circuit determined that the claims addressed the problem of retaining website visitors who, if adhering to the routine, conventional functioning of Internet hyperlink protocol, would be transported instantly away from a host's website after clicking on an advertisement and activating a hyperlink. *DDR Holdings*, 773 F.3d at 1257. The Federal Circuit, thus, held that the claims were directed to statutory subject matter because they claim a solution "necessarily rooted in computer technology in order to overcome a problem specifically arising in the realm of computer networks." *Id.* The court cautioned that "not all claims purporting to address Internet-centric challenges are eligible for patent." *Id.* at 1258. And the court contrasted the claims to those at issue in *Ultramercial, Inc. v. Hulu, LLC*, 772 F.3d 709 (Fed. Cir. 2014), in that, in *DDR Holdings*, the computer network was not operating in its "normal, expected manner" and the claims did not "recite an invention that is . . . merely the routine or conventional use of the Internet." *Id.* at 1258–59.

The Appellant contends that the problem being solved is "that a prepaid device computer can be tampered with to create artificial value," such as "by computer hacking activity or other computer fraud." Appeal Br. 11–12. However, preventing fraud or redeeming expired value (e.g., coupons, cards, etc.) is not a problem rooted in computer technology. The Specification does not specifically discuss hacking, but discusses that non-negligible credit remaining on an expired card makes the card "very attractive for malicious third parties looking to eliminate any debits from the

card in order to obtain a reimbursement for all or part of the audio/video content already consumed." Spec. 3, ll. 1–7. Hacking, as used here, is simply fraud in the particular technological field of smartcards, which are "reputed to be tamper-proof." *Id.* at 1, l. 25.

Also, unlike *DDR Holdings*, the purported solution here is not a technical solution, i.e., it is not necessarily rooted in computer technology. Rather, the purported solution uses the device computer operating in its ordinary capacity to replace a prepaid device's stored control value with a newly calculated control value after using the stored account value to pay for data access. The claim does not recite a way to "provide independent verification of the true value of the prepaid device that cannot be tampered with through computer hacking activity or other computer fraud" (Appeal Br. 12) in that claim 1 does not recite any steps for verifying the control value nor does it specify how the device "cannot be tampered with" due to the updating (replacing) of the control value. At best, it may make tampering more difficult. That the claimed technique is performed in the field of prepaid devices or smartcards simply limits the use of the abstract idea to a particular technological environment. "The Supreme Court and [the Federal Circuit] have repeatedly made clear that merely limiting the field of use of the abstract idea to a particular existing technological environment does not render the claims any less abstract." *Affinity Labs of Texas, LLC v. DIRECTV, LLC*, 838 F.3d 1253, 1259 (Fed. Cir. 2016), citing *Alice*, 573 U.S. at 222; *Mayo*, 566 U.S. at 71; *Bilski*, 561 U.S. at 612, *buySAFE, Inc. v. Google, Inc.*, 765 F.3d 1350, 1355 (Fed. Cir. 2014). The Appellant does not direct our attention to, and we do not see, where the Specification describes the prepaid device computer acting in an

unconventional manner to further the desired solution of securely managing a prepaid device by replacing a stored control value with a newly calculated control value.

The Appellant also does not direct our attention to anything in the Specification to indicate that the invention provides a technical improvement to the prepaid device. For example, the Appellant does not claim using a specific structure or process to identify hackers. *Cf. SRI Int'l., Inc, v. Cisco Syst., Inc.*, 930 F.3d 1295, 1303 (Fed. Cir. 2019) (claim 1 recited an improvement to computer technology by "providing a network defense system that monitors network traffic in real-time to automatically detect large-scale attacks."). Nor does the claim provide a non-abstract improvement by employing a new way, a new kind of structure, or a new arrangement of elements to enable a system to do something it could not do before. *Cf. Koninklijke KPN N.V. v. Gemalto M2M GmbH*, 942 F.3d 1143, 1150–51 (Fed. Cir. 2019) (claim was directed to "a non-abstract improvement because it employ[ed] a new way of generating check data that enable[d] the detection of persistent systematic errors in data transmissions that prior art systems were previously not equipped to detect."); *Finjan, Inc. v. Blue Coat Syst., Inc.*, 879 F.3d 1299, 1304–05 (Fed. Cir. 2018) (claim was directed to "a non-abstract improvement in computer functionality" because it employed "a new kind of file that enable[d] a computer security system to do things it could not do before"); *BASCOM Global Internet Svcs., Inc. v. AT&T Mobility LLC*, 827 F.3d 1341, 1350 (Fed. Cir. 2016) (claim's particular design of a "non-conventional and non-generic arrangement of known, conventional pieces" was a technical improvement). The claim also does not specifically identify how a non-abstract improvement to the

computer's functionality "is effectuated in an assertedly unexpected way." *Ancora Techs., Inc. v. HTC Am., Inc.*, 908 F.3d 1343, 1348–50 (Fed. Cir. 2018) (claim improved security by moving a software-verification structure to a location not previously used for this purpose, thereby altering how the security verification function is performed).

The Appellant argues that the claim is like *McRO, Inc. v. Bandai Namco Games Am. Inc.*, 837 F.3d 1299, 1324 (Fed. Cir. 2016), because the claim "use[s] 'a combined order of specific rules that renders information into a specific format that is then used and applied to create desired results.'" Appeal Br. 13; *see also* Reply Br. 4. Specifically, the Appellant argues that "the system uses a prepaid device computer to pay for a purchase and then executes a specific, complex series of steps to create a new control value that serves as an independent verifier of the value remaining on the prepaid device computer." Appeal Br. 13. In *McRO*, the claims were directed to a specific improvement in computer animation and used rules to automate a subjective task of humans to create a sequence of synchronized, animated characters. *See McRO*, 837 F.3d at 1314–15. Unlike *Flook*, *Bilski*, and *Alice*, it was not the use of the computer, but the incorporation of the rules that improved an existing technological process. *Id.* at 1314. Here, there is no such improvement to technology or a technological process. Any improvement lies in the creation of the new control value by employing mathematical algorithms and updating the previous value. *See* Appeal Br. 13 ("The new control value replaces an old control value in the prepaid device computer's memory . . .). This alleged improvement lies in the abstract idea itself, not to any technological improvement. *See BSG Tech LLC v. BuySeasons, Inc.*, 899 F.3d 1281, 1287–88 (Fed. Cir. 2018). The

Appellant does not direct our attention to anything in the Specification to indicate that the invention provides a *technical* improvement in the calculating or updating of that data or that claim 1 incorporates rules to create "something physical—namely, the display of 'lip synchronization and facial expressions' of animated characters on screens for viewing by human eyes." *SAP Am., Inc. v. Investpic, LLC*, 898 F.3d 1161, 1167 (Fed. Cir. 2018) (quoting *McRO*, 837 F.3d at 1313).

The Appellant also argues that the claim is similar to the claims of *Amdocs (Israel) Ltd. v. Openet Telecom, Inc.*, 841 F.3d 1288 (Fed. Cir. 2016), because "the specific relationships of the claimed device elements similarly yield an unconventional technical solution." Appeal Br. 14. In *Amdocs*, the Federal Circuit held the claim was patent eligible because the claim entailed an unconventional technological solution (enhancing data in a distributed fashion) to a technological problem (massive record flows which previously required massive databases). Although the solution required generic components, the court adopted the district court's interpretation of the claim term "enhance," stating, it approved "reading the 'in a distributed fashion' and the 'close to the source' of network information requirements into the term 'enhance,'" and determined that "the claim's enhancing limitation necessarily requires that these generic components operate in an unconventional manner to achieve an improvement in computer functionality" and that the "enhancing limitation depends not only upon the invention's distributed architecture, but also depends upon the network devices and gatherers—even though these may be generic—working together in a distributed manner." *Amdocs*, 841 F.3d at 1300–01. Here, there is no similar evidence that the "computer['s] use[] [of] specific

calculations and functions to create new data" is comparable to the
components in *Amdocs* or otherwise establishes that the computer operates
in an unconventional manner. And, as discussed above, the claim does not
recite step(s) to "provide[] an independent verification of prepaid device
value to solve the technical problem of guarding against computer fraud."
Appeal Br. 14.

We likewise disagree that the claim is similar to those of *Thales
Visionix Inc. v. United States*, 840 F.3d 1343 (Fed. Cir. 2017), because the
mathematical equation "does not doom the claim[] to abstraction." Appeal
Br. 14 (quoting *Thales*, 840 F.3d at 1349). In *Thales*, the improvement was
to a physical tracking system that used mathematical equations that were
"dictated by the placement of the inertial sensors and application of laws of
physics" to determine the orientation of a tracked object relative to a moving
platform. *Thales*, 850 F.3d at 1348. Thus, the claims were directed to
"systems and methods that use inertial sensors in a non-conventional manner
to reduce errors in measuring the relative position and orientation of a
moving object on a moving reference frame." *Id.* at 1349. In other words,
"the improvement was in a physical tracking system. The use of
mathematics to achieve an improvement no more changed the conclusion[s]
that improved physical things and actions were the subject of the claimed
advance than it did in *Diamond v Diehr*." *SAP Am.*, 898 F.3d. at 1168.
Here, however, "the focus of the claim[] is not to a physical-realm
improvement but an improvement in wholly abstract ideas"—the generation
of a new value using mathematical algorithms, followed by a
replacing/updating of data with the result. *Id.* That the invention is related
to a prepaid device or computer hacking does not necessarily make the claim

not abstract. *See Ultramercial*, 772 F.3d at 716 (limiting the use of the abstract idea "to a particular technological environment" does not make the abstract idea patent-eligible) (citation omitted).

Accordingly, we conclude claim 1 does not contain an element that imposes a meaningful limit on the abstract idea that integrates the abstract idea into a practical application.

Thus, we are not persuaded of error in the Examiner's determination that claim 1 is directed to an abstract idea.

Step Two of the Mayo/Alice Framework

Under the second step in the *Mayo/Alice* framework (corresponding to Step 2B of the 2019 Revised Guidance), we find supported the Examiner's determination that the limitations of claim 1, taken individually and as an ordered combination, do not amount to significantly more than the judicial exception. *See* Non-Final Act. 4–5.

The Appellant does not offer additional reasoning or argument why the claim "[a]dds a specific limitation or combination of limitations that [is] not well-understood, routine, conventional activity in the field, which is indicative that an inventive concept may be present." 2019 Revised Guidance, 84 Fed. Reg. at 56. The claimed generic device computer operates in its ordinary and conventional capacity to perform the well-understood, routine, and conventional functions of receiving and transmitting data (i.e., receiving a request for access and using stored data to pay for and thus allow access), calculating data by using mathematical algorithms (i.e., calculating a new account value and a number of steps, and executing a function a number of time equal to that number of steps to produce a new control value), and performing an action based on the

calculation (i.e., replacing the stored control value with the new value). *See*
Spec. 6, ll. 1–5; 9, ll. 9–11 (describing a generic prepaid device of a card);
SAP Am., 898 F.3d at 1170 (carrying out mathematical calculations is well-
understood, routine, and conventional); *Smart Systems*, 873 F.3d at 1369–70,
1374–75 (claims reciting receiving data, generating a hash identifier,
verifying the bankcard, denying access if not verified and reciting storing
data, receiving data, and updating data to apply a fare did not transform the
abstract idea into a patent-eligible invention); *Alice*, 573 U.S. at 226
("Nearly every computer will include a 'communications controller' and
'data storage unit' capable of performing the basic calculation, storage, and
transmission functions required by the method claims.").

Considered as an ordered combination, the components of the
Appellant's claim 1 add nothing that is not already present when the steps
are considered separately. The sequence of receiving and transmitting data,
performing calculations to generate data, and performing an action based on
the calculation (i.e., replacing a stored value) is equally generic and
conventional or otherwise held to be abstract. *See SAP Am.*, 898 F.3d
at 1169–70 (holding that the sequence of storing data, receiving data,
performing a mathematical analysis to generate data, and providing the
generated data was abstract); *Smart Systems*, 873 F.3d at 1369–70, 1374–75
(storing, receiving, and updating data was abstract), and *FairWarning IP,
LLC v. Iatric Syst., Inc.*, 839 F.3d 1089, 1095 (Fed. Cir. 2016) (holding that
sequence of generating a rule related to accessing information, applying the
rule, and storing and announcing the results was abstract). The ordered
combination of the steps is, therefore, ordinary and conventional.

Thus, we are not persuaded of error in the Examiner's determination that the limitations of claim 1 do not transform the claim into significantly more than the abstract idea. We therefore sustain the Examiner's rejection under 35 U.S.C. § 101 of claim 1 and of claims 2–25, the rejection of which stands with claim 1.

CONCLUSION

The Examiner's decision to reject claims 1–25 is sustained.

In summary:

Claims Rejected	35 U.S.C. §	Reference(s)/Basis	Affirmed	Reversed
1–25	101	Eligibility	1–25	

TIME PERIOD FOR RESPONSE

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. § 1.136(a)(l)(iv).

AFFIRMED