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 JAMES ROWE and TRAVIS NIXON

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Appeal 2017-004225
Application 13/848,694
Technology Center 3700

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Before BRADLEY B. BAYAT, FREDERICK C. LANEY, and
PAUL J. KORNICZKY, *Administrative Patent Judges*.

LANEY, *Administrative Patent Judge*.

DECISION ON APPEAL

STATEMENT OF THE CASE

Appellant[1] appeals under 35 U.S.C. § 134(a) from the Examiner's decision to reject claims 1–18 (entered Nov. 19, 2015, "Final Act."). We have jurisdiction under 35 U.S.C. § 6(b).

We REVERSE.

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[1] We use the word "Appellant" to refer to "applicant" as defined in 37 C.F.R. § 1.42. Appellant identifies Disney Enterprises, Inc., as the real party in interest. Appeal Br. 2.

THE CLAIMED SUBJECT MATTER

Appellant's invention relates to creating and updating navigation maps of a virtual space dynamically in response to non-traversable objects being relocated in the virtual space. Spec. ¶ 1.

Claims 1 and 10 are independent. Claim 1 is reproduced below and is illustrative of the claimed subject matter.

> 1.   A computer-implemented method for interactively updating navigation maps during interactive gameplay in a virtual space, the method being implemented in a computer system comprising one or more physical processors and electronic storage storing machine-readable instructions, the method comprising:
>
>> storing, within the electronic storage, a navigation map of the virtual space, wherein the navigation map includes multiple regions, the regions including:
>
>>> traversable regions that physics of the virtual space permit characters to traverse, and
>
>>> non-traversable regions that correspond to non-traversable objects located in the virtual space through which traversal by the characters of the virtual space is not permitted by the physics of the virtual space;
>
>> obtaining instructions to modify a location of a first non-traversable object in the virtual space, wherein the instructions are obtained via a communications network from a client computing platform associated with a user of the virtual space during interactive gameplay by the user in the virtual space;
>
>> determining, responsive to the instructed modification, a set of the non-traversable regions, the set of the non-traversable regions comprising one or more of the non-traversable regions, wherein the set of the non-traversable regions includes a first non-traversable region that corresponds to the modified location of the first non-traversable object;

determining, responsive to the instructed modification, a set of the traversable regions, the set of the traversable regions comprising one or more of the traversable regions;

defining boundaries for the set of the traversable regions, wherein individual ones of the boundaries separate adjacent regions;

determining, responsive to the instructed modification, which of the defined boundaries of the set of the traversable regions are traversable boundaries, wherein individual ones of the traversable boundaries separate adjacent traversable regions;

updating, responsive to the instructed modification, the navigation map to reflect the determined set of the non-traversable regions, the determined set of the traversable regions, and the traversable boundaries; and

querying, on behalf of a non-player character in the virtual space, the updated navigation map such that the non-player character traverses traversable regions based on the updated navigation map subsequent to obtaining the instructed modification.

REJECTIONS[2]

References	Basis	Claims Challenged
	§ 101	1–18
Bergelt[3]	§ 102(a)(1)	1, 2, 5, 7, 10, 11, 14, 16
Bergelt and Axelrod[4]	§ 103	3, 4, 12, 13
Bergelt and Minagawa[5]	§ 103	6, 8, 9, 15, 17, 18

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[2] The Examiner has withdrawn the rejections previously asserted under 35 U.S.C. § 112 of claims 7, 9, and 16. *See* Adv. Act. 2 (entered Mar. 4, 2016); Ans. 2.

[3] U.S. Pat. App. Pub. No. 2009/0197686 A1, pub. Aug. 6, 2009 ("Bergelt").

[4] U.S. Pat. App. Pub. No. 2008/0220862 A1, pub. Sept. 11, 2008 ("Axelrod").

[5] U.S. Pat. App. Pub. No. 2007/0200855 A1, pub. Aug. 30, 2007 ("Minagawa").

ANALYSIS

I.   Section 101 Rejection

The Examiner rejected claims 1–18 under 35 U.S.C. § 101, finding that the claims are directed to a judicial exception to the statutory categories of invention, an abstract idea, without reciting significantly more than the exception. *See* Final Act. 3–7; Ans. 2–5. In particular, the Examiner finds that updating navigational maps during interactive gameplay in a virtual space, as recited in claims 1–18, "can be performed mentally or in a computer and is similar to the kind of 'organizing human activity' at issue in Alice Corp." Final Act. 3, 5. The Examiner states, without explanation, that "[a]lthough the claims are not drawn to the same subject matter, the abstract idea of updating a navigation map is similar to the abstract ideas of managing risk (hedging) during consumer transactions (Bilski) mitigating settlement risk in financial transactions (Alice Corp.), and managing a game (Planet Bingo)." *Id.* Identifying each of the recited limitations of claims 1 and 10, the Examiner states, again without explanation, that they "can be performed by a human using a purely abstract process and presentation via writing on paper." *Id.* at 3–4, 5–6.

The Examiner determines next that the claims do not identify an inventive concept to transform the nature of the claims into a patent-eligible application, because the claims do not include additional elements that amount to significantly more than the abstract idea. *See* Final Act. 4–5, 6–7; Ans. 5. The Examiner finds that the claims fail to improve the technical field because they do not recite how the boundaries of the transferable and non-transferable regions are set, but "merely relate to gathering data and do not add any meaningful limits on updating the navigational map." Final Act.

4–5, 7. "The described process amounts to no more than a series of abstract steps for the concept of gathering data related to a modified location of a non-traversable object, updating a navigation map based on said gathered data, and using the updated navigation map for directing a non-player character to navigate a virtual space." *Id.* 5, 7. The Examiner considers that "a generic computer elements . . . perform generic functions that are well-understood, routine and conventional, such as gathering data, performing calculations, and outputting a result." *Id.*

Appellant argues, "the claims are not directed to concepts of 'organizing human activity' but rather a computer implemented method and system that improve the provision of a networked game by enabling navigation maps, which are queried by non-player characters of the game, to be updated when locations of non-traversable objects within the game are modified." Appeal Br. 15. Appellant asserts, "claims 1 and 10 are necessarily rooted in computer technology to overcome a problem specifically arising in networked gaming and are distinct from the types of concepts found by the courts to be abstract." *Id.* at 13. "The problem [was] controlling non-player characters within a virtual space so that the non-player characters behave in a realistic manner (e.g., as if they were being controlled by actual players)," which traditional approaches addressed by using higher computational costs to perform collision detection techniques for individual non-player characters to determine whether a virtual space terrain was traversable. *Id.* at 17–18 (citing Spec. 4). According to Appellant, "[t]he solution includes the recited specific processing and communication operations to provide a navigation map that is interactively updated, based on user gameplay, and queried by non-player characters,"

which is "a more elegant [technique] to [solve] the problem, and facilitates non-player character control that is realistic without the computational costs of known techniques." *Id.* at 18. Additionally, Appellant contends, "claims 1 and 10 recite functionality that a general purpose computer could not perform without being reconfigured into a special purpose computer." *Id.* at 21.

Under 35 U.S.C. § 101, an invention is patent-eligible if it claims a "new and useful process, machine, manufacture, or composition of matter." 35 U.S.C. § 101. The Supreme Court, however, has interpreted § 101 to include an implicit exception: "[l]aws of nature, natural phenomena, and abstract ideas are not patentable." *Alice Corp. v. CLS Bank Int'l*, 573 U.S. 208, 216 (2014) (citation omitted).

The Supreme Court, in *Alice*, reiterated the two-step framework previously set forth in *Mayo Collaborative Services v. Prometheus Laboratories, Inc.*, 566 U.S. 66, 75–77 (2012), "for distinguishing patents that claim laws of nature, natural phenomena, and abstract ideas from those that claim patent-eligible applications of those concepts." *Alice*, 573 U.S. at 217. The first step in the analysis is to "determine whether the claims at issue are directed to one of those patent-ineligible concepts." *Id.* For example, abstract ideas include, but are not limited to, fundamental economic practices, methods of organizing human activities, an idea of itself, and mathematical formulas or relationships. *Id.* at 218–20. The "directed to" inquiry asks not whether "the claims *involve* a patent-ineligible concept," but instead whether, "considered in light of the specification, . . . 'their character as a whole is directed to excluded subject matter.'" *Enfish, LLC v. Microsoft Corp.*, 822 F.3d 1327, 1335 (Fed. Cir. 2016) (internal

citations omitted). In that regard, we determine whether the claims "focus on a specific means or method that improves the relevant technology" or are "directed to a result or effect that itself is the abstract idea and merely invoke generic processes and machinery." *McRO, Inc. v. Bandai Namco Games Am. Inc.*, 837 F.3d 1299, 1314 (Fed. Cir. 2016).

If, at the first stage of the *Alice* analysis, we conclude that the claims are not directed to a patent-ineligible concept, they are considered patent eligible under § 101 and the inquiry ends. *Rapid Litig. Mgmt. Ltd. v. CellzDirect, Inc.*, 827 F.3d 1042, 1047 (Fed. Cir. 2016).

If the claims are directed to a patent-ineligible concept, the second step in the analysis is to consider the elements of the claims "individually and 'as an ordered combination'" to determine whether there are additional elements that "'transform the nature of the claim' into a patent-eligible application." *Alice*, 573 U.S. at 217 (quoting *Mayo*, 566 U.S. at 79, 78). In other words, the second step is to "search for an "'inventive concept'"—*i.e.*, 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.'" *Id.* at 217–18 (brackets in original) (quoting *Mayo*, 566 U.S. at 72–73). The prohibition against patenting an abstract idea "'cannot be circumvented by attempting to limit the use of the formula to a particular technological environment' or adding 'insignificant postsolution activity.'" *Bilski v. Kappos*, 561 U.S. 593, 610–11 (2010) (internal citation omitted).

The Patent and Trademark Office (the "Office") has published revised guidance on the application of 35 U.S.C. § 101. *2019 Revised Patent Subject Matter Eligibility Guidance*, 84 Fed. Reg. 50 (Jan. 7, 2019) ("2019

Guidance"). Under the 2019 Guidance, the Office first looks 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* 2019 Guidance 84 Fed. Reg. at 52, 54–55; *see also* MPEP § 2106.05(a)–(c), (e)–(h).[6]

Only if a claim (1) recites a judicial exception, and (2) does not integrate that exception into a practical application, does the Office then look to whether the claim: (3) adds a specific limitation beyond the judicial exception that are 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 Guidance, 84 Fed. Reg. at 56. The above framework guides our analysis herein.

The Examiner contends that claims 1 and 10 are directed to "organizing human activity." Final Act. 3, 5. Under the 2019 Revised Guidance, we begin our analysis by first turning to *Alice* step one (Step 2A of the 2019 Revised Guidance). Under Step 2A, Prong 1 of the 2019 Revised Guidance, we determine whether the claims recite a judicial exception. Regarding "certain methods of organizing human activity," which the Examiner relies upon here, the 2019 Guidance identifies the following as markers of such activity: (1) "fundamental economic principles or practices"; (2) "commercial or legal interactions," such as "agreements in

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[6] All references to the MPEP are to Rev. 08.2017 (Jan. 2018).

the form of contracts," "marketing or sales activities or behaviors," and
"business relations"; and (3) "managing personal behavior or relationships
or interactions between people," such as "social activities, teaching, and
following rules or instructions." 2019 Guidance, 84 Fed. Reg. at 52.
However, the Examiner has not explained sufficiently why claims 1 and 10
fall properly within the judicial exception of certain methods of organizing
human activity.

> In the Answer, the Examiner states,

> [the] recited steps [of claims 1 and 10] are similar to the
> abstract idea of data recognition and storage at issue in [*Content
> Extraction & Transmission v. Wells Fargo Bank, N.A.*, 776 F.3d
> 1343 (Fed. Cir. 2014)] because both claim sets are directed to
> 1) collecting data (i.e., storing the claimed regions of the
> navigation map and obtaining instructions), 2) recognizing
> certain data within the collected data set (i.e., the claimed steps
> of determining and defining certain information), and 3) storing
> that recognized data in a memory (i.e., the claimed storing and
> updating of the maps).

Ans. 3. In *Content Extraction*, the claims were for "[a] method of
processing information from a diversity of types of hard copy documents,"
which involved nothing more than collecting data from the hard copy
documents, recognizing certain data from the those documents, and storing
the recognized data. 776 F.3d at 1345, 1347. The Federal Circuit found
these to be common functions performed by humans and "banks have, for
some time, reviewed checks, recognized relevant data such as the amount,
account number, and identity of account holder, and stored that information
in their records." *Id.* at 1347. The Examiner, however, does not explain
how or why the claims at issue are similar to those recited in *Content
Extraction* beyond both including generally "collecting data," "recognizing

certain data," and "storing that recognized data." For these reasons, we are not persuaded that the Examiner has shown persuasively that the claims recite an abstract idea.

However, assuming the claims recite an abstract idea, we turn to Step 2A, Prong 2 of the 2019 Revised Guidance, to determine whether the judicial exception is "integrated into a practical application." The Federal Circuit has "cautioned that [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*, 837 F.3d at 1313. Here, the claims recite more than simply collecting, recognizing, and storing data. Claims 1 and 10 specify a specific set of rules to update navigation maps, which non-player characters query and use while moving around a virtual space, to reflect non-traversable regions, traversable regions, and traversable boundaries in response to changes made to the non-traversable object(s) in the virtual space. Notably, the Specification indicates that the claimed set of rules provide an improved technique for operating non-player characters in a virtual space that reduces the need for "collision detection," which may be computationally costly for computer resources. *See* Spec. ¶ 4. Unlike in *Content Extraction*, the recited claim steps in this case are not computer implementations of common functions performed by humans, but processing steps that are specifically addressing prior inefficiencies with how computers updated a navigation map in a virtual space during gameplay, and therefore are an improvement in the functioning of a computer. See MPEP § 2106.05(a). Thus, because claims 1 and 10 integrate the alleged judicial exception into a practical application, the claims are not directed to subject matter falling within any of the recognized judicial exceptions.

As a result, we are persuaded that the Examiner erred in concluding that the pending claims are judicially-excepted from patentability. Therefore, we reverse the Examiner's § 101 rejection of claims 1–18.

II.   Section 102 Rejection

The Examiner rejected claims 1, 2, 5, 7, 10, 11, 14, and 16 under 35 U.S.C. § 102, finding that Bergelt discloses each of the limitations for these claims. Final Act. 1–14. Appellant argues that the Examiner's rejection was an error "because Bergelt does not disclose a navigation map including both traversable regions of a virtual space and non-traversable regions of the virtual space." Appeal Br. 24, 29; Reply. Br. 9–10. For the following reasons, we agree.

Both independent claims 1 and 10 recite an electronic storage having a navigational map of a virtual space that includes "non-traversable regions that correspond to non-traversable objects located in the virtual space through which traversal by the characters of the virtual space is not permitted by the physics of the virtual space." *Id.* at 33, 36 (Claims App.). The Examiner relies on Bergelt's description of its "navigational graph" to show this limitation, which is explained most clearly in the Answer. Ans. 6–7. Bergelt discloses storing world data of the virtual space that includes "computer models of objects, textures to apply to those models, and topography data for the terrain in the virtual space," as well as a navigational graph that comprises a graph of nodes (defining locations within the virtual space) and paths/edges (defining travel vectors between the nodes). Bergelt ¶¶ 25–26. According to the Examiner, the "various nodes and paths discussed throughout Bergelt comprise a navigation graph which indicate

where the non-player character may travel." Final Act. 6 (citing Bergelt ¶ 6). Because some nodes may correspond to a "collision point," the Examiner finds that Bergelt discloses defining regions that non-player characters may traverse and regions that they may not traverse. *Id.* (citing Bergelt ¶¶ 25–26, 47–48; Fig. 8). The Examiner asserts that the "non-traversable regions" of claims 1 and 10 "correspond to the objects that would cause a collision." *Id.* (citing Bergelt ¶¶ 26, 39, 48).

Noting paragraph 42 of Bergelt, the Examiner contends, "Bergelt discloses [that] a shortcut may be found between a character's current position and the character's final target by performing periodic collision tests to ensure that the final target is always reachable." *Id.* The Examiner "submits that when there is a determination that the final target is all of sudden not reachable, such a determination would include identifying data . . . that indicates the current path . . . includes a non-traversable region, rendering it unreachable." The Examiner concludes that this shows that Bergelt discloses an electronic storage having a navigational map of a virtual space that includes "non-traversable regions that correspond to non-traversable objects located in the virtual space through which traversal by the characters of the virtual space is not permitted by the physics of the virtual space," as recited by claims 1 and 10. *Id.* at 6–7. The Examiner's evidence supporting this finding, however, is deficient.

Appellant argues persuasively that Bergelt stores only traversable nodes and paths as part of the navigational graph, and fails to disclose including non-traversable data. Appeal Br. 29; Reply Br. 9–10. Bergelt describes a "navigational graph" as being "navigable areas in the game (i.e., areas that are obstacle free and have terrain that can be traversed by the

character)." Bergelt ¶ 27. "A character can move anywhere within the navigational graph and traverse a defined portion of the world by traveling from a node across [paths] to other connected nodes and [paths]." *Id.* Notably, Bergelt describes "shortcuts" as paths that are taken when a "character move[s] *off of the navigational graph.*" *Id.* (emphasis added). The Examiner's reliance on the disclosed collision test to validate a potential shortcut as being traversable to evidence that Bergelt discloses storing a navigation map including "non-traversable regions" is misplaced.

This is so because, rather than having saved data establishing non-traversable regions within the navigational graph, Bergelt discloses using a collision test to determine whether a path, which is "off of the navigational graph," is traversable. For example, discussing Figure 8, Bergelt describes the system as determining that a "potential shortcut" is "unavailable" only after performing a reachability test to find the potential path actually collides with an object. Bergelt ¶ 48. As such, Bergelt does not disclose using the navigational graph itself to identify whether a selected path is non-traversable, but instead Bergelt teaches using the world data associated with the potential path to perform a "reachability test" to evaluate whether the path is traversable. The Examiner has failed to provide any evidence or technical reasoning to demonstrate that a skilled artisan would have viewed this process of checking for potential collisions when considering a potential shortcut as being a stored non-traversable region that is part of the navigational graph Bergelt discloses. To the contrary, Bergelt describes "shortcuts" as being "off of the navigational graph." Bergelt ¶¶ 27, 40–41, 45.

Although it may be correct that the stored "world data" of the virtual space in Bergelt may provide non-traversable information used to perform these collision tests, the Examiner has not shown persuasively that this data is part of the navigational graph Bergelt discloses. As a result, a preponderance of the evidence does not support the Examiner's finding that Bergelt discloses a navigational map of a virtual space that includes "non-traversable regions that correspond to non-traversable objects located in the virtual space through which traversal by the characters of the virtual space is not permitted by the physics of the virtual space," as claims 1 and 10 recite. Therefore, we do not sustain the Examiner rejection of claims 1 and 10, as well as claims 2, 5, 7, 11, 14, and 16 depending therefrom, as being anticipated by Bergelt.

III.   Section 103 Rejections

The Examiner's rejections of claims 3, 4, 12, and 13 as being unpatentable under 35 U.S.C. § 103 in view of Bergelt and Axelrod, as well as claims 6, 8, 9, 15, 17, and 18 as being unpatentable under 35 U.S.C. § 103 in view of Bergelt and Minagawa, each depend on the Examiner's finding that Bergelt anticipates independent claims 1 and 10. Therefore, because we do not sustain the Examiner's finding that Bergelt discloses each of the recited limitations of claims 1 and 10, we also do not sustain the Examiner rejections of claims 3, 4, 6, 8, 9, 12, 13, 15, 17, and 18.

CONCLUSION

The Examiner's decision rejecting claims 1–18 is reversed.

DECISION SUMMARY

Claims Rejected	Basis	Affirmed	Reversed
1–18	§ 101		1–18
1, 2, 5, 7, 10, 11, 14, 16	§ 102 Bergelt		1, 2, 5, 7, 10, 11, 14, 16
3, 4, 12, 13	§ 103 Bergelt, Axelrod		3, 4, 12, 13
6, 8, 9, 15, 17, 18	§ 103 Bergelt, Minagawa		6, 8, 9, 15, 17, 18
Overall Outcome			1–18

REVERSED