## IN THE UNITED STATES DISTRICT COURT
## FOR THE DISTRICT OF DELAWARE

RECENTIVE ANALYTICS, INC.

                    Plaintiff,

                    v.

FOX CORPORATION, a Delaware
Corporation; FOX BROADCASTING
COMPANY, LLC, a Delaware limited liability
company; FOX SPORTS PRODUCTIONS,
LLC, a Delaware limited liability company,

                    Defendants.

Civil Action No. 22-1545-GBW

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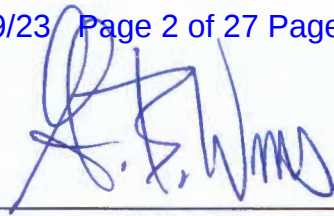
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## MEMORANDUM OPINION

September 19, 2023
Wilmington, Delaware

GREGORY B. WILLIAMS
UNITED STATES DISTRICT JUDGE

Plaintiff Recentive Analytics, Inc. ("Recentive") alleges that certain products of Defendants Fox Corporation, Fox Broadcasting Company, and Fox Sports Productions (together, "Fox") infringe United States Patent Nos. 10,911,811 ("the '811 patent"), 10,958,957 ("the '957 patent"), 11,386,367 ("the '367 patent") and 11,537,960 ("the '960 patent") (collectively, "the patents-in-suit").[1] D.I. 13 ¶¶ 13-16. Fox moves to dismiss Recentive's First Amended Complaint ("FAC") pursuant to Federal Rule of Civil Procedure 12(b)(6) for failure to state a claim upon which relief can be granted. D.I. 19 (the "Motion"). Fox argues that the claims of the patents-in-suit do not claim patent-eligible subject matter under 35 U.S.C. § 101. *Id.* The Court heard oral argument on Fox's motion on September 7, 2023. D.I. 33. For the reasons stated below, the Court grants Fox's Motion.

## I.     BACKGROUND

The '811 patent is entitled "Systems and Methods for Automatically and Dynamically Generating a Network Map." The '957 patent is a continuation of the '811 patent and shares the same title and specification. These two patents (collectively, the "Network Map Patents") are directed to methods for generating network maps (effectively, television schedules). Prior to the Network Map Patents, Recentive alleges that conventional techniques were "static and incapable of responding to changing conditions." '811 patent at 1:24-29. Furthermore, conventional network mapping processes were "unable to prioritize certain parameters or target criteria in the

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[1] The patents-in-suit were attached to Recentive's First Amended Complaint as Exhibits A-D. *See* D.I. 13, Exs. A-D. For clarity, the Court will cite to the relevant patent-in-suit rather than the exhibit.

creation of event schedules, could not be iteratively trained, and were not capable of collecting and

analyzing social media data to forecast the impact on the future series of live events." D.I. 13 ¶ 18.

The patented process improves on the prior art by allowing dynamic updating of the network map

based on changing conditions and optimizing the scheduling process using machine learning

techniques. '811 patent at 1:35-47; *id.* at claim 1.

Claim 1 of the '811 patent recites:

> A computer-implemented method for dynamically generating a network map, the method comprising:
>
> > receiving a schedule for a first plurality of live events scheduled to start at a first time and a second plurality of live events scheduled to start at a second time;
> >
> > generating, based on the schedule, a network map mapping the first plurality of live events and the second plurality of live events to a plurality of television stations for a plurality of cities,
> >
> > > wherein each station from the plurality of stations corresponds to a respective city from the plurality of cities,
> > >
> > > wherein the network map identifies for each station (i) a first live event from the first plurality of live events that will be displayed at the first time and (ii) a second live event from the second plurality of live events that will be displayed at the second time, and
> > >
> > > wherein generating the network map comprises using a machine learning technique to optimize an overall television rating across the first plurality of live events and the second plurality of live events;
> >
> > automatically updating the network map on demand and in real time based on a change to at least one of (i) the schedule and (ii) underlying criteria,
> >
> > > wherein updating the network map comprises updating the mapping of the first plurality of live events and the second plurality of live events to the plurality of television stations; and

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using the network map to determine for each station (i) the first live
event from the first plurality of live events that will be displayed at
the first time and (ii) the second live event from the second plurality
of live events that will be displayed at the second time.

*See* '811 patent at claim 1.

Claim 12 of the '811 patent is nearly identical to claim 1, adding only the limitation "one

or more computer processors programmed to perform operations comprising." *Id.* at claim 12.

The '957 patent is nearly identical, except that rather than being directed to "live events," it is

directed to "events." *See* D.I. 19, Ex. B (a comparison of the independent claims of the '811 patent

with the '957 patent). Both Network Map Patents recite a computer-implemented method of

receiving a schedule of events in two different time slots, assigning those events for each slot to

multiple TV stations, using machine learning to optimize TV ratings, and updating the network

map on demand and in real time. The Network Map Patents do not disclose a particular computer

system to perform the method, but rather a "generic computing device." *See, e.g.*, '811 patent at

5:4; '957 patent at 5:15. Similarly, they do not provide any details of the machine learning

algorithms, but merely recite that "any suitable machine learning technique can be used." *See,*

*e.g.*, '811 patent at 3:23; '957 patent at 3:34.

The '367 and '960 patents (collectively, the "Machine Learning Training Patents") share a

specification and a title ("Systems and Methods for Determining Event Schedules"). The Machine

Learning Training Patents are directed to optimizing event schedules and improve over the prior

art by considering "competing events, expenses, ticket prices, weather, performer availability,

venue availability, etc." '367 patent at 1:26-33. The Machine Learning Training Patents claim to

solve this problem by generating a schedule through a machine learning model, which has been

trained to optimize target features based on input parameters. *Id.* at 2:18-20. This model has been

iteratively trained to recognize how to optimize the target features. *Id.* at claim 1. The schedule can be dynamically updated. *Id.* at 1:63-67. Claim 1 of the '367 patent recites:

A computer-implemented method of dynamically generating an event schedule, the method comprising:

receiving one or more event parameters for series of live events, wherein the one or more event parameters comprise at least one of venue availability, venue locations, proposed ticket prices, performer fees, venue fees, scheduled performances by one or more performers, or any combination thereof;

receiving one or more event target features associated with the series of live events, wherein the one or more event target features comprise at least one of event attendance, event profit, event revenue, event expenses, or any combination thereof;

providing the one or more event parameters and the one or more event target features to a machine learning (ML) model, wherein the ML model is at least one of a neural network ML model and a support vector ML model;

iteratively training the ML model to identify relationships between different event parameters and the one or more event target features using historical data corresponding to one or more previous series of live events, wherein such iterative training improves the accuracy of the ML model;

receiving, from a user, one or more user-specific event parameters for a future series of live events to be held in a plurality of geographic regions;

receiving, from the user, one or more user-specific event weights representing one or more prioritized event target features associated with the future series of live events;

providing the one or more user-specific event parameters and the one or more user-specific event weights to the trained ML model;

generating, via the trained ML model, a schedule for the future series of live events that is optimized relative to the one or more prioritized event target features;

detecting a real-time change to the one or more user-specific event parameters;

providing the real-time change to the trained ML model to improve the accuracy of the trained ML model; and

updating, via the trained ML model, the schedule for the future series of live events such that the schedule remains optimized relative to the one or more prioritized event target features in view of the real-time change to the one or more user-specific event parameters.

*See* '367 patent at claim 1.

Claim 9 of the '367 patent is very similar to claim 1, just adding the limitation "one or more computer systems programmed to perform operations comprising." *Id.* at claim 9. Claims 11 and 19, instead of dealing with a "series of live events," involve "live events comprising performances by a plurality of performers." *Id.* at claims 11; 19. The '960 patent is nearly identical, except that instead of being directed to a "plurality of geographic locations" it is directed to "a plurality of performers" at a single venue. *See* '960 at claim 1.

## II.   LEGAL STANDARDS

### a.  Motion to Dismiss

To state a claim on which relief can be granted, a complaint must contain "a short and plain statement of the claim showing that the pleader is entitled to relief . . . ." Fed. R. Civ. P. 8(a)(2). Such a claim must plausibly suggest "facts sufficient to 'draw the reasonable inference that the defendant is liable for the misconduct alleged.'" *Doe v. Princeton Univ.*, 30 F.4th 335, 342 (3d Cir. 2022) (quoting *Ashcroft v. Iqbal*, 556 U.S. 662, 678 (2009)) (citing *Bell Atl. Corp. v. Twombly*, 550 U.S. 544, 557 (2007)). "A claim is facially plausible 'when the plaintiff pleads factual content that allows the court to draw the reasonable inference that the defendant is liable for the misconduct alleged.'" *Klotz v. Celentano Stadtmauer & Walentowicz LLP*, 991 F.3d 458, 462 (3d Cir. 2021) (quoting *Iqbal*, 556 U.S. at 678). But the Court will "'disregard legal conclusions and recitals of the elements of a cause of action supported by mere conclusory statements.'" *Princeton Univ.*, 30 F.4th at 342 (quoting *Davis v. Wells Fargo*, 824 F.3d 333, 341 (3d Cir. 2016)). Under Rule

12(b)(6), the Court must accept as true all factual allegations in the complaint and view those facts in the light most favorable to the plaintiff. *See Fed. Trade Comm'n v. AbbVie Inc*, 976 F.3d 327, 351 (3d Cir. 2020).

### b. Patent-Eligible Subject Matter

Patentability under 35 U.S.C. § 101 is a threshold legal issue. *Bilski v. Kappos*, 561 U.S. 593, 602 (2010). The § 101 inquiry is properly raised at the pleading stage if it is apparent from the face of the patent that the asserted claims are not directed to eligible subject matter. *Cleveland Clinic Found. v. True Health Diagnostics LLC*, 859 F.3d 1352, 1360 (Fed. Cir. 2017), *cert. denied*, 138 S. Ct. 2621 (2018); *see also SAP Am., Inc. v. InvestPic, LLC*, 898 F.3d 1161, 1166 (Fed. Cir. 2018) (stating that patent eligibility "may be, and frequently has been, resolved on a Rule 12(b)(6) or (c) motion"); *FairWarning IP, LLC v. Iatric Sys., Inc.*, 839 F.3d 1089, 1097 (Fed. Cir. 2016) (stating that "it is possible and proper to determine patent eligibility under 35 U.S.C. § 101 on a Rule 12(b)(6) motion" (quoting *Genetic Techs. Ltd. v. Merial L.L.C.*, 818 F.3d 1369, 1373-74 (Fed. Cir. 2016)); *Voter Verified, Inc. v. Election Sys. & Software LLC*, 887 F.3d 1376, 1379 (Fed. Cir. 2018) (affirming Rule 12(b)(6) dismissal based on § 101 patent ineligibility). This is, however, appropriate "only when there are no factual allegations that, taken as true, prevent resolving the eligibility question as a matter of law." *Aatrix Software, Inc. v. Green Shades Software, Inc.*, 882 F.3d 1121, 1128 (Fed. Cir. 2018).

Section 101 of the Patent Act defines patent-eligible subject matter. It states, "[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, subject to the conditions and requirements of this title." 35 U.S.C. § 101. The Supreme Court has held that there are exceptions to § 101. "Laws of nature, natural phenomena, and abstract ideas are not patentable."

*Alice Corp. Pty. v. CLS Bank Int'l*, 573 U.S. 208, 216 (2014) (internal quotation marks and citation omitted). "[I]n applying the § 101 exception, [the court] must distinguish between patents that claim the 'building blocks' of human ingenuity and those that integrate the building blocks into something more[] thereby 'transforming' them into a patent-eligible invention. The former 'would risk disproportionately tying up the use of the underlying' ideas and are therefore ineligible for patent protection. The latter pose no comparable risk of pre-emption, and therefore remain eligible for the monopoly granted under our patent laws." *Id.* at 217 (cleaned up).

The Supreme Court's *Alice* decision established a two-step framework for determining patent-eligibility under § 101. In the first step, the court must determine whether the claims at issue are directed to a patent-ineligible concept. *Id.* In other words, are the claims directed to a law of nature, natural phenomenon, or abstract idea? *Id.* If the answer to the question is "no," then the patent is not invalid for teaching ineligible subject matter under § 101. If the answer to the question is "yes," then the court proceeds to step two, where it considers "the elements of each claim both individually and as an ordered combination" to determine if there is 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 (alteration in original). "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.* at 221 (internal quotation marks and citation omitted). Further, "the prohibition against patenting abstract ideas cannot be circumvented by attempting to limit the use of [the idea] to a particular technological environment." *Id.* at 222 (quoting *Bilski*, 561 U.S. at 610-11). Thus, "the mere recitation of a generic computer cannot transform a patent-ineligible abstract idea into a patent-eligible invention." *Id.* at 223.

## III.   DISCUSSION

### a.  Claim Construction and Factual Disputes

Recentive asserts that "resolution of this issue before claim construction and expert discovery is premature." D.I. 20 at 2. Fox replies that Recentive did not provide its own claim construction, nor explain why any claim construction would render the claims eligible for patent protection. D.I. 23 at 1.

The § 101 eligibility inquiry is a matter of law for the Court to determine. *See Bilski*, 561 U.S. at 602. "At the pleading stage, to the extent the § 101 question of law is informed by subsidiary factual issues, those facts are to be construed in the light most favorable to Plaintiff." *Two-Way Media Ltd. v. Comcast Cable Commc'ns, LLC*, C.A. No. 14-1006-RGA, 2016 WL 4373698, at *3 (D. Del. Aug. 15, 2016), *aff'd*, 874 F.3d 1329 (Fed. Cir. 2017) (citations omitted). The Court need not undergo claim construction before performing a § 101 analysis. *Int'l Bus. Machines Corp. v. Zynga Inc.*, C.A. No. 22-590-GBW, 2022 WL 17177735, at *4 (D. Del. Nov. 23, 2022) ("There is no bright-line rule that a court must construe terms in the asserted patent before it performs a § 101 analysis.") (citing *Bancorp Servs., L.L.C. v. Sun Life Assur. Co. of Canada (U.S.)*, 687 F.3d 1266, 1273-74 (Fed. Cir. 2012)). Dismissal is appropriate when a plaintiff has failed to identify claim terms requiring a construction that could affect the patent-ineligibility analysis. *Cleveland Clinic Found. v. True Health Diagnostics LLC*, 859 F.3d 1352, 1360 (Fed. Cir. 2017) ("[I]t was appropriate for the district court to determine that the [asserted] patents were ineligible under § 101 at the motion to dismiss stage" when the patentee "provided no proposed construction of any terms or proposed expert testimony that would change the § 101 analysis").

The Court agrees with Fox that Recentive has not provided any proposed claim construction or an explanation of why any proposed claim construction would alter the § 101 analysis.[2] Thus, the Court continues to the § 101 analysis undeterred.

Recentive also argues that factual disputes prevent resolution of the § 101 dispute at the pleadings stage. D.I. 20 at 9-10. The first factual dispute Recentive raises stems from Recentive's assertion in its FAC that machine learning techniques "do not mimic mental processes, but are separate structures or architectures that receive, process, and generate data in a unique manner." *Id.* at 10 (citing D.I. 13 ¶¶ 29, 34). In its Motion, Fox argues that "contrary to Recentive's assertions, however, these limitations simply reflect manipulating and organizing data using known mathematical techniques." D.I. 19 at 12. Recentive responds that Fox's argument constitutes a factual contradiction with Recentive's statement in its FAC, thereby requiring denial of Fox's Motion. D.I. 20 at 9.

At the outset, the Court notes that Recentive's assertions that the patents-in-suit do not mimic mental processes and that machine learning techniques are unique are the sorts of "mere conclusory statements" that a Court may disregard at the 12(b)(6) stage. *Doe*, 30 F.4th at 342. Furthermore, these statements do not necessarily contradict. It can be true that machine learning techniques generate data in a manner distinct from the human mind, while still being true that machine learning algorithms use known mathematical techniques to do so. Thus, in addition to being mere conclusory statements, there is no factual contradiction here that would prevent the

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[2] During oral argument, Recentive claimed that their briefing included a claim construction for the term "generating" that incorporated the display limitations removed during prosecution. September 7 Hearing Rough Transcript at 37. The Court disagrees. Even if it did provide a construction, Recentive has not provided any explanation for how this construction would change the § 101 analysis.

Court from reaching the § 101 analysis. To the extent that Fox is arguing that machine learning does not have separate structures that process data in a manner different from the human mind, the Court draws all assumptions in favor of Recentive at this stage.

The second factual dispute that Recentive identifies is with respect to Fox's argument that machine learning techniques are generic. Recentive argues that the patents' recitation of "iteratively training" the machine learning models constitutes a factual allegation that requires resolution. D.I. 20 at 9. Again the Court does not find any factual dispute that would preclude the Court from reaching the § 101 analysis: iterative training can itself be a generic part of machine learning, a generic technique. *See* September 7 Hearing Rough Transcript at 41 ("[W]hat's described is iteratively training the machine learning model to identify relationships, and then generating via the trained ML model a schedule. What's being described here is what machine learning models do.").

Lastly, Recentive argues dismissal is inappropriate because of allegations in its FAC that the amount of data to be collected would make it "impossible for a human to produce near-simultaneous updates to network maps," that machine learning produces "a better result than what a human could perform alone" and that machine leaning provides a "better and more optimized event schedule than what a human could achieve without the claimed techniques." D.I. 13 at ¶¶ 20, 22, 33. Recentive argues this contradicts Fox's assertions that the patents-in-suit are directed toward the "automation of an entirely manual process." D.I. 20 at 10. The Court accepts Recentive's factual allegations as true at this stage but ultimately finds they do not change the analysis.

### b. Patent Office Guidance

The parties dispute the relevance of the United States Patent and Trademark Office's ("PTO") guidance to the pending § 101 analysis. Recentive identifies the PTO's Subject Matter Eligibility Example 39 "Method for Training a Neural Network for Facial Detection" as evidence that the patents-in-suit claim patent-eligible subject matter and urges the Court not to "upend" this guidance. D.I. 20 at 18. Fox urges the Court to ignore the guidance, asserting that the Court need not defer to the PTO. D.I. 23 at 4 (citing *Fitbit Inc. v. AliphCom*, C.A. No. 16-118, 2017 WL 819235, at *18 (N.D. Cal. Mar. 2, 2017) (courts "need not defer to the examiner's conclusions on patent eligibility" in determining eligibility)).

PTO guidance "is not, itself, the law of patent eligibility, does not carry the force of law, and is not binding on our patent eligibility analysis." *In re Rudy*, 956 F.3d 1379, 1382 (Fed. Cir. 2020). "While we greatly respect the PTO's expertise on all matters relating to patentability, including patent eligibility, we are not bound by its guidance." *Cleveland Clinic Found. v. True Health Diagnostics LLC*, 760 F. App'x 1013, 1020 (Fed. Cir. 2019). Indeed, courts in this District have previously confronted the PTO's examples and declined to defer to their findings or conclusions. *See, e.g., Citrix Sys., Inc. v. Avi Networks, Inc.*, 363 F. Supp. 3d 511, 516 n.2 (D. Del. 2019) (acknowledging the similarity of the case to a PTO example but coming out the other way).

While the Court is not required to defer to Example 39 or the PTO's guidance, the Court has closely reviewed Example 39 and concludes that the present analysis does not conflict with Example 39, despite Recentive's cursory analogies. Example 39 relates to a neural network training patent and describes a set of novel methods to improve prior art neural networks—e.g., an expanded training set using mathematical transformations and the minimization of false positives

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using a distinctive training method. D.I. 21, Ex. D at 8-9. The patents-in-suit, unlike Example 39,

do not involve improving a prior art machine learning technique but, rather, only relate to the

application of machine learning techniques to a manual process. *Compare id.* at 8 (claiming the

use of an expanded training set and a novel training method) *with* '811 patent at 3:21-30 (noting

that "any suitable machine learning technique can be used") *and* '367 patent at claim 1 (describing

only the use of either a support vector model or a neural network, with no further detail). As such,

the PTO's guidance that "[w]hile some of the limitations may be based on mathematical concepts,

the mathematical concepts are not recited in the claims" is not relevant here—Recentive recites

those very mathematical concepts in its claims (by stating to apply generic machine learning

techniques to a pre-existing process). D.I. 21, Ex. D at 9; *see* '811 patent at claim 1; '367 patent

at claim 1. In short, the patents-in-suit are not directly analogous to Example 39. Thus, the PTO

guidance is not relevant to the Court's § 101 analysis of the patents-in-suit.

### c. Representativeness

The parties dispute whether Fox has proven representativeness. The Court finds that it has.

Courts may treat a claim as representative if all the claims are "substantially similar and linked to

the same abstract idea." *Content Extraction & Transmission LLC v. Wells Fargo Bank, Nat. Ass'n,*

776 F.3d 1343, 1348 (Fed. Cir. 2014). "Courts may [also] treat a claim as representative in certain

situations, such as if the patentee does not present any meaningful argument for the distinctive

significance of any claim limitations not found in the representative claim or if the parties agree to

treat a claim as representative." *Berkheimer v. HP Inc.*, 881 F.3d 1360, 1365 (Fed. Cir. 2018).

Courts will find a claim representative if "all of the challenged claims relate to the same abstract

idea" and none of the other "claims add one or more inventive concepts that would result in patent

eligibility." *Cronos Techs., LLC v. Expedia, Inc.*, C.A. No. 13-1538-LPS, 2015 WL 5234040, at

*2 (D. Del. Sept. 8, 2015).  Courts have declined to rule on a § 101 motion to dismiss when the accused infringer failed to meet its burden to show that its choice of representative claim is proper. *Id.* at *3-4.

Fox asserts that claim 1 of the '811 patent is representative of the Network Map Patents. D.I. 19 at 3.  Claim 1 of the '811 patent recites generating a network map by "receiving" a schedule of events, "generating" a network map divided by cities, wherein "generating the network map comprises using a machine learning technique to optimize an overall television rating," "automatically updating" the network map based on demand in real time, and "using the network map" to determine for each station the schedule. *See* '811 patent at claim 1.  In its briefing, Fox explains why each of the other claims in the Network Map Patents are directed to the same abstract idea recited in claim 1, and why these other claims contain no inventive step. D.I. 19 at 2-4, 18-20.  For example, Fox argues that claim 6 of the '811 patent (requiring generating the network map based on weather, news, or gambling data) fails because "collecting and analyzing specific types of information from specific types of information sources (including real time measurements) . . . does nothing significant to differentiate a process from ordinary mental processes." D.I. 19 at 18-19 (quoting *Power Analytics Corporation v. Operation Technology, Inc.*, C.A. No. 16-1955, 2017 WL 5468179, at *5 (C.D. Cal. July 13, 2017)).

Recentive briefly criticizes Fox's efforts to prove representativeness, stating that Fox "glosses over the dependent claims and provides only rote explanations . . . ." D.I. 20 at 19.  Other than dependent claim 10 of the '811 patent, Recentive has not provided a meaningful argument as to any other claim and, thus, has "waived any argument that those claims should be analyzed separately." *Affinity Labs of Texas, LLC v. DIRECTV, LLC*, 838 F.3d 1253, 1264 n.4 (Fed. Cir. 2016).

Dependent claim 10 of the '811 patent recites "[t]he method of claim 1, wherein the automatically updating step comprises generating multiple network maps based on multiple user entered changes." '811 patent at claim 10. Recentive notes that, "rather than generating a single map," the process claimed in dependent claim 10 generates "an extensive repository of maps" which is "simultaneously generated based on multiple input changes." D.I. 20 at 20.[3] This, Recentive argues, is sufficient to confer patent eligibility. Fox responds that precedent dictates that "analyzing multiple inputs, 'including real time measurements,' 'does nothing significant to differentiate a process from ordinary mental processes.'" D.I. 23 at 10 (quoting *Power Analytics,* 2017 WL 5468179, at *5). Claim 10 has two limitations: generating multiple maps, and generating those multiple maps based on multiple input changes. Neither of these limitations meaningfully alters the Court's § 101 analysis. Creating several network maps is substantially similar to creating one network map—if the latter is abstract, so is the former. Similarly, generating maps using input changes is not meaningfully different from the process in claim 1 of the '811 patent. Therefore, the Court concludes that claim 1 of the '811 patent is representative of the Network Map Patents.

Fox asserts that claim 1 of the '367 patent is representative of the Machine Learning Training patents. D.I. 19 at 5. Recentive does not dispute this beyond the broad allegation that Fox glossed over the dependent claims. D.I. 20 at 19. As such, Recentive has waived any argument that claim 1 of the '367 patent does not represent the Machine Learning Training Patents and the Court finds that claim 1 of the '367 patent is representative.

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[3] The Court notes it is highly dubious whether merely repeating the language of the dependent claim and asserting it is not representative constitutes a "meaningful argument for the distinctive significance of any claim limitations." *Berkheimer,* 881 F.3d at 1365.

### d. Patent-eligible Subject Matter

#### i. *Alice* Step 1

The Court must first determine whether claim 1 of the '811 patent (and, thus, the Network Map Patents which it represents) and claim 1 of the '367 patent (and, thus, the Machine Learning Training Patents which it represents) are directed to abstract ideas. For the reasons stated below, the Court finds that the Network Map Patents and the Machine Learning Training Patents are directed to the abstract ideas of producing network maps and event schedules, respectively, using known generic mathematical techniques.

Recentive claims that the "central inventive contribution" of the Network Map Patents that renders the claims patent-eligible is the "application of trained machine learning algorithms to generate network maps that are dynamically updated and optimized in real-time." *Id.* at 8. Recentive claims that the central inventive concept for the Machine Learning Training Patents is using those machine learning algorithms to generate "event schedules that are dynamically updated and optimized in real-time." *Id.* at 8-9. Both Recentive and Fox largely treat the two sets of patents together. *E.g.*, D.I. 19 at 16-17; D.I. 20 at 9-10. The Court will do the same.

The Supreme Court and the Federal Circuit have provided some guideposts as to what constitutes an "abstract idea." For example, claims that recite "'method[s] of organizing human activity' are not patent-eligible because they are abstract ideas." *Smartflash LLC v. Apple Inc.*, 680 F. App'x 977, 982 (Fed. Cir. 2017) (quoting *Alice*, 573 U.S. 208 at 220). "[A] process that employs mathematical algorithms to manipulate existing information to generate additional information" is an abstract idea. *Digitech Image Techs. LLC v. Elecs. for Imaging, Inc.*, 758 F.3d 1344, 1351 (Fed. Cir. 2014); *see also Elec. Power Grp., LLC v. Alstom S.A.*, 830 F.3d 1350, 1353 (Fed. Cir. 2016) ("[C]ollecting information, analyzing it, and displaying certain results of the

collection and analysis" is a "familiar class of claims directed to a patent-ineligible concept"). Claims that are "'directed to an improvement to computer functionality'" are not abstract, while claims "'simply adding conventional computer components to well-known business practices'" are abstract. *In re TLI Commc'ns LLC Patent Litig.*, 823 F.3d 607, 612 (Fed. Cir. 2016) (quoting *Enfish*, 822 F.3d at 1335-38). In deciding questions of patent eligibility and, specifically, in navigating the parameters of an abstract idea, it is proper for courts to compare the claims at issue to those previously analyzed in other judicial decisions. *See, e.g., Elec. Power Grp.*, 830 F.3d at 1351-54; *see also Enfish*, 822 F.3d at 1334 (allowing courts to "compare claims at issue to those claims already found to be directed to an abstract idea in previous cases").

The Court finds that claim 1 of the '811 patent recites four steps: (1) a collecting step, i.e., receiving current schedules of events; (2) an analyzing step, i.e., using a machine learning algorithm to create a network map; (3) an updating step, i.e. updating the network map based on real time information; and (4) a using step, i.e. using that network map to determine for each station which event will be shown.

The Court finds that claim 1 of the '367 patent also recites four steps: (1) a collecting step, i.e., receiving event parameters (e.g., venue locations, fees) and target features (e.g., event revenue); (2) a training step, i.e., feeding this data into a machine learning model and training it to identify relationships; (3) an output step, i.e., inputting characteristics of future live events and receiving from the machine learning model an optimized schedule; and (4) an updating step, i.e., detecting changes to the inputs and feeding those inputs to the machine learning model to re-optimize the schedule.

Both the Network Map Patents and the Machine Learning Training Patents "collect[] information, analyz[e] it, and display[] certain results of the collection," a "familiar class of claims

directed to a patent-ineligible concept." *Elec. Power Grp., LLC*, 830 F.3d at 1353. Recentive makes three arguments to differentiate the patents-in-suit from those patents previously found to claim patent-ineligible subject matter. First, Recentive argues that machine learning algorithms are unique since they process information differently from how the human brain could or would. Second, Recentive argues that humans could not perform the patented processes, because the data and algorithms are too complex. Third, Recentive analogizes to the Federal Circuit decision in *McRO, Inc. v. Bandai Namco Games Am. Inc.*, 837 F.3d 1299 (Fed. Cir. 2016), wherein the patents-in-suit were directed to a concrete application of mathematical rules, not the rules themselves. Each of these arguments fails.

Recentive contends that machine learning algorithms process information differently from the human brain, in that "humans process data qualitatively, rather than quantitatively."[4] D.I. 20 at 12. It notes that machine learning can identify patterns and details imperceptible to humans, and thereby optimizes maps in a different way than the human brain would or could. *Id.* However, this argument misses the point. It is irrelevant whether a human making a network map would run a support vector machine in their brain. The relevant question is whether the machine learning processes are mathematical algorithms. "[Courts] have treated analyzing information by steps people go through in their minds, *or by mathematical algorithms*, without more, as essentially mental processes within the abstract-idea category." *Elec Power Grp.*, 830 F.3d at 1354 (emphasis added). Because machine learning is algorithmic in nature, the Court finds that the patents-in-suit are directed to an abstract idea.

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[4] The Court also notes this is ad hoc attorney argument, and not in the specification of the patents or the complaint.

Recentive next argues that the patents are eligible because the claimed processes require too much data and computing power for the human brain to do. D.I. 20 at 12 ("[T]he number of possible solutions is far beyond what a human could process."). Recentive cites *SRI Int'l, Inc. v. Cisco Systems, Inc.*, 930 F.3d 1295, 1304 (Fed. Cir. 2019) for the proposition that when the "human mind is not equipped" to engage in the patented process, the process is not abstract. In *SRI*, the Federal Circuit held that, because the human mind was not equipped to engage in network monitoring of specific network packets, the patented claims were eligible. *SRI*, 930 F.3d at 1304. Unlike in *SRI*, humans can engage in the mathematical techniques to perform machine learning (albeit slowly)—they would not need a new network packet-sensing organ like they would in *SRI*. *See* D.I. 13 ¶ 20 ("[B]y the time a human had collected the data, analyzed it, and produced a revised network map or event schedule, the data would be obsolete"—implying that humans can indeed do these steps, it will just take longer). Indeed, the Court in *SRI* expressly limited its decision to cases involving improvement of technology, emphasizing that "the claims here are not directed to using a computer as a tool—that is, automating a conventional idea on a computer. Rather, the representative claim improves the technical functioning of the computer and computer networks by reciting a specific technique for improving computer network security." *SRI*, 930 F.3d at 1304. In contrast, the patents-in-suit do not improve technical functioning; the patents-in-suit merely use a computer as a tool to perform network mapping and event scheduling.

Recentive's argument flies in the face of recent Federal Circuit precedent that holds that a human being incapable of matching processing speed does not make an abstract process patent-eligible. *Trinity Info Media, LLC I Covalent, Inc.*, 72 F.4th 1355, 1363-65 (Fed. Cir. 2023). In *Trinity*, the asserted patents relate to "a poll-based networking system that connects users based on similarities as determined through poll answering and provides real-time results to the users."

*Id.* at 1358. The patentee argued that humans could not engage in the same process, since humans cannot "perform nanosecond comparisons and aggregate result values with huge numbers of polls and members." *Id.* at 1363-64. The Federal Circuit rejected this argument for two reasons. First, the arguments were not "tethered to the asserted claims, which do not require nanosecond comparisons or aggregating huge numbers of polls and members." *Id.* at 1363. Second, the Federal Circuit noted as follows:

> [A]lthough a human could not "detect[ ] events on an interconnected electric power grid in real time over a wide area and automatically analyz[e] the events on the interconnected electric power grid," we nevertheless found such claims to be directed to an abstract idea in *Electric Power Group*. 830 F.3d at 1351, 1353–54. Similarly, a human could not communicate over a computer network without the use of a computer, yet we held that claims directed to enabling "communication over a network" were focused on an abstract idea in *ChargePoint*. 920 F.3d at 766– 67. Likewise, Trinity's asserted claims can be directed to an abstract idea even if the claims require generic computer components or require operations that a human could not perform as quickly as a computer.

*Id.* at 1364. The same analysis employed by the Court in *Trinity* applies in the instant case. First, the patents-in-suit do not require that the machine learning process be complex—indeed they claim "regression" and "decision tree[s]" as relevant machine learning processes. D.I. 20 at 12. The patents-in-suit do not require a certain quantity of input data.[5] Thus, based solely on the claim language, the patents-in-suit do not require the sorts of processing limitations Recentive asserts.

Second, the fact that a human cannot literally do the claimed process is not a barrier when the process itself is abstract. Just as a human cannot literally communicate over a computer network, humans cannot literally run a machine learning algorithm. However, each process remains abstract, as they are directed to an abstract idea. While *Trinity* does not involve machine

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[5] While the patents-in-suit do require "real-time" updating, so did the patents in *Trinity*. D.I. 20 at 17; *see Trinity*, 72 F. 4th at 1358. Furthermore, claims that require "automatic, real-time analysis" "are merely directed to using generic computer components to add efficiency and speed to the abstract idea." *Nice Sys. Ltd. v. Clickfox, Inc.*, 207 F. Supp. 3d 393, 401 (D. Del. 2016).

learning, this Court finds its reasoning highly persuasive. Similar to *Trinity*, the Court finds that the claims of the patents-in-suit can be directed to an abstract idea even if the claims require generic machine learning or operations that a human could not perform as quickly as a computer using machine learning.

In its last argument to distinguish the Federal Circuit's precedent that algorithmic processes are unpatentable, Recentive analogizes the patents-in-suit to those in *McRO, Inc. v. Bandai Namco Games Am. Inc.*, 837 F.3d 1299 (Fed. Cir. 2016). *McRO* involved patents directed to automating rules sets for lip-synching animation. *Id.* at 1313. The Federal Circuit held that the use of an unconventional rule set distinguished the patents from the prior art human methods, as long as the application of the rules created a tangible result (the sequence of animated characters). *Id.* at 1315. The Federal Circuit emphasized that the genus of rules improved the prior subjective process, rendering the claims patent-eligible. *Id.* at 1316.

Fox distinguishes *McRO* for the following three reasons. First, it points to countervailing Federal Circuit precedent that held various optimization techniques to be unpatentable. D.I. 23 at 7-8. Second, it points to the fact that *McRO* dealt with the replacement of an artistic, subjective, process, while the claimed invention replaces an imperfect objective process. *Id.* at 8. Third, it points to the requirement in *McRO* that the rules be "unconventional." *Id.* (quoting *McRO*, 837 F.3d at 1303). When considered in combination, the Court finds that these three factors are sufficient to distinguish *McRO*. Notably, the Federal Circuit has generally been hesitant to expand *McRO* beyond its facts. *See, e.g., Enco Sys., Inc. v. DaVincia, LLC*, 845 F. App'x 953, 957 (Fed. Cir. 2021) (distinguishing *McRO* because the claims were "limited to rules with specific characteristics and set out meaningful requirements for the first set of rules"); *Sanderling Mgmt. Ltd. v. Snap Inc.*, 65 F.4th 698, 703 (Fed. Cir. 2023) (similar); *FairWarning IP, LLC v. Iatric Sys.,*

*Inc.*, 839 F.3d 1089, 1094 (Fed. Cir. 2016) (distinguishing *McRO* on the grounds that the prior art was artistically driven, rather than quantitatively optimized).

Fox highlights two cases that distinguish and limit *McRO*: *In re Bd. Of Trustees of Leland Stanford Junior Univ.*, 991 F.3d 1245 (Fed. Cir. 2021) ("*Stanford*") and *SAP Am., Inc. v. InvestPic, LLC*, 898 F.3d 1161 (Fed. Cir. 2018). D.I. 23 at 7. In *Stanford*, the patent was directed to a computerized method of inferring certain genetic data during sequencing. The Federal Circuit found the claims directed to patent-ineligible subject matter. *Stanford*, 991 F.3d at 1250. It reasoned that the "generic steps of implementing and processing calculations with a regular computer do not change the character of [the claim] from an abstract idea into a practical application." *Id.* That court distinguished *McRO* on the grounds that it "involve[d] practical, technological improvements extending beyond improving the accuracy of a mathematically calculated statistical prediction." *Id.* at 1251. Similarly, in *SAP*, the Federal Circuit found claims directed to statistically analyzing investment information and reporting the results to be abstract. *SAP*, 898 F.3d at 1161. Specifically, the Federal Circuit distinguished *McRO* on the grounds that *McRO* was directed "to the creation of something physical," unlike the quantitative predictions in *SAP*. *Id.*

The Court agrees with Fox that the claims of the patents-in-suit are more analogous to those in *SAP* and *Stanford* than those in *McRO*. First, the network maps at issue here appear more analogous to the tangibility level present in *SAP*'s financial models than the animated characters present in *McRO*. Both the models and the schedule are data objects—while the results can be written down, they are less tangible than the created animated characters from *McRO*. Second, changing a process where artists are trying to make a piece of art look good into an algorithmically driven one focused on quantitative prediction is distinct from changing a process where both

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humans and algorithms are trying to maximize TV ratings. *See FairWarning IP* 839 F.3d at 1094 (Fed. Cir. 2016) (distinguishing *McRO* because "[t]he claimed rules in *McRO* transformed a traditionally subjective process performed by human artists into a mathematically automated process executed on computers"). Third, *McRO* claimed specific and unconventional rules, while the rules in the patents-in-suit are admittedly conventional machine learning techniques described in broad functional terms. *See* '811 patent at 3:21-30 (noting that "any suitable machine learning technique can be used" and that it can be "trained using any suitable training data").

The Court's decision is in line with other district courts' analysis of machine learning claims. *Power Analytics Corporation v. Operation Technology, Inc.* involved patents directed to "gathering information, e.g., real-time and predicted data values, and analyzing and updating a model with that information, e.g., comparing the gathered data and evaluating the prediction deviations to update the model" using a "machine learning engine" described in functional terms. C.A. No. 16-1955, 2017 WL 5468179, at *4-6 (C.D. Cal. July 13, 2017). In *Power Analytics* the court found the claims to be unpatentable since the patent "does not specify how the engine is configured. None of the claims recites a particular structure for how to compare the real-time and predicted values, how to pick the threshold values or how to update the virtual model." *Id.* at *4; *see also Health Discovery Corp. v. Intel Corp.*, 577 F. Supp. 3d 570 (W.D. Tex. 2021) (holding ineligible a patent on a machine learning algorithm as directed solely to unpatentable mathematical ideas).[6] Similar to *Power Analytics*, the patents-in-suit do not claim a specific machine learning technique but a broad application of machine learning to perform predictive analytics in a field.

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[6] *Recentive* distinguishes *Health Discovery*, arguing that *Health Discovery* related to the improvement of a machine learning process, while the patents-in-suit only apply machine learning to an existing idea. D.I. 20 at 13. But this is a reason that the patents-in-suit are *more* abstract than those in *Health Discovery*, not less.

Because the claims of both the Network Map Patents and the Machine Learning Training Patents are directed to abstract ideas, the Court proceeds to *Alice* step two.

### ii.   *Alice* **Step 2**

In *Alice* step two, the Court must consider the elements of the claim, both individually and as an ordered combination, to assess whether "the limitations present in the claims represent a patent-eligible application of the abstract idea." *Content Extraction*, 776 F.3d at 1347 (citation omitted). Merely reciting the use of a generic computer or adding the words "apply it with a computer" cannot convert a patent-ineligible abstract idea into a patent-eligible invention. *Alice*, 573 U.S. at 223; *Versata Dev. Grp., Inc. v. SAP Am., Inc.*, 793 F.3d 1306, 1332 (Fed. Cir. 2015). "To save a patent at step two, an inventive concept must be evident in the claims." *RecogniCorp*, 855 F.3d at 1327 (citation omitted).

Recentive contends that "the use of machine learning algorithms to generate network maps and optimize event schedules" is the inventive concept contained in the claims. D.I. 20 at 15-16. Recentive's argument for an inventive concept heavily relies on *Amdocs (Israel) Ltd. v. Openet Telecom, Inc.*, 841 F.3d 1288 (Fed. Cir. 2016). In *Amdocs*, the Federal Circuit held eligible at *Alice* step two patent claims relating to managing data over large networks when they contained "specific enhancing limitations that necessarily incorporated the invention's distributed architecture." *Amdocs*, 841 F.3d at 1301.  The court noted that the patents brought an "unconventional technological solution (enhancing data in a distributed fashion) to a technological problem." *Id.* at 1300.  However, unlike *Amdocs*, wherein the court credited the patentee for inventing the claimed distributed architecture, here, it is undisputed that Recentive did not invent machine learning.  The inventive concept that Recentive identifies is merely the abstract idea—applying machine learning to optimization of network maps and event schedules.  Again, however,

this is insufficient to convert the patent-ineligible abstract idea into a patent-eligible invention. An inventive concept must be "sufficient to ensure that the patent in practice amounts to significantly more than a patent upon the [ineligible concept] itself." *Alice*, 573 U.S. at 217-18 (alteration in original).

The machine learning limitations are described only in broad functional terms and provide little guidance on model parameters or training technique—the Network Map Patents disclose "any suitable machine learning technique," while the Machine Learning Training Patents describe using either a neural network or a support vector model and iteratively training it. *See, e.g.*, '811 patent at 3:21-30; '367 patent at claim 1. These are broad, functionally described, well-known[7] techniques, not inventive concepts. The patents also claim only generic and conventional computing devices, which are insufficient to transform the abstract idea into patent-eligible subject matter. *Alice*, 573 U.S. at 224 ("Given the ubiquity of computers, wholly generic computer implementation is not generally the sort of additional feature that provides any practical assurance that the process is more than a drafting effort designed to monopolize the abstract idea itself."). As such, the Court is unable to identify any transformative inventive concept present in the patents-in-suit at *Alice* step two.

Because the Court has found that the claims of the patents-in-suit are directed to abstract ideas, and that there is no inventive concept, the claims are directed to patent-ineligible subject matter. Accordingly, Fox's motion to dismiss for failing to claim patent-eligible subject matter pursuant to 35 U.S.C. § 101 is granted.

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[7] Recentive argues that this presents a factual dispute that precludes granting Fox's Motion. D.I. 20 at 17. But Recentive has failed to identify any allegation in its FAC or any of the specifications of the patents-in-suit where it alleges that it invented machine learning, or that machine learning was anything other than well-known at the time of patenting.

### e. Leave to Amend

In the alternative, Recentive requests that, if the Court is inclined to grant Fox's Motion, the Court grant its request for leave to amend its First Amended Complaint. D.I. 20 at 20. "Leave to amend must generally be granted unless equitable considerations render it otherwise unjust." *Arthur v. Maersk, Inc.*, 434 F.3d 196, 204 (3d Cir. 2006); *see also Foman v. Davis*, 371 U.S. 178, 182 (1962). "The Third Circuit has adopted a liberal approach to the amendment of pleadings." *Id.* "In the absence of undue delay, bad faith, or dilatory motives on the part of the moving party, the amendment should be freely granted, unless it is futile or unfairly prejudicial to the non-moving party." *Id.* (citations omitted). An amendment is futile if it "would fail to state a claim upon which relief could be granted." *In re Burlington Coat Factory Sec. Litig.*, 114 F.3d 1410, 1434 (3d Cir. 1997). "The standard for assessing futility is the 'same standard for legal sufficiency as applies under [Federal] Rule [of Civil Procedure] Rule 12(b)(6).'" *Great W. Mining & Min. Co. v. Fox Rothschild, LLP*, 615 F.3d 159, 175 (3d Cir. 2010) (quoting *Shane v. Fauver*, 213 F.3d 113, 115 (3d Cir. 2000)).

When deciding a Rule 12(b)(6) motion, a court considers "documents that are attached to or submitted with the complaint." *Buck v. Hampton Twp. Sch. Dist.*, 452 F.3d 256, 260 (3d Cir. 2006) (citation omitted). Here, Recentive attached to its FAC the patents-in-suit. D.I. 13, Exs. A-D. Thus, the Court reviewed the patents-in-suit when deciding Fox's Motion. The claims of the patents say what they say. Amending the First Amended Complaint would not change the Court's § 101 analysis. Thus, Recentive's amendments would be futile.

Accordingly, the Court denies Recentive's request for leave to amend its FAC.

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## IV.   CONCLUSION

For the reasons stated above, the patents-in-suit are directed to patent-ineligible subject matter under 35 U.S.C. § 101.   Thus, the Court grants Fox's Motion to Dismiss (D.I. 18). Separately, the Court finds that any amendment of the First Amended Complaint would be futile and, thus, denies Recentive's request for leave to amend its First Amended Complaint. The Court will enter an Order consistent with this Memorandum Opinion.