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UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

Ex parte LOUIS M. ARQUIE, DAVID B. HAMILTON
and MARK R. LUBECK

Appeal 2018-000858
Application 14/479,304
Technology Center 2100

Before ROBERT E. NAPPI, JOHN A. JEFFERY, and
STEVEN M. AMUNDSON, *Administrative Patent Judges*.

AMUNDSON, *Administrative Patent Judge*.

DECISION ON APPEAL

Appellants¹ seek our review under 35 U.S.C. § 134(a) from a final rejection of claims 1–27, i.e., all pending claims. We have jurisdiction under 35 U.S.C. § 6(b).

We affirm.

¹ Appellants identify the real party in interest as Brocade Communications Systems, Inc. App. Br. 3.

STATEMENT OF THE CASE

The Invention

According to the Specification, the “invention relates generally to methods and systems for monitoring data storage networks.” Spec. ¶ 2.² The Specification explains that “[t]he method includes identifying a topology map for a storage network and gathering operating information, which is processed to determine a performance parameter, such as utilization,” and “[a] performance monitoring display is generated including a topology map and a graphical representation of the performance parameter.” *Id.* Abstract. The Specification also explains that utilization “is typically determined by comparing the throughput capacity of a device or data path with the actual or measured throughput at a particular time, e.g., 1.5 gigabits per second measured throughput in a 2 gigabit per second fiber is 75 percent utilization.” *Id.* ¶ 6.

Exemplary Claim

Independent claim 1 exemplifies the claims at issue and reads as follows:

1. A computer-based method comprising:
generating a performance monitoring display output signal;

² This decision uses the following abbreviations: “Spec.” for the Specification, filed September 6, 2014; “Final Act.” for the Final Office Action, mailed September 19, 2016; “App. Br.” for the Appeal Brief, filed May 5, 2017; “Ans.” for the Examiner’s Answer, mailed September 5, 2017; and “Reply Br.” for the Reply Brief, filed November 2, 2017.

displaying at least a portion of a topology map of a network and a graphical representation of a performance parameter of the network based on the performance monitoring display output signal,

wherein the graphical representation of the performance parameter is displayed by moving elements,

wherein the performance parameter represents utilization of a data throughput capacity of a data connection,

wherein the graphical representation includes a double line, each of the lines being solid when there is no utilization and replaced by parallel broken lines comprising dashes separated by a distance when there is a level of utilization, and

wherein the dashes are the moving elements and the dashes in one of the parallel broken lines moves [sic] in a first direction and the dashes in the other one of the parallel broken lines moves [sic] in a second direction opposite of the first direction to represent two channel data flow.

App. Br. 27 (Claims App.).

The Prior Art Supporting the Rejections on Appeal

As evidence of unpatentability, the Examiner relies on the following prior art:

Iwamura	US 5,883,621	Mar. 16, 1999
Glaser	US 5,889,520	Mar. 30, 1999
Olson	US 6,381,036 B1	Apr. 30, 2002
Germain et al. (“Germain”)	US 2003/0020764 A1	Jan. 30, 2003
Anderson et al. (“Anderson”)	US 2003/0191608 A1	Oct. 9, 2003

The Rejections on Appeal

Claims 1–27 stand rejected under 35 U.S.C. § 101 as directed to patent-ineligible subject matter. Final Act. 2–4.

Claims 1–3, 5–7, 10–12, 14, 15, 19, and 21–27 stand rejected under 35 U.S.C. § 103(a) as unpatentable over Germain and Iwamura. Final Act. 6–14.

Claims 4, 8, 9, and 17 stand rejected under 35 U.S.C. § 103(a) as unpatentable over Germain, Iwamura, and Glaser. Final Act. 14–15.

Claims 13, 16, and 20 stand rejected under 35 U.S.C. § 103(a) as unpatentable over Germain, Iwamura, and Anderson. Final Act. 15–17.

Claims 18 stands rejected under 35 U.S.C. § 103(a) as unpatentable over Germain, Iwamura, and Olson. Final Act. 17–18.

ANALYSIS

We have reviewed the rejections in light of Appellants’ arguments that the Examiner erred. For the reasons explained below, we concur with the Examiner’s conclusions concerning ineligibility under § 101 and unpatentability under § 103(a). We adopt the Examiner’s findings and reasoning in the Final Office Action (Final Act. 2–4, 6–21) and Answer (Ans. 3–16). We add the following to address and emphasize specific findings and arguments.

The § 101 Rejection of Claims 1–27

INTRODUCTION

The Patent Act defines patent-eligible subject matter broadly: “Whoever 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. In *Mayo Collaborative Services v. Prometheus Laboratories, Inc.*, 566 U.S. 66, 70 (2012), and *Alice*

Corp. v. CLS Bank International, 134 S. Ct. 2347, 2354 (2014), the Supreme Court explained that § 101 “contains an important implicit exception” for laws of nature, natural phenomena, and abstract ideas. *See Diamond v. Diehr*, 450 U.S. 175, 185 (1981). In *Mayo* and *Alice*, the Court set forth a two-step analytical framework for evaluating patent-eligible subject matter: First, “determine whether the claims at issue are directed to” a patent-ineligible concept, such as an abstract idea. *Alice*, 134 S. Ct. at 2355. If so, “consider the elements of each claim both individually and ‘as an ordered combination’ to determine whether the additional elements” add enough to transform the “nature of the claim” into “significantly more” than a patent-ineligible concept. *Id.* at 2355, 2357 (quoting *Mayo*, 566 U.S. at 79); *see Affinity Labs of Tex., LLC v. DIRECTV, LLC*, 838 F.3d 1253, 1257 (Fed. Cir. 2016).

Step one in the *Mayo/Alice* framework involves looking at the “focus” of the claims at issue and their “character as a whole.” *Elec. Power Grp., LLC v. Alstom S.A.*, 830 F.3d 1350, 1353 (Fed. Cir. 2016); *Enfish, LLC v. Microsoft Corp.*, 822 F.3d 1327, 1335 (Fed. Cir. 2016). Step two involves the search for an “inventive concept.” *Alice*, 134 S. Ct. at 2355; *Elec. Power*, 830 F.3d at 1353. An “inventive concept” requires more than “well-understood, routine, conventional activity already engaged in” by the relevant community. *Rapid Litig. Mgmt. Ltd. v. CellzDirect, Inc.*, 827 F.3d 1042, 1047 (Fed. Cir. 2016) (quoting *Mayo*, 566 U.S. at 79–80). But “an inventive concept can be found in the non-conventional and non-generic arrangement of known, conventional pieces.” *BASCOM Global Internet Servs., Inc. v. AT&T Mobility LLC*, 827 F.3d 1341, 1350 (Fed. Cir. 2016).

Under step two, “an inventive concept must be evident in the claims.”
RecogniCorp, LLC v. Nintendo Co., 855 F.3d 1322, 1327 (Fed. Cir. 2017).

A PRIMA FACIE CASE OF INELIGIBILITY

Appellants contend that a May 2016 PTO guidance memorandum regarding § 101 rejections states that an “Office Action should set forth why a claim that recites an abstract idea corresponds to ‘a concept that the courts have identified as an abstract idea.’” App. Br. 16 (emphasis omitted). Appellants then assert that the Examiner “fail[s] to provide sufficient factual analysis as to how the claimed subject matter corresponds to ‘a concept that the courts have identified as an abstract idea.’” *Id.* Appellants also assert that the Examiner’s analysis under the *Mayo/Alice* analytical framework “is incomplete,” e.g., because the Examiner “fails to cite any court decision or provide any other type of support on how the claimed subject matter corresponds to an abstract idea.” *Id.* at 16–17.

Appellants’ arguments do not persuade us of Examiner error. A May 2016 Federal Register notice explains that the PTO’s § 101 guidance materials “were developed as a matter of internal Office management,” “do not constitute substantive rulemaking,” “do not have the force and effect of law,” and instead “set out examination policy” regarding § 101 rejections. 81 Fed. Reg. 27,381, 27,382 (May 6, 2016). That notice also explains that “[r]ejections will continue to be based upon the substantive law, and it is these rejections that are appealable.” *Id.* Thus, an Examiner’s failure to follow the § 101 guidance materials is appealable only to the extent there has been a failure follow statutory or decisional law. If the guidance materials exceed statutory or decisional law with additional restrictions, an

Examiner's failure to comply with those additional restrictions may warrant a petition to the Director.

We conclude that the Final Office Action adequately explains the § 101 rejection. “[T]he prima facie case is merely a procedural device that enables an appropriate shift of the burden of production.” *Hyatt v. Dudas*, 492 F.3d 1365, 1369 (Fed. Cir. 2007) (citing *In re Oetiker*, 977 F.2d 1443, 1445 (Fed. Cir. 1992)). The “PTO carries its procedural burden of establishing a prima facie case when its rejection satisfies” § 132 “in ‘notify[ing] the applicant . . . [by] stating the reasons for [its] rejection, or objection or requirement, together with such information and references as may be useful in judging of the propriety of continuing the prosecution of [the] application.’” *In re Jung*, 637 F.3d 1356, 1362 (Fed. Cir. 2011) (alterations in original) (quoting 35 U.S.C. § 132). The PTO violates § 132 “when a rejection is so uninformative that it prevents the applicant from recognizing and seeking to counter the grounds for rejection.” *Chester v. Miller*, 906 F.2d 1574, 1578 (Fed. Cir. 1990). But if the PTO “adequately explain[s] the shortcomings it perceives . . . the burden shifts to the applicant to rebut the prima facie case with evidence and/or argument.” *Hyatt*, 492 F.3d at 1370.

Here, for *Mayo/Alice* step one, the Examiner determines that the claims are directed to an abstract idea, e.g., “generating a performance monitoring display output signal; [and] displaying at least a portion of a topology map of a network and a graphical representation of a performance parameter of the network based on the performance monitoring display output signal.” Final Act. 2–4, 19; *see* Ans. 4, 6. The Examiner explains that the claimed steps “are similar to the steps identified as abstract ideas by

the courts,” e.g., in *Internet Patents Corp. v. Active Network, Inc.*, 790 F.3d 1343 (Fed. Cir. 2015), and *SmartGene, Inc. v. Advanced Biological Laboratories, SA*, 555 F. App’x 950 (Fed. Cir. 2014). Final Act. 3, 19; *see* Ans. 4, 6, 8, 10–11. Thus, the Examiner (1) identifies the applicable judicial exception as an abstract idea rather than a natural phenomenon or law of nature, (2) defines the abstract idea, and (3) cites court decisions to support the analysis.

Further, for *Mayo/Alice* step two, the Examiner finds that the claimed computer components “perform purely generic computer functions.” Final Act. 3–4; *see* Ans. 11–12. The Examiner determines that “the additional elements when considered both individually and as a combination do not amount to significantly more than the abstract idea of displaying data.” Final Act. 3, 19; *see* Ans. 4–5, 8, 11. Accordingly, the Examiner reasons that the claims lack an “inventive concept” sufficient to transform them into significantly more than a patent-ineligible abstract idea. Final Act. 3–4, 19; *see* Ans. 10–12.

The Examiner’s statements satisfy § 132 because they apply the *Mayo/Alice* analytical framework and apprise Appellants of the reasons for the § 101 rejection under that framework. As discussed in more detail below, Appellants recognize the Examiner’s *Mayo/Alice* analysis and present arguments regarding the merits of that analysis. *See* App. Br. 9–15. Appellants do not respond by alleging a failure to understand the rejection. *Id.* at 9–17.

MAYO/ALICE STEP ONE

Appellants state that claim 1 “is representative of” the other claims for the § 101 analysis. Reply Br. 3; *see* App. Br. 11. Appellants assert that the

claims “are not directed to an abstract idea, but rather an ‘improvement in computer-related technology’ pertaining to network performance monitoring.” App. Br. 10; *see* Reply Br. 4. In particular, Appellants contend that “the claimed subject matter improves network performance monitoring” because it “provides a specific technique in informing a network administrator of possible underutilization and/or overutilization” by “utilizing different graphical features” to “monitor different utilization ranges.” App. Br. 10–11. Appellants also contend that “the claimed invention identifies a particular tool for presenting graphical data.” *Id.* at 12; *see id.* at 13; Reply Br. 4.

Appellants’ arguments do not persuade us of Examiner error. The claims involve the same general steps of collecting, organizing, and presenting information as the claims in *Electric Power Group, LLC v. Alstom S.A.*, 830 F.3d 1350 (Fed. Cir. 2016). *See* Ans. 5–6. In *Electric Power*, the patents in suit “describe[d] and claim[ed] systems and methods for performing real-time performance monitoring of an electric power grid by collecting data from multiple data sources, analyzing the data, and displaying the results.” *Elec. Power*, 830 F.3d at 1351. Representative claim 12 of U.S. Patent No. 8,401,710 recited:

A method of detecting events on an interconnected electric power grid in real time over a wide area and automatically analyzing the events on the interconnected electric power grid, the method comprising:

receiving a plurality of data streams, each of the data streams comprising sub-second, time stamped synchronized phasor measurements wherein the measurements in each stream are collected in real time at geographically distinct points over the wide area of the interconnected electric power grid, the wide area comprising at least two elements from among control

areas, transmission companies, utilities, regional reliability coordinators, and reliability jurisdictions;

receiving data from other power system data sources, the other power system data sources comprising at least one of transmission maps, power plant locations, EMS/SCADA systems;

receiving data from a plurality of non-grid data sources;

detecting and analyzing events in real-time from the plurality of data streams from the wide area based on at least one of limits, sensitivities and rates of change for one or more measurements from the data streams and dynamic stability metrics derived from analysis of the measurements from the data streams including at least one of frequency instability, voltages, power flows, phase angles, damping, and oscillation modes, derived from the phasor measurements and the other power system data sources in which the metrics are indicative of events, grid stress, and/or grid instability, over the wide area;

displaying the event analysis results and diagnoses of events and associated ones of the metrics from different categories of data and the derived metrics in visuals, tables, charts, or combinations thereof, the data comprising at least one of monitoring data, tracking data, historical data, prediction data, and summary data;

displaying concurrent visualization of measurements from the data streams and the dynamic stability metrics directed to the wide area of the interconnected electric power grid;

accumulating and updating the measurements from the data streams and the dynamic stability metrics, grid data, and non-grid data in real time as to wide area and local area portions of the interconnected electric power grid; and

deriving a composite indicator of reliability that is an indicator of power grid vulnerability and is derived from a combination of one or more real time measurements or computations of measurements from the data streams and the dynamic stability metrics covering the wide area as well as non-power grid data received from the non-grid data source.

Id. at 1351–52. The Federal Circuit considered the “focus” of the claims and their “character as a whole” and decided that they were directed to an abstract idea. *Id.* at 1353–54.

There are no meaningful differences between the claims in *Electric Power* and the claims here. Ans. 5–6. The claims in *Electric Power* concerned performance monitoring of an electric power grid with an allegedly improved information arrangement for monitoring. *Elec. Power*, 830 F.3d at 1351–52; U.S. Patent No. 8,401,710, Figs. 17–27. The claims here concern performance monitoring of a computer network with an allegedly improved information arrangement for monitoring. App. Br. 10–11, 27–33 (Claims App.); Spec. ¶¶ 2, 10–14, 24, 40–46, Abstract, Figs. 4–7.

Appellants seek to distinguish the claims in *Electric Power* by asserting that the claims here specify more “details on how to display” information. Reply Br. 7–8. In *Electric Power*, however, claim 17 depended from claim 12 and specified more “details on how to display” information than claim 12. U.S. Patent No. 8,401,710, col. 32 ll. 31–34. The Federal Circuit decided that claim 17 was directed to an abstract idea. *Elec. Power*, 830 F.3d at 1351 n.1, 1353–54. “[A] claim is not patent eligible merely because it applies an abstract idea in a narrow way.” *BSG Tech LLC v. BuySeasons, Inc.*, 899 F.3d 1281, 1287 (Fed. Cir. 2018).

Further, the claims here resemble the claims in *Move, Inc. v. Real Estate Alliance Ltd.*, 721 F. App’x 950 (Fed. Cir. 2018). There, the claims covered a “method of searching for real estate properties geographically on a computer” including steps for displaying a map, zooming in on a selected area of the map, and displaying geographic locations for available real estate

properties in the selected area. *Id.* at 952–53. Because the claims in *Move* “involve[d] the same general steps of collecting, organizing, and presenting information” as the claims in *Electric Power*, the Federal Circuit decided that the claims were directed to an abstract idea. *Id.* at 954–56. There are no meaningful differences between the claims in *Move* and the claims here.

Based on *McRO, Inc. v. Bandai Namco Games America Inc.*, 837 F.3d 1299 (Fed. Cir. 2016), Appellants contend that “the claimed subject matter is able to perform a function not previously performable by a computer,” i.e., displaying “a graphical representation includ[ing] both connectivity information and network performance information.” App. Br. 10–11; *see* Reply Br. 8. Appellants misplace their reliance on *McRO*. The claims in *McRO*—unlike the claims here—recited a “specific . . . improvement in computer animation” using “unconventional rules” that related “sub-sequences of phonemes, timings, and morph weight sets” to automatically animate lip synchronization and facial expressions for three-dimensional characters that only human animators could previously produce. *McRO*, 837 F.3d at 1302–03, 1307–08, 1313–15.

The claims here do not recite “unconventional rules” for achieving a result that only humans could previously produce. Steps for replacing solid lines with dashed lines and moving dashed lines in opposite directions do not correspond to the “unconventional rules” discussed in *McRO*. *See* App. Br. 27–33 (Claims App.). Further, Iwamura explains that “programming techniques well known in the art” can generate signal-flow representations for a display, such as animated arrows moving in opposite directions. Iwamura 8:57–65, Fig. 12. Thus, those “programming techniques well

known in the art” can produce software for replacing solid lines with dashed lines and moving dashed lines in opposite directions.

In *McRO*, “the incorporation of the claimed rules” improved an existing technological process. *McRO*, 837 F.3d at 1314. In contrast to the claims in *McRO*, the claims here do not improve an existing technological process. *See Alice*, 134 S. Ct. at 2358 (explaining that “the claims in *Diehr* were patent eligible because they improved an existing technological process”). Instead, the claims cover an allegedly improved information arrangement for monitoring a computer network. App. Br. 10–11, 27–33 (Claims App.); Spec. ¶¶ 2, 10–14, 24, 40–46, Abstract, Figs. 4–7.

In addition, Appellants’ contention that displaying a graphical representation including both connectivity information and network performance information was not “previously performable by a computer” disregards Germain’s disclosure. Germain describes and depicts graphical representations including both connectivity information and network performance information. Germain ¶¶ 34–41, 46, 56–59, Figs. 4–5, 12–14.

Appellants assert that the claims “specify an unconventional display format used to display network performance information.” App. Br. 13. Appellants also assert that “[d]isplaying network performance information using unconventional graphical features allows the presentation of large amounts of network information in a timely and user-friendly manner.” Reply Br. 4. But “a claim for a *new* abstract idea is still an abstract idea.” *Synopsys, Inc. v. Mentor Graphics Corp.*, 839 F.3d 1138, 1151 (Fed. Cir. 2016). Similarly, a claim for a beneficial abstract idea is still an abstract idea. *See Ariosa Diagnostics, Inc. v. Sequenom, Inc.*, 788 F.3d 1371,

1379–80 (Fed. Cir. 2015). Thus, Appellants’ assertions do not persuade us of Examiner error.

Appellants contend that the Examiner “incorrectly simplifies” the claims “to a gist or a core principal [sic] of displaying data” and the Examiner’s “oversimplification . . . fails to comply with” a November 2016 PTO guidance memorandum regarding § 101 rejections. Reply Br. 3–4. We disagree.

As discussed above, the Examiner determines that the claims are directed to “generating a performance monitoring display output signal; [and] displaying at least a portion of a topology map of a network and a graphical representation of a performance parameter of the network based on the performance monitoring display output signal.” Final Act. 2–4, 19; Ans. 4, 6; *see* Reply Br. 3. Thus, the Examiner accurately assesses the “focus” of the claims and their “character as a whole.” *See Elec. Power*, 830 F.3d at 1353.

The claims are not directed to an improvement in computer functionality. *See* Ans. 5. They specify no technical details concerning a “monitor” or display, a “processor,” or a “memory.” App. Br. 27–33 (Claims App.). They do not pass muster under *Mayo/Alice* step one.

MAYO/ALICE STEP TWO

Appellants assert that “the claims recite significantly more than an abstract idea” because they “provide additional steps that create a specifically programmed electronic device” and “go beyond the mere concept of performing generic computer functions.” App. Br. 14. Appellants’ assertion does not persuade us of Examiner error. In *Alice*, “[a]ll of the claims [we]re implemented using a computer,” and the resulting

“specifically programmed electronic device” failed to suffice for patent eligibility. *Alice*, 134 S. Ct. at 2353, 2358–60.

As additional elements, the claims recite a “monitor” or display, a “processor,” and a “memory.” App. Br. 27–33 (Claims App.). The Specification describes those computer components generically. *See, e.g.*, Spec. ¶¶ 25–28. For example, the Specification explains that an administrator node for performance monitoring “may be any computer device useful for running software applications including personal computing devices such as desktops, laptops, notebooks, and even handheld devices that communicate with a wired and/or wireless communication network.” *Id.* ¶ 25. Also, the Specification states:

To practice the invention, the computer and network devices may be any devices useful for providing the described functions, including well-known data processing and communication devices and systems, such as application, database, and web servers, mainframes, personal computers and computing devices (and, in some cases, even mobile computing and electronic devices) with processing, memory, and input/output components, and server devices configured to maintain and then transmit digital data over a communications network.

Id. The Specification does not describe an unconventional arrangement of any conventional computer components. *See, e.g.*, Spec. ¶¶ 25–28.

“[T]he mere recitation of a generic computer cannot transform a patent-ineligible abstract idea into a patent-eligible invention.” *Alice*, 134 S. Ct. at 2358. Here, the generic computer components recited in the claims “perform purely generic computer functions.” Final Act. 3–4; Ans. 11–12. Thus, they do not transform the patent-ineligible abstract idea into a patent-eligible invention.

In addition, court decisions have recognized that generic computer components operating to collect, manipulate, and display data are well understood, routine, and conventional to a skilled artisan. *See, e.g., Alice*, 134 S. Ct. at 2360; *SAP Am., Inc. v. InvestPic, LLC*, 898 F.3d 1161, 1164–65 & n.1, 1170 (Fed. Cir. 2018); *Intellectual Ventures I LLC v. Symantec Corp.*, 838 F.3d 1307, 1318–20 (Fed. Cir. 2016); *Versata Dev. Grp., Inc. v. SAP Am., Inc.*, 793 F.3d 1306, 1334 (Fed. Cir. 2015); *Ultramercial, Inc. v. Hulu, LLC*, 772 F.3d 709, 715–16 (Fed. Cir. 2014); *buySAFE, Inc. v. Google, Inc.*, 765 F.3d 1350, 1355 (Fed. Cir. 2014); *Cyberfone Sys., LLC v. CNN Interactive Grp., Inc.*, 558 F. App'x 988, 993 (Fed. Cir. 2014).

Appellants assert that “the additional steps” in the claims “taken as a whole, amount to significantly more than the mere recitation of generic computer functions” because they “provide **unconventional steps** in monitoring network performance.” App. Br. 15. Appellants also assert that the claimed solution “**differs from the solution** disclosed in” Germain. *Id.*

Appellants’ assertions do not persuade us of Examiner error. “The search for a § 101 inventive concept is . . . distinct from demonstrating § 102 novelty.” *Synopsys*, 839 F.3d at 1151; *see Diehr*, 450 U.S. at 188–89; *Two-Way Media Ltd. v. Comcast Cable Commc’ns, LLC*, 874 F.3d 1329, 1340 (Fed. Cir. 2017); *Intellectual Ventures*, 838 F.3d at 1315 (same for obviousness).

Appellants contend that the claims are similar to the patent-eligible claim in the PTO’s abstract idea Example 21 concerning the transmission of stock quote data. *See* App. Br. 14–15; PTO July 2015 Update Appendix 1: Examples (“July 2015 Update”). We disagree.

Example 21’s patent-eligible claim “addresses the Internet-centric challenge of alerting a subscriber with time sensitive information when the subscriber’s computer is offline” by “transmitting the alert over a wireless communication channel to activate the stock viewer application, which causes the alert to display and enables the connection of the remote subscriber computer to the data source over the Internet when the remote subscriber computer comes online.” July 2015 Update 4. In contrast to Example 21’s patent-eligible claim, the claims here do not require activating an application that causes an alert to display or enabling a remote connection. Instead, they cover an allegedly improved information arrangement for monitoring a computer network. App. Br. 10–11, 27–33 (Claims App.); Spec. ¶¶ 2, 10–14, 24, 40–46, Abstract, Figs. 4–7.

Moreover, Appellants’ contention that the claims are similar to Example 21’s patent-eligible claim undermines the argument that the claims are not directed to an abstract idea. Example 21’s patent-eligible claim “is directed to an abstract idea.” July 2015 Update 4. That claim satisfies *Mayo/Alice* step two because the “limitations, when taken as an ordered combination, provide unconventional steps that confine the abstract idea to a particular useful application.” *Id.* at 4–5.

SUMMARY

For the reasons discussed above, Appellants’ arguments have not persuaded us of any error in the Examiner’s findings or conclusions under *Mayo/Alice* step one or step two. Hence, we sustain the § 101 rejection of claims 1–27.

The § 103(a) Rejection of Claims 1–3, 5–7, 10–12, 14, 15, 19, and 21–27

THE INDEPENDENT CLAIMS: DASHED LINES
REPLACING SOLID LINES FOR REPRESENTING UTILIZATION

Appellants contend that “the combination of Germain and Iwamura fails to disclose” the following limitation in claim 1 and similar limitations in independent claims 7, 15, 21, 24, and 27: “the graphical representation includes a double line, each of the lines being solid when there is no utilization and replaced by parallel broken lines comprising dashes separated by a distance when there is a level of utilization.” App. Br. 18–20, 25. Specifically, Appellants assert that the solid lines in Germain Figure 12 “do not represent that there is no utilization on the network” but instead “represent the **links between network nodes (i.e. connectivity information)** and do not indicate network utilization information or even more generally network performance information.” *Id.* at 19–20. According to Appellants, Germain Figure 12 “shows the network topology **before** the software disclosed in Germain has actually been used to analyze the network’s data performance,” while Germain Figure 13 “shows what the network would look like after the network analysis software has been run.” *Id.* at 19.

Appellants’ arguments do not persuade us of Examiner error because they disregard Germain Figure 4. Figure 4 shows a “graphical representation of the topology of a network.” Germain ¶ 36, Fig. 4; *see id.* ¶ 12; Final Act. 7; Ans. 12. Figure 4’s graphical representation includes symbols representing devices and parallel solid lines representing links or connections between devices. Germain ¶ 36, Fig. 4; *see* Final Act. 7, 20; Ans. 12–13. The sizes, thicknesses, and/or colors of the symbols and lines

reflect performance parameters, such as capacity, throughput, or utilization. Germain ¶¶ 35–41, 46, Figs. 4–5; *see* Final Act. 7, 20; Ans. 12–13. For instance, a size or thickness increase reflects a performance parameter increase. Germain ¶¶ 36–41, 46, Figs. 4–5. Thus, Germain teaches or suggests relatively narrow or thin parallel solid lines when there is no utilization and increasingly wider or thicker lines as utilization increases. *See* Germain ¶¶ 36–41, 46, Figs. 4–5; Final Act. 7, 20; Ans. 12–13. The representations for utilization may indicate whether a link is “near saturation” or instead “not overloaded.” Germain ¶ 59, Fig. 14. In addition, Germain discloses dashed lines and arrows as representations for performance information. *Id.* ¶ 46 (table).

THE INDEPENDENT CLAIMS: DASHED LINES
MOVING IN OPPOSITE DIRECTIONS

Appellants contend that “the combination of Germain and Iwamura fails to disclose” the following limitation in claim 1 and similar limitations in independent claims 7, 15, 21, 24, and 27: “the dashes are the moving elements and the dashes in one of the parallel broken lines moves [sic] in a first direction and the dashes in the other one of the parallel broken lines moves [sic] in a second direction opposite of the first direction to represent two channel data flow.” App. Br. 18, 20–22, 25. Specifically, Appellants assert that “the independent claims differ from Iwamura” because “[t]he solid lines [in Iwamura] are **never replaced** by **broken lines** and/or dashes in Iwamura.” *Id.* at 21. Appellants also assert that “the independent claims only have one line for each direction, that one line having moving segments, while Iwamura shows three lines for data flow in two directions on the same portion, a solid line and the two lines of animated arrows.” *Id.* at 22.

Appellants' arguments do not persuade us of Examiner error. The independent claims use the transitional term "comprising" and, therefore, "do[] not exclude unrecited elements." *See Regeneron Pharm., Inc. v. Merus N.V.*, 864 F.3d 1343, 1352 (Fed. Cir. 2017) (citing *Manual of Patent Examining Procedure* § 2111.03).

Moreover, Appellants' arguments attack the references individually, while the Examiner relies on the combined disclosures in Germain and Iwamura for the disputed limitation. *See* Final Act. 7–8, 20–21; Ans. 14–15. Where a rejection rests on the combined disclosures in the references, Appellants cannot establish nonobviousness by attacking the references individually. *See In re Merck & Co.*, 800 F.2d 1091, 1097 (Fed. Cir. 1986). Here, the combined disclosures in Germain and Iwamura teach or suggest the disputed limitation. *See* Final Act. 7–8, 20–21; Ans. 14–15.

Appellants assert that "Iwamura fails to disclose the '...dashes are the moving elements...' subject matter." App. Br. 22. But Iwamura discloses that "[s]ignal flows are indicated with arrows" that "can be animated." Iwamura 8:59–62, Fig. 12; *see* Final Act. 7–8, 20; Ans. 13–14. Thus, Iwamura teaches or suggests that "dashes are the moving elements." *See* Final Act. 7–8, 20; Ans. 13–14.

Appellants contend that "Iwamura actually teaches away from animating the connection lines by showing the additional lines of animated arrows." App. Br. 22. "A reference does not teach away, however, if it merely expresses a general preference for an alternative invention but does not 'criticize, discredit, or otherwise discourage' investigation into the invention claimed." *DePuy Spine, Inc. v. Medtronic Sofamor Danek, Inc.*, 567 F.3d 1314, 1327 (Fed. Cir. 2009) (quoting *In re Fulton*, 391 F.3d 1195,

1201 (Fed. Cir. 2004)). Here, Iwamura does not “criticize, discredit, or otherwise discourage” animating Germain’s connection lines by showing moving arrows. *See* Iwamura 8:57–9:12, Figs. 12–13; *see also* Germain ¶¶ 5, 12, 17–19, 35–41, 46, 57–59, Figs. 4–5, 12–14.

THE INDEPENDENT CLAIMS: ALLEGED IMPROPER RELIANCE
ON THE KNOWLEDGE OF AN ORDINARILY SKILLED ARTISAN

Appellants argue that the Examiner erred in rejecting the independent claims for obviousness because the Examiner improperly relied on the knowledge of an ordinarily skilled artisan to “make up for” claim limitations “not expressly taught in Germain and Iwamura.” App. Br. 23–24. We disagree. Germain and Iwamura collectively disclose each feature recited in the independent claims, and their combined disclosures teach or suggest the disputed limitations for the reasons discussed above. *See* Final Act. 6–8, 20–21; Ans. 12–16; Germain ¶¶ 5, 12, 17–19, 35–41, 46, 57–59, Figs. 4–5, 12–14; Iwamura 8:57–9:12, Figs. 12–13.

SUMMARY FOR THE INDEPENDENT CLAIMS

For the reasons discussed above, Appellants’ arguments have not persuaded us that the Examiner erred in rejecting the independent claims under § 103(a). Hence, we sustain the § 103(a) rejection of the independent claims.

DEPENDENT CLAIMS 2, 3, 5, 6, 10–12, 14, 19, 22, 23, 25, AND 26

Appellants do not argue patentability separately for dependent claims 2, 3, 5, 6, 10–12, 14, 19, 22, 23, 25, and 26. App. Br. 25. Thus, we sustain the § 103(a) rejection of these dependent claims for the same reasons as the independent claims. *See* 37 C.F.R. § 41.37(c)(1)(iv).

The § 103(a) Rejections of Claims 4, 8, 9, 13, 16–18, and 20

For dependent claims 4, 8, 9, 13, 16–18, and 20, Appellants assert that the additionally cited references fail to “teach, describe or fairly suggest the subject matter that the combination of Germain and Iwamura is alleged to teach,” and thus the additionally cited references fail to “support the obviousness rejection.” App. Br. 25–26. Those assertions do not constitute separate patentability arguments. *See In re Lovin*, 652 F.3d 1349, 1357 (Fed. Cir. 2011) (explaining that the applicable rules “require more substantive arguments in an appeal brief than a mere recitation of the claim elements and a naked assertion that the corresponding elements were not found in the prior art”). Because Appellants do not argue the claims separately, we sustain the § 103(a) rejections of dependent claims 4, 8, 9, 13, 16–18, and 20 for the same reasons as the independent claims. *See* 37 C.F.R. § 41.37(c)(1)(iv).

DECISION

We affirm the Examiner’s decision to reject claims 1–27.

No time period for taking any subsequent action in connection with this appeal may be extended under 37 C.F.R. § 1.136(a)(1)(iv). *See* 37 C.F.R. § 41.50(f).

AFFIRMED