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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
14/418,527	01/30/2015	Xiao Yi Wang	800.1934.U1(US)	9393
10948	7590	12/13/2018	EXAMINER	
Harrington & Smith, Attorneys At Law, LLC 4 Research Drive, Suite 202 Shelton, CT 06484			GEORGE, AYANAH S	
			ART UNIT	PAPER NUMBER
			2467	
			NOTIFICATION DATE	DELIVERY MODE
			12/13/2018	ELECTRONIC

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BEFORE THE PATENT TRIAL AND APPEAL BOARD

Ex parte XIAO YI WANG and CHUNLI WU

Appeal 2018-003405
Application 14/418,527
Technology Center 2400

Before JENNIFER S. BISK, JUSTIN BUSCH, and JASON M. REPKO,
Administrative Patent Judges.

BUSCH, *Administrative Patent Judge.*

DECISION ON APPEAL

Pursuant to 35 U.S.C. § 134(a), Appellants appeal from the Examiner’s decision to reject claims 1–6, 8–18, and 20–26, which constitute all the claims pending in this application. We have jurisdiction over the pending claims under 35 U.S.C. § 6(b). Claims 7 and 19 were canceled previously. We affirm.

CLAIMED SUBJECT MATTER

Appellants’ claimed invention relates to measurement reports in Coordinated Multi-Point Transmission (CoMP) schemes and systems. Spec. 1:1–5. More specifically, the claims relate to comparing parameter values of a received “channel state information reference signal,”

determining that a measurement report is triggered and causing information from the comparison to be reported. Spec. 2:22–27. Claim 1 is reproduced below:

1. A method comprising:
 - comparing at least one received signal received parameter value for at least one channel state information reference signal associated with a first frequency with at least one received signal received parameter value for at least one channel state information reference signal associated with a second frequency;
 - determining that the comparing triggers a measurement report; and
 - in response to the determining, causing information from said comparing to be reported.

REJECTIONS¹

Claims 1–6, 8–18, and 20–26 stand rejected under 35 U.S.C. § 101 as being directed to judicially excepted subject matter. Final Act. 2–3.

Claims 1–5, 13–17, 25, and 26 stand rejected under 35 U.S.C. § 103 as obvious in view of *Nogami* (EP 2 445 253 A1; Apr. 25, 2012) and *Gauvreau* (US 2010/0232382 A1; Sept. 16, 2010). Final Act. 3–8.

Claims 6, 8–12, 18, and 20–24 stand rejected under 35 U.S.C. § 103 as obvious in view of *Nogami*, *Gauvreau*, and *Choi* (US 2011/0312328 A1; Dec. 22, 2011). Final Act. 8–11.

ANALYSIS

We have reviewed the Examiner’s rejections in light of Appellants’ arguments that the Examiner erred. In reaching this decision, we have considered all evidence presented and all arguments Appellants made.

¹ The Examiner erroneously includes claims 7 and 19, which were previously canceled, in the headings of two rejections. *See* Final Act. 2–3. As these claims are no longer pending, this error is harmless.

Arguments Appellants could have made, but chose not to make in the Briefs, are deemed waived. *See* 37 C.F.R. § 41.37(c)(1)(iv).

THE 35 U.S.C. § 101 REJECTION

Appellants argue the claims as a group. Appeal Br. 9 (“Independent claim 14 recites . . . similar elements as are recited by method claim 1, and the specific hardware that claim 14 recites is not argued herein as a patentable distinction . . . so claim 14 stands or falls with claim 1. Dependent claims are not argued separately herein.”); *see* Appeal Br. 18–20; Reply Br. 5–6. We select independent claim 1 as representative of this group, and remaining claims 2–6, 8–18, and 20–26 stand or fall with claim 1. 37 C.F.R. § 41.37(c)(1)(iv).

Step One of Alice Framework

In step one of the *Alice* analysis, we “determine whether the claims at issue are directed to” a patent-ineligible concept, such as an abstract idea. *Alice Corp. Pty. Ltd. v. CLS Bank Int’l*, 134 S. Ct. 2347, 2354–55 (2014). The Examiner determines the claims are directed to the concept of “collecting, comparing and reporting known information.” Final Act. 2; Ans. 4–5 (comparing Appellants’ claims to those in *Electric Power Group, LLC v. Alstom S.A.*, 830 F.3d 1350 (Fed. Cir. 2016)). The Examiner explains that Appellants’ claims do not recite any step or action claiming the alleged improvement of using a particular reference signal (i.e., a channel state information reference signal (CSI-RS)) to both choose intra-frequency CoMP transmission points (TPs) and decide on which carrier component (CC) the TPs will transmit their CoMP communications. Ans. 4. Rather, the Examiner finds claim 1’s recited comparison of received signal parameters and determination that the comparison triggers are similar to the

collecting and analyzing steps in *Electric Power*, and claim 1’s recited step of causing a report to be generated is similar to *Electric Power*’s displaying step. Ans. 4–5.

Appellants do not dispute the Examiner’s conclusion that claim 1 is directed to an abstract idea. *See* Appeal Br. 18 (“Assuming *arguendo* that the claims begin from an abstract idea, they recite significant detail” and the additional detail “takes the independent claims into the ‘significantly more’ realm of the analysis for patentable subject matter.”), 19 (“As such, even assuming *arguendo* claim 1 begins from an abstract idea its terms still recite significantly more, and thus satisfies 35 USC 101.”); Reply Br. 6 (“It is submitted that a[t] least independent claims 1 and 14 include elements that amount to significantly more than the judicial exception”).

Appellants, however, conclude their argument by stating “[w]e’ve argued the claim is not abstract for the very reason that . . . this level of specificity for the described purpose is the very antithesis of abstraction.” Appeal Br. 20. Although, on its face, this statement appears to assert that claim 1 is not directed to an abstract idea, there are no particular arguments addressing whether claim 1 is directed to an abstract idea. Thus, we interpret this statement as merely a summary of Appellants’ arguments regarding the question of whether claim 1 recites “significantly more” as analyzed under step two of the *Alice* framework. We address Appellants’ step two arguments in the following sub-section.

We agree with the Examiner’s conclusions because claim 1 focuses on comparing two parameter values and, in response to the comparison, causing information regarding the comparison to be reported. Even construing claim 1 to include an affirmative step of reporting information, claim 1 simply

involves analyzing and reporting information. Claim 1 merely recites a comparison of two data values associated with two different reference signals, determining that the comparison triggers a measurement report, thereby causing information from the comparison to be reported. Notably, Appellants' claim 1 does not recite how to obtain the data or performing any particular steps by a computer, let alone claim a particular improvement in the way computers operate.

The Federal Circuit has concluded similar concepts were directed to abstract ideas. Specifically, in *Electric Power*, the Federal Circuit concluded claims reciting a method of collecting data from various sources, “detecting and analyzing events” by identifying information in the received data, reporting the event analysis results and visualizations of measurements, aggregating the event analysis information, and providing a composite indicator were directed to an abstract idea because the claims were directed to “collecting information, analyzing it, and displaying certain results of the collection and analysis.” *Elec. Power*, 830 F.3d at 1351–53.

Similarly, the Federal Circuit concluded claims directed to collecting and analyzing information and presenting the results were ineligible as claiming no more than an abstract idea. *Content Extraction & Transmission LLC v. Wells Fargo Bank, N.A.*, 776 F.3d 1343, 1347 (Fed. Cir. 2014); *see also Smart Sys. Innovations, LLC v. Chicago Transit Auth.*, 873 F.3d 1364, 1372 (Fed. Cir. 2017) (concluding “claims directed to the collection, storage, and recognition of data are directed to an abstract idea”); *SAP Am., Inc. v. InvestPIC, LLC*, 898 F.3d 1161, 1167 (Fed. Cir. 2018) (“merely presenting the results of abstract processes of collecting and analyzing information . . .

is abstract as an ancillary part of such collection and analysis”) (quotations omitted).

Moreover, limiting the particular data analyzed does not change the character of the claim. *See Elec. Power*, 830 F.3d at 1353 (stating that “collecting information, including when limited to particular content (which does not change its character as information)” is treated as “within the realm of abstract ideas”). Thus, the identity of the parameter values compared and the fact that the two values are associated with two different signals, do not change the character of the claims.

We agree with the Examiner that the claims are directed to an abstract idea and, thus, turn to step two of the *Alice* analysis.

Step Two of Alice Framework

In step two of our *Alice* analysis, we determine whether the *additional* limitations, when considered both “individually and ‘as an ordered combination’” contain an “inventive concept” sufficient to transform the claimed “abstract idea” into a patent-eligible application. *Alice*, 134 S. Ct. at 2355–58.

The Examiner concludes the elements of the claims combined merely provide the functions of the individual elements and do not add significantly more that would render the claims patent eligible. Final Act. 3; Ans. 4–5. As discussed above, the Examiner explains that Appellants’ claims do not claim the alleged improvement of using a CSI-RS to both choose intra-frequency CoMP TPs and decide on which CC the TPs will transmit their CoMP communications. Ans. 4. Thus, the Examiner concludes the claims do not amount to significantly more than the abstract idea. Final Act. 3; Ans. 4–5.

Appellants argue the claims add significantly more to the abstract idea because the claims “recite significant detail in that the reference signals specifically recited therein are CSI-RSs” and Appellants’ application describes particular advantages of using CSI-RSs for a dual purpose (i.e., selecting both CCs and TPs). Appeal Br. 18 (citing Spec. 11:22–34). Appellants also argue “claim 1 specifically recites channel state information reference signals (CSI-RSs),” the claims compare parameter values “of different CSI-RSs of two different CCs/frequencies,” and substituting a different type of reference signal for the recited CSI-RSs would prevent utilizing the signals for both CC and TP selection. Appeal Br. 19.

An inventive concept “cannot be furnished by the unpatentable law of nature (or natural phenomenon or abstract idea) itself.” *Genetic Techs. Ltd. v. Merial L.L.C.*, 818 F.3d 1369, 1376 (Fed. Cir. 2016); *see also Alice*, 134 S. Ct. at 2355 (explaining that, after determining a claim is directed to a judicial exception, “we then ask, ‘[w]hat else is there in the claims before us?’” (emphasis added, brackets in original) (quoting *Mayo*, 566 U.S. at 78)). Instead, an “inventive concept” is furnished by an element or combination of elements that is recited in the claim *in addition to* the judicial exception and sufficient to ensure the claim as a whole amounts to significantly more than the judicial exception itself. *Alice*, 134 S. Ct. at 2355 (citing *Mayo*, 566 U.S. at 72–73); *see BSG Tech LLC v. BuySeasons, Inc.*, 899 F.3d 1281, 1290 (Fed. Cir. 2018) (explaining that the Supreme Court in *Alice* “only assessed whether the claim limitations *other than the invention’s use of the ineligible concept* to which it was directed were well-understood, routine and conventional,” (emphasis added)).

On the other hand, “[i]f a claim’s only ‘inventive concept’ is the application of an abstract idea using conventional and well-understood techniques, the claim has not been transformed into a patent-eligible application of an abstract idea.” *BSG Tech*, 899 F.3d at 1290–91 (citing *Berkheimer v. HP Inc.*, 881 F.3d 1360, 1370 (Fed. Cir. 2018)). “[I]t is irrelevant whether [the claimed abstract idea] may have been non-routine or unconventional as a factual matter . . . narrowing or reformulating an abstract idea does not add ‘significantly more’ to it.” *BSG Tech*, 899 F.3d at 1291.

First, as discussed above, we note claim 1 merely recites comparing information and causing a report to be generated. Contrary to Appellants’ arguments, claim 1 does not *recite* using the recited CSI-RSs to perform the “double duty” of selecting both CCs and TPs. In fact, claim 1 recites no elements other than the comparing, determining and (causing) reporting steps. The fact that the two compared values (i.e., “received signal received parameter value”) are each values for two reference signals *associated with* different frequencies does not change the fact that the claim merely recites comparing two values.

Because claim 1 recites no *additional* elements, claim 1 fails to add significantly more to the abstract idea. Even to the extent that computer processing is implied, such use of computers is merely as tools to compare and report information, which simply implements the abstract idea. *See BSG Tech*, 899 F.3d at 1286; *Gottschalk v. Benson*, 409 U.S. 63, 67 (1972) (explaining that the claimed steps could easily “be carried out in existing computers long in use, no new machinery being necessary”).

Summary of Analysis of § 101 Rejection

For the above reasons, we determine the Examiner did not err in rejecting claims 1–6, 8–18, and 20–26 under 35 U.S.C. § 101 as being directed to judicially excepted subject matter.

THE 35 U.S.C. § 103 REJECTION

Appellants argue the claims as a group. Appeal Br. 9 (“Independent claim 14 recites . . . similar elements as are recited by method claim 1, and the specific hardware that claim 14 recites is not argued herein as a patentable distinction . . . so claim 14 stands or falls with claim 1. Dependent claims are not argued separately herein.”); *See* Appeal Br. 10–17; Reply Br. 2–5. We select independent claim 1 as representative of this group, and remaining claims 2–6, 8–18, and 20–26 stand or fall with claim 1. 37 C.F.R. § 41.37(c)(1)(iv).

Claims 1–5, 13–17, 25, and 26

The Examiner finds the combination of Nogami and Gauvreau teaches or suggests every limitation recited in claims 1–5, 13–17, 25, and 26. Final Act. 3–8. Of particular note, the Examiner finds Nogami discloses channel state measurement reference signals from which a mobile terminal measures and generates channel state information. Ans. 3–4. Thus, the Examiner finds Nogami’s “channel state measurement reference signals” teach or suggest the recited channel state information reference signals. Ans. 3–4. The Examiner finds Nogami’s sub bands teach or suggest the recited first and second frequencies, and Nogami’s disclosure of measuring feedback information for each sub band teaches or suggests the recited two received signal parameter values for reference signals on two different frequencies

and causing a report to be generated. Final Act. 4 (citing Nogami ¶ 99); Ans. 3–4 (additionally citing Nogami ¶¶ 2, 103).

The Examiner finds Nogami does not teach comparing signals and determining that the comparing triggers a measurement report, but finds Gauvreau teaches triggering a measurement report “based on a comparison of the RSRQ [(reference signal received quality)] being below a certain threshold.” Final Act. 4 (citing Gauvreau ¶ 96); Ans. 4 (“The office action admits that Nogami does not teach comparing or determining that the comparing triggers a measurement report and is the reason for the secondary reference Gauvreau.”). The Examiner concludes it would have been obvious to combine Nogami’s and Gauvreau’s teachings “because Gauvreau teaches the candidate set (of carriers) may be different than the current set e.g., it may be determined that the quality of a primary carrier is below a certain threshold, while another non-primary carrier may have a received quality that is higher than the primary.” Final Act. 5 (citing Gauvreau ¶¶ 96–97).

Appellants argue Nogami’s mobile terminal measures the RSRP of cells that are on the same frequency because Nogami’s system is used to suppress interference on cell edges when neighboring cells use the same frequency. Appeal Br. 11–12 (citing Nogami ¶¶ 2, 94, 99); Reply Br. 4 (additionally citing Nogami ¶ 3). Appellants also argue Nogami’s measurement report is different from its feedback. Appeal Br. 10–11 (citing Nogami ¶¶ 3, 99). Specifically, Appellants argue a mobile terminal measures neighboring cells’ RSRP of reference signals and sends a report of the measurements to a serving base station. Appeal Br. 12 (citing Nogami ¶ 99). Appellants argue Nogami explicitly distinguishes these measurement reports from its feedback information, which may include more detailed

information on a channel (e.g., CQI (channel quality indicator), PMI (precoding matrix index), and RI (rank indicator)) determined from a signal to interference plus noise power ratio (SINR). Appeal Br. 12 (citing Nogami ¶ 99); *see* Nogami ¶¶ 8, 100.

Appellants acknowledge Gauvreau teaches measuring different RSRP and RSRQ values on different carriers (i.e., frequencies) and triggering a measurement report if a primary carrier's value is below a threshold and a different carrier's value is a threshold amount better than the primary carrier's value. Appeal Br. 15 (citing Gauvreau ¶¶ 3, 12, 95–96).

Appellants argue, however, that Gauvreau does not cure Nogami's failure to teach parameter values for the recited reference signals. Appeal Br. 15.

Appellants argue their invention claims a particular improvement over the prior art, which involves comparing the received signal parameter of two reference signals on different frequencies and the Examiner has not shown that the combination of Nogami and Gauvreau teaches the claimed features. Appeal Br. 15–16. Appellants argue the Examiner failed to demonstrate sufficient rationale for modifying Nogami and Gauvreau to teach or suggest the subject matter recited in claim 1. Appeal Br. 16.

We agree with Appellants that the Examiner erred. Specifically, the Examiner relies on Nogami's disclosure of determining feedback information (e.g., CQI, PMI, and RI) from a reference signal's SINR for teaching or suggesting the recited parameter values. *See* Ans. 3–4; Nogami ¶ 103. The Examiner relies on Gauvreau's disclosure of comparing an RSRP/RSRQ value of a primary carrier to an RSRP/RSRQ value of a non-primary carrier for teaching comparing reference signal parameter values. The Examiner, however, fails to explain sufficiently why or how Gauvreau's

teaching of comparing RSRQ values *of two different carriers* would be combined with Nogami's teaching of generating feedback information (e.g., CQI, PMI, and RI) for *each sub band of a component carrier*. That is, even assuming Nogami's determination of feedback information for each sub band on a single component carrier associated with a single reference signal teaches or suggests determining a parameter value from a reference signal associated with a first frequency and a parameter value from a reference signal associated with a second frequency, the Examiner has not explained why or how a person of ordinary skill in the art would have combined and modified Gauvreau and Nogami to arrive at a system that compares Nogami's feedback information for each sub band.

For the above reasons, we are persuaded the Examiner erred in rejecting claim 1 as obvious in view of the combination of Nogami and Gauvreau. Claims 2–5, 13–17, 25, and 26 recite a commensurate limitation. Thus, for the same reasons, we also are persuaded the Examiner erred in rejecting claims 2–5, 13–17, 25, and 26.

Claims 6, 8–12, 18, and 20–24

The Examiner rejects claims 6, 8–12, 18, and 20–24 as obvious in view of the combination of Nogami, Gauvreau, and Choi. Final Act. 8–11. The Examiner, however, does not find Choi remedies the deficiency identified above with respect to the independent claims. Thus, for the above reasons, we are persuaded the Examiner erred in rejecting claims 6, 8–12, 18, and 20–24 as obvious in view of the combination of Nogami, Gauvreau, and Choi.

SUMMARY

We affirm the Examiner's decision to reject claims 1–6, 8–18, and 20–26 under 35 U.S.C. § 101.

We reverse the Examiner's decision to reject claims 1–6, 8–18, and 20–26 under 35 U.S.C. § 103.

DECISION

Because we affirm at least one ground of rejection with respect to each claim on appeal, the Examiner's decision to reject claims 1–6, 8–18, and 20–26 is affirmed. *See* 37 C.F.R. § 41.50(a)(1).

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).

AFFIRMED