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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
14/918,309	10/20/2015	Mark Griffith	48379/09055	7763
27530	7590	10/05/2020	EXAMINER	
Nelson Mullins Riley & Scarborough LLP IP Department One Wells Fargo Center 301 South College Street, 23rd Floor Charlotte, NC 28202			RIVERA VARGAS, MANUEL A	
			ART UNIT	PAPER NUMBER
			2864	
			NOTIFICATION DATE	DELIVERY MODE
			10/05/2020	ELECTRONIC

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UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

Ex parte MARK GRIFFITH

Appeal 2019-006249
Application 14/918,309
Technology Center 2800

Before ADRIENE LEPIANE HANLON, JAMES C. HOUSEL, and
JANE E. INGLESE, *Administrative Patent Judges*.

INGLESE, *Administrative Patent Judge*.

DECISION ON APPEAL

Appellant¹ requests review under 35 U.S.C. § 134(a) of the Examiner's rejection of claims 1, 3–5, 7–12, and 14–21.² We have jurisdiction under 35 U.S.C. § 6(b).

We AFFIRM.

¹ We use the word “Appellant” to refer to the “applicant” as defined in 37 C.F.R. § 1.42. Appellant identifies Navico Holding AS as the real party in interest. Appeal Brief filed March 25, 2019 (“Appeal Br.”) at 1.

² Non-Final Office Action entered September 26, 2018 (“Non-Final Act.”) at 1.

CLAIMED SUBJECT MATTER

Independent claims 1 and 17 illustrate the subject matter on appeal, and read as follows:

1. A non-transitory computer-readable medium having stored thereon computer-executable instructions which, when executed by a computer, cause the computer to:
 - receive chlorophyll data, from one or more chlorophyll sensors disposed on a hull of a vessel in real-time or substantially near real-time, wherein the chlorophyll data corresponds to a marine environment proximate to the vessel;
 - analyze the received chlorophyll data to determine one or more real-time or substantially near real-time chlorophyll concentrations of the marine environment;
 - determine a real-time or substantially near real-time location of the vessel based on global positioning system (GPS) data; and
 - correlate the real-time or substantially near real-time chlorophyll concentrations to the real-time or substantially near real-time location of the vessel; and

generate a display based on the real-time or substantially near real-time chlorophyll concentrations, wherein the generated display comprises one or more visual representations of the one or more real-time or substantially near real-time chlorophyll concentrations overlaid on a chart map of the marine environment at the correlated location.

17. A non-transitory computer-readable medium having stored thereon computer-executable instructions which, when executed by a computer, cause the computer to:
 - receive chlorophyll data, from one or more chlorophyll sensors disposed on a hull of a vessel in real-time or substantially near real-time, wherein the chlorophyll data corresponds to a marine environment proximate to the vessel;
 - analyze the received chlorophyll data to determine one or more real-time or substantially near real-time chlorophyll concentrations of the marine environment; and

generate one or more alerts based on comparing the real-time or substantially near real-time chlorophyll concentrations to one or more predetermined values.

Appeal Br. 15, 18–19 (Claims Appendix) (emphasis added).

REJECTION

The Examiner maintains the rejection of claims 1, 3–5, 7–12, and 14–21 under 35 U.S.C. § 103 as unpatentable over Schaeffer³ in view of Chaum⁴ in the Examiner’s Answer entered June 26, 2019 (“Ans.”).⁵

FACTUAL FINDINGS AND ANALYSIS

Upon consideration of the evidence relied upon in this appeal and each of Appellant’s timely contentions,⁶ we affirm the Examiner’s rejections

³ US 2015/0339323 A1, published November 26, 2015.

⁴ US 5,126,978, issued June 30, 1992.

⁵ Although the Examiner includes claims 22 and 23 in the heading for this rejection in the Non-Final Office Action (Office Act. 4), the first page of the Office Action does not list claims 22 and 23 as pending in the application, which correctly reflects Appellant’s cancellation of claims 22 and 23 (in an amendment filed August 16, 2018). And although the Examiner includes a separate rejection of claim 6 under 35 U.S.C. § 103, Appellant cancelled claim 6 in an amendment filed January 2, 2018, as indicated in the first page of the Office Action, which does not list claim 6 as pending in the application.

⁶ We do not consider any new argument Appellant presents in the Reply Brief that Appellant could have raised in the Appeal Brief. 37 C.F.R. § 41.37(c)(1)(iv); 37 C.F.R. § 41.41(b)(2) (arguments raised for the first time in the Reply Brief that could have been raised in the Appeal Brief will not be considered by the Board unless good cause is shown); *see also Ex parte Borden*, 93 USPQ2d 1473, 1474 (BPAI 2010) (Informative) (explaining that “the reply brief [is not] an opportunity to make arguments that could have been made in the principal brief on appeal to rebut the Examiner’s rejections, but were not”); *Optivus Technology, Inc. v. Ion Beam*

of claims 1, 3–5, 7–12, and 14–21 under 35 U.S.C. § 103, for the reasons set forth in the Office Action, the Answer, and below.

We review appealed rejections for reversible error based on the arguments and evidence the Appellant provides for each issue the Appellant identifies. 37 C.F.R. § 41.37(c)(1)(iv); *Ex parte Frye*, 94 USPQ2d 1072, 1075 (BPAI 2010) (precedential) (cited with approval in *In re Jung*, 637 F.3d 1356, 1365 (Fed. Cir. 2011) (explaining that even if the Examiner had failed to make a prima facie case, “it has long been the Board’s practice to require an applicant to identify the alleged error in the examiner’s rejections”)).

We address claims separately, to the extent they are so argued by Appellant. 37 C.F.R. § 41.37(c)(1)(iv).

Claims 1, 4, 7–12, and 15

Appellant presents arguments directed to independent claims 1 and 12, which Appellant argues together, and Appellant does not separately argue claims 4, 7–11, and 15, which each depend from either claim 1 or claim 12. Appeal Br. 11–12. We, therefore, select claim 1 as representative, and decide the appeal as to claims 1, 4, 7–12, and 15 based on claim 1 alone. 37 C.F.R. § 41.37(c)(1)(iv).

Schaeffer discloses a system and method for determining and displaying a quality parameter of water located at a particular position within a body of water. Schaeffer Abst.; ¶¶ 14, 18, 41; claim 1. Schaeffer discloses that the system continually downloads satellite or aerial imaging data of a

Applications S.A., 469 F.3d 978, 989 (Fed. Cir. 2006) (argument raised for the first time in the reply brief that could have been raised in the opening brief is waived).

body of water to a server database. Schaeffer ¶ 62. Schaeffer discloses that, separately, a user with a mobile device equipped with a GPS system indicator sends particular location information to the system. Schaeffer ¶¶ 19, 44, 45, 80. Schaeffer discloses that the system extracts a subset of the image information in the database specific for the particular location sent by the user, and the system transmits this information to the user's mobile device for "processing, analysis, and visualization," to provide "current information regarding a water quality parameter" at "the requested location." Schaeffer ¶¶ 18, 41, 45, 46. Schaeffer discloses that "[b]y continually updating the server with satellite imaging data, near-real time conditions may be provided to users in a timely manner." Schaeffer ¶ 62.

Schaeffer discloses that a user may select a particular water quality parameter of interest, such as chlorophyll concentration, and the system will extract and present to the user's mobile device image data for a requested location corresponding to the selected water quality parameter. Schaeffer ¶¶ 14, 31, 41, 49, 83.

Schaeffer discloses that qualitative and quantitative information for a water quality parameter can be displayed on a user's mobile device, and Schaeffer explains that "the results may be shown for a particular location and/or have a display box" overlying a map showing the requested location and its surroundings, as shown in Schaeffer's Figure 3. Schaeffer ¶ 83. Schaeffer discloses that "[a]lternatively, a color shading (customizable) may be superimposed on the [map] image to provide a relative measurement for the surrounding area." *Id.* Schaeffer discloses that multiple parameters for the same location may be displayed on the same screen, by overlaying images of the multiple parameters. Schaeffer ¶¶ 85, 88; Fig. 5.

Schaeffer discloses that “the present invention’s imaging and analysis of water quality parameters may be combined with actual on site water sampling and/or testing.” Schaeffer ¶ 70. Schaeffer explains that a person on a boat may directly measure chlorophyll concentration, and because “the mobile device’s GPS provides the location of the water sample taken, the results can be directly interpreted with the image data analysis.” *Id.* Schaeffer discloses that “[t]his sample testing may confirm the image data analysis or add to it and the combined data may be even more helpful.” *Id.*

The Examiner finds that Schaeffer does not explicitly disclose measuring chlorophyll concentration using sensors disposed on the hull of a vessel, and does not disclose that the information displayed on a user’s mobile device comprises one or more visual representations of the one or more real-time or substantially near real-time chlorophyll concentrations, and the Examiner relies on Chaum for suggesting modifying Schaeffer’s system to include such features. Non-Final Act. 6.

Chaum discloses a system for continuously collecting data from ocean water using sensors mounted on the hull of a ship or submarine (naval platform). Chaum col. 1, ll. 24–40; col. 2, ll. 28–32. Chaum discloses that the sensors provide real-time measurements of various oceanographic parameters, including chlorophyll, and the system displays the data collected by the sensors. Chaum col. 5, ll. 6–9, 24–27; col. 8, ll. 17–21.

In view of these disclosures in Chaum, the Examiner concludes that “[i]t would have been obvious to one of ordinary skill in the art before the effective filing date of the claimed invention to modify Schaeffer’s invention to incorporate sensors on the hull of the vessel and wherein the generated display comprises one or more visual representations of the one or more

real-time or substantially near real-time chlorophyll concentrations for the purpose of acquiring live data.” Non-Final Act. 6.

Appellant argues that “even if combined, the combination of Schaeffer’s system and the sensor in Chaum would result in a combined water quality parameter display, not one specific to chlorophyll concentration and one that would not be in real-time or substantially near real-time (as other data — such as other water quality data) would also be present.” Appeal Br. 11 (emphasis omitted). Appellant argues that “[t]his could create a chart with false or misleading information that would render the purpose of the claimed invention less effective.” *Id.* Appellant argues that “neither Schaeffer nor Chaum, nor their combination, disclose, teach, or suggest” generating a display based on real-time or substantially near real-time chlorophyll concentrations comprising one or more visual representations of one or more real-time chlorophyll concentrations overlaid on a chart map of the marine environment at the correlated location, as recited in claim 1. Appeal Br. 11.

As discussed above, however, Schaeffer discloses that a user may select a particular water quality parameter of interest, such as chlorophyll concentration, and Schaeffer’s system will then extract and present to the user’s mobile device image data for a requested location corresponding to the selected water quality parameter. Schaeffer ¶¶ 14, 31, 41, 49, 83. As also discussed above, Schaeffer discloses that the results may be displayed as a box or color shading overlying a map showing the requested location and its surroundings, and Schaeffer indicates that images for multiple water quality parameters may be overlaid on the same screen. Schaeffer ¶¶ 83, 85, 88; Figs. 3 and 5.

One of ordinary skill in the art seeking to continuously obtain data on chlorophyll concentration at a particular location in real time would have been led to modify Schaeffer's system and method to mount sensors on the hull of a boat from which on-site water sampling and/or testing occurs, to continuously obtain data on chlorophyll concentration at a particular location in real time with the sensors, as disclosed in Chaum. The ordinary skilled artisan further would have been led to display the results of the measurements taken by the hull-mounted sensors, along with image data corresponding to chlorophyll concentration provided by Schaeffer's system, overlying a map showing the requested location and its surroundings, as disclosed in Schaeffer, to provide the user with a visual representation of the real-time chlorophyll concentration measured by the sensors as compared to, and in addition to, the chlorophyll concentration generated from Schaeffer's imaging data. As disclosed in Schaeffer, displaying both types of chlorophyll concentration data "may confirm the image data analysis or add to it and the combined data may be even more helpful." Schaeffer ¶ 70.

Thus, contrary to Appellant's arguments, the combined disclosures of Schaeffer and Chaum would have suggested a display comprising one or more visual representations of one or more real-time chlorophyll concentrations overlaid on a chart map of a marine environment at a particular location, as recited in claim 1.

Appellant argues that "Schaeffer's system utilizes satellite gathered image data to analyze and determine water quality parameters, including chlorophyll concentration," and, therefore, "there is already such chlorophyll data available via Schaeffer and there would be no need or desire to utilize sensors on the vessel." Appeal Br. 12.

As discussed above, however, Schaeffer explicitly discloses combining Schaeffer's imaging and analysis of water quality parameters, including chlorophyll concentration, with actual on site water sampling and/or testing. Schaeffer ¶ 70. Schaeffer further discloses that the results of the direct sample testing can be interpreted together with the image data analysis, to "confirm the image data analysis or add to it and the combined data may be even more helpful." *Id.* Contrary to Appellant's arguments, Schaeffer thus explicitly discloses the usefulness and benefits of obtaining chlorophyll concentration data both from direct on site water sampling and from image data analysis. Consequently, one of ordinary skill in the art would have recognized the usefulness of mounting sensors on the hull of a boat from which water samples are taken, as disclosed in Chaum, to allow chlorophyll concentration to be directly, continuously measured.

Appellant argues that "the analysis required for the general water quality in Schaeffer from satellite images is different than the sensor based analysis of Chaum," and, therefore, "one of ordinary skill in the art would not be motivated to combine the teachings of Schaeffer with the teachings of Chaum." Appeal Br. 12.

As discussed above, however, the Examiner's rejection of claim 1 is based on Schaeffer's disclosure of determining chlorophyll concentration at a particular location in a body of water using satellite image data, rather than determining "general water quality" as Appellant appears to assert. Non-Final Act. 6. And although determining chlorophyll concentration from satellite image data as disclosed in Schaeffer may differ from directly determining chlorophyll concentration using sensors as disclosed in Chaum,

such a distinction does not identify any particular error in the Examiner factual findings, reasoning, or conclusion of obviousness.

We, accordingly, sustain the Examiner's rejection of claims 1, 4, 7–12, and 15 under 35 U.S.C. § 103.

Claims 17–21

Appellant presents arguments directed to independent claim 17, and does not separately argue claims 18–21, which each depend from claim 17. Appeal Br. 12–13. We, therefore, select claim 17 as representative, and decide the appeal as to claims 17–21 based on claim 17 alone. 37 C.F.R. § 41.37(c)(1)(iv).

Claim 17 recites a non-transitory computer-readable medium having stored thereon computer-executable instructions which, when executed by a computer, cause the computer, in part, to generate one or more alerts based on comparing real-time or substantially near real-time chlorophyll concentrations to one or more predetermined values.

To address the rejection of claim 17, Appellant repeats arguments that Appellant presents for claim 1. Appeal Br. 13. Because these arguments do not identify reversible error in the Examiner's rejection of claim 1 for the reasons discussed above, the arguments also do not identify reversible error in the Examiner's rejection of claim 17, for the same reasons.

Appellant additionally argues that “even if combined, the combination of Schaeffer's system and the sensor in Chaum would not result in [] one or more alerts based on comparing real-time or substantially near real-time chlorophyll concentrations to predetermined values.” Appeal Br. 12 (emphasis omitted). Appellant argues that “Schaeffer utilizes historical data from satellites to enable its alert to a user,” which “is not in real-time or

substantially near real-time and is not based on chlorophyll concentrations, as it is instead, based on overall water quality from satellite images.” *Id.*

As discussed above, however, Schaeffer discloses a system that continually downloads satellite or aerial imaging data for a body of water to a server database. Schaeffer ¶ 62. Schaeffer discloses that the system uses the imaging data to provide current information to a user’s mobile device for a particular water quality parameter, such as chlorophyll concentration, at a specific location in the body of water. Schaeffer ¶¶ 18, 31, 41, 45, 46, 83. Schaeffer explains that “[b]y continually updating the server with satellite imaging data, near-real time conditions may be provided to users in a timely manner.” Schaeffer ¶ 62.

Schaeffer further discloses that the system “may always be running with passive continual updates from the server for locations of interest,” and a “user may set preferences for displaying and analyzing data [such as chlorophyll concentration] on their mobile device.” Schaeffer ¶ 63.

Schaeffer discloses that “[w]hen a water quality parameter [such as chlorophyll concentration] is above a desired threshold an alert may be provided to the user.” *Id.*

Thus, although Schaeffer may disclose use of historical data from satellites, and may disclose obtaining an indication of overall water quality from satellite images as Appellant argues, Schaeffer nonetheless also discloses providing an alert to a user based on near-real time conditions at a specific location for a particular water quality parameter, such as chlorophyll concentration, when the concentration is above a desired threshold (a predetermined value), as recited in claim 17.

We, accordingly, sustain the Examiner's rejection of claims 17–21 under 35 U.S.C. § 103.

Claims 3 and 14

Appellant presents arguments directed to claims 3 and 14, which Appellant argues together. Appeal Br. 13–14. We, therefore, select claim 3 as representative, and decide the appeal as to claims 3 and 14 based on claim 3 alone. 37 C.F.R. § 41.37(c)(1)(iv).

Claim 3 depends from claim 1 and recites that “the one or more visual representations of the one or more real-time or substantially near real-time chlorophyll concentrations are combined with a chart map, wherein the chart map comprises a real-time or substantially near real-time representation of the marine environment, and wherein the chart map includes a symbol representing a real-time or substantially near real-time location of the vessel in the marine environment.”

Appellant argues that Schaeffer does not disclose or suggest “providing a representation of the real-time or substantially near real-time representation of the vessel including a symbol on the chart map,” and Schaeffer instead focuses “on historical satellite acquired data not linked to a vessel.” Appeal Br. 13. Appellant argues that “when Schaeffer discloses using a mobile device GPS it does so for correlating samples or providing the user a reference point,” and Schaeffer does not teach utilizing “current GPS data to display on the chart—let alone corresponding to a current location of a vessel acquiring the real-time data.” Appeal Br. 13–14.

As discussed above, however, Schaeffer's system extracts a subset of satellite image information from a database specific for a particular, requested location, and the system sends this information to a user's mobile

device for “processing, analysis, and visualization,” to provide “current information regarding a water quality parameter [such as chlorophyll concentration] at the requested location.” Schaeffer ¶¶ 14, 18, 31, 41, 45, 46, 83. Schaeffer discloses that “[b]y continually updating the server with satellite imaging data, near-real time conditions may be provided to users in a timely manner.” Schaeffer ¶ 62.

As also discussed above, Schaeffer discloses that the “imaging and analysis of water quality parameters” obtained using Schaeffer’s system “may be combined with actual on site water sampling and/or testing.” Schaeffer ¶ 70. Schaeffer explains that a person on a boat may directly measure chlorophyll concentration, and because “the mobile device’s GPS provides the location of the water sample taken, the results can be directly interpreted with the image data analysis.” *Id.* Schaeffer discloses that the results of the image data analysis may be displayed as a box or color shading overlying a map showing the requested location and its surroundings, and Schaeffer indicates that images for multiple water quality parameters may be overlaid on the same screen. Schaeffer ¶¶ 83, 85, 88; Figs. 3 and 5.

In view of these disclosures in Schaeffer, one of ordinary skill in the art seeking to obtain data on chlorophyll concentration at a particular location in a body of water reasonably would have been led to directly measure the chlorophyll concentration using sensors mounted on the hull of a boat positioned at the desired location, as suggested by Chaum (discussed above). The ordinarily skilled artisan would have been led to display the results of the measurements taken by the hull-mounted sensors, along with image data corresponding to near real-time chlorophyll concentration provided by Schaeffer’s system, overlying a map showing the location of the

boat and its surroundings, determined by a GPS in the user's mobile device as disclosed in Schaeffer, to provide the user with a visual representation of the real-time or near-real time chlorophyll concentration at the location of the boat, as recited in claim 3.

We, accordingly, sustain the Examiner's rejection of claims 3 and 14 under 35 U.S.C. § 103.

Claims 5 and 16

Appellant presents arguments directed to claims 5 and 16, which Appellant argues together. Appeal Br. 14. We, therefore, select claim 5 as representative, and decide the appeal as to claims 5 and 16 based on claim 5 alone. 37 C.F.R. § 41.37(c)(1)(iv).

Claim 5 depends from claim 1 and recites that the non-transitory computer-readable medium further comprises "program instructions which, when executed by the computer, cause the computer to generate one or more alerts indicating whether the one or more real-time or substantially near real-time chlorophyll concentrations have changed by a predetermined amount or a predetermined percentage in comparison to a predetermined value."

To address the rejection of claim 5, Appellant repeats the argument that Appellant presents for claim 17 that "Schaeffer utilizes historical data from satellites to enable its alert to a user," which "is not in real-time or substantially near real-time and is not based on chlorophyll concentrations, as it is instead, based on overall water quality." Appeal Br. 14. Because this argument does not identify reversible error in the Examiner's rejection of claim 17 for the reasons discussed above, the argument also does not identify reversible error in the Examiner's rejection of claim 5, for the same reasons.

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We, accordingly, sustain the Examiner's rejection of claims 5 and 16 under 35 U.S.C. § 103.

CONCLUSION

Claims Rejected	35 U.S.C. §	Reference(s)/ Basis	Affirmed	Reversed
1, 3-5, 7-12, 14-21	103	Schaeffer, Chaum	1, 3-5, 7-12, 14-21	

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