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Keysight Technologies, Inc.
In care of: CPA Global
900 Second Avenue South
Suite 600
Minneapolis, MN 55402

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UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

Ex parte ROLF MADSEN, ASGER IVERSEN, JANUS FAABORG, and JEFF DRALLA

Appeal 2018-005320
Application 14/191,314
Technology Center 2100

Before TREVOR M. JEFFERSON, MIRIAM L. QUINN, and AMBER L. HAGY, *Administrative Patent Judges.*

QUINN, *Administrative Patent Judge.*

DECISION ON APPEAL

STATEMENT OF THE CASE

Pursuant to 35 U.S.C. § 134(a), Appellant[1] appeals from the Examiner's decision to reject claims 1, 3–12, and 14–20. We have jurisdiction under 35 U.S.C. § 6(b).

We AFFIRM.

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[1] We use the word Appellant to refer to "applicant" as defined in 37 C.F.R. § 1.42(a). Appellant identifies the real party in interest as Keysight Technologies, Inc. Appeal Br. 1.

CLAIMED SUBJECT MATTER

The claims are directed to a method of operating a data processing system to display a plurality of list entries. Spec. ¶ 3. Claim 1, reproduced below, is illustrative of the claimed subject matter:

> 1. A method of operating a data processing system to display a plurality of list entries, each list entry comprising a timestamp, an identifier, and a message, said method comprising:
>
> causing said data processing system to group said list entries by said identifier associated
>
> with said list entries; and
>
> generating a data flow chart on a display associated with said data processing system, said data flow chart having a plurality of rows, each row being a graphical view of said list entries having a given identifier, said rows comprising graphical elements representing each message in that row, each row comprising a row label indicating said identifier associated with that row and a time region representing a time axis on which each of said graphical elements is placed, said graphical elements being placed at a location in said time region determined by said timestamp associated with that message, wherein each of said list entries further comprises a duration indicating a time span associated with an action that generated said list entry, and wherein each of said graphical elements has a dimension along said time axis that is determined by said duration.

REFERENCES

The Examiner relies on the following prior art:

Name	Reference	Date
Eick	US 5,847,972	Dec. 8, 1998
Liu	US 2011/0179160 A1	Jul. 21, 2011
Chow	US 2013/0086501 A1	Apr. 4, 2013
Milirud	US 2013/0132872 A1	May 23, 2013
Watt	US 2014/0035922 A1	Feb. 6, 2014

REJECTIONS[2]

Claims 1, 4, 5, 7, 12, 14, 15, and 17 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Eick and Liu. Final Act. 2–5.

Claim 3 stands rejected under 35 U.S.C. § 103(a) as being unpatentable over Eick, Liu, and Chow. Final Act. 5–6.

Claims 6 and 16 stand rejected under 35 U.S.C. §103(a) as being unpatentable over Eick, Liu, and Milirud. Final Act. 6–7.

Claims 8–11 and 18–20 stand rejected under 35 U.S.C. §103(a) as being unpatentable over Eick, Liu, and Watt. Final Act. 7–8.

OPINION

We review the appealed rejections for error based upon the issues identified by Appellant, and in light of the arguments and evidence produced thereon. *Ex parte Frye*, 94 USPQ2d 1072, 1075 (BPAI 2010) (precedential).

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[2] Appellant does not argue claims 4–6 and 14–16 separately. Therefore, we do not address these claims other than in our conclusion concerning the independent claims from which they ultimately depend: claims 1 and 12. 37 C.F.R. §41.37 (c)(1)(iv) (2017); *In re Kaslow*, 707 F.2d 1366, 1376 (Fed. Cir. 1983) ("Since the claims are not separately argued, they all stand or fall together.").

To the extent Appellant has not advanced separate, substantive arguments for particular claims, or other issues, such arguments are waived. 37 C.F.R. § 41.37(c)(1)(iv) (2017).

Claims 1 and 12

Claim 1 requires that each list entry include a "duration indicating a time span associated with an action that generated said list entry." Appeal Br. 13 (Claim Appendix). Claim 1 also requires that each graphical element "has a dimension along said time axis that is determined by said duration." *Id.* The Examiner's rejection relies on Liu as suggesting the duration in the list entry and the graphical element having the dimension that is determined by the duration. Final Act. 4.

Appellant challenges the Examiner's rejection on two bases. First, Appellant states: "Appellant can find no teaching in Liu of a message from one of the agents including a duration of an action." Appeal Br. 6. Appellant characterizes Liu as teaching that the "data sent by the agents is processed by the server that generates the plot shown in Figure 4." *Id.* According to Appellant, the "server would appear to deduce the time span" from the data sent by the agents. *Id.*

Second, Appellant challenges the reasons to combine Liu and Eick's teachings because Eick would need to be modified to include the duration as part of the list of entries, but "Eick does not control the content of those messages." *Id.* Appellant faults the Examiner for not specifying how one of ordinary skill would modify Eick "given that the data logging program of Eick does not have control of the contents of the data." *Id.* at 6–7. We are not persuaded by either of Appellant's contentions that the Examiner erred.

As to Liu's teachings, we are persuaded that Liu teaches the "duration" entry in a log entry. The Examiner correctly notes that Liu teaches components that perform an activity for a time duration further represented and visualized on a graph shown in Figure 4 of Liu. *See* Final Act. 4 (citing Liu ¶¶ 32, 33, Fig. 4). Liu teaches that the agent collects the timestamp for the activities, as well as other details of the log data, such as "timeline of activity executions, number of processes, number of components or software applications in the processes, and the like." Liu ¶¶ 18, 26. Thus, Liu's log data includes the time duration of each activity that Liu further displays as a graphical element as shown in Figure 4. As the Examiner finds, and we agree, Liu's display of activities spanning a time duration further suggests that data logs of Liu include the duration information upon which the display is based. Ans. 10. The Examiner further notes, and we agree as stated above, that the software agents monitor and collect the log data. *Id.* Appellant's argument that Liu does not include a "duration" in a log entry is therefore, not persuasive.

As to the reasons to combine Eick and Liu's teachings, we are not persuaded of Examiner error. The Final Action specifically addresses the modification of Eick's interface to: (1) include a duration in the list entry; and (2) include a dimension of the graphical elements along the time axis. Final Act. 4. The Examiner finds, and we agree, that it "would be advantageous to one of ordinary skill in the art to utilize such a combination because it would enable the user to identify activities that have taken relatively longer durations, as is suggested by Liu." *Id.* Liu expressly confirms such a reason, stating that the visualization of the log data can be used to gauge performance of software applications because a user can

easily pinpoint a bottleneck. Liu ¶ 12. The Examiner also finds, and we agree, that "it would have been within the purview of one of ordinary skill in the art to make such a modification to the underlying reporting hardware or software," as suggested by Liu's description of software agents. Ans. 10.

Accordingly, we find unpersuasive Appellant's argument that Eick does not have "control" of the contents of the data. The combination of teachings of Eick and Liu result in the recited list entries that each includes a timestamp, an identifier, a message, and a duration (as taught by Liu). Eick describes how its data log (which would include the duration entry as taught by Liu) is analyzed to extract the various attributes and data structures that Eick uses to prepare the graphs. *See, e.g.*, Eick 7:12–63 (describing how to obtain displays from the log files, including a description of setting up data structures for each tuple). Liu also teaches the knowledge of analyzing log data, in particular to create timeline display of software activities. Liu ¶ 12. Eick, therefore, provides the sufficient "control" of the data logs in the form of analysis of the log entries, which a person of ordinary skill in the art would have modified as taught by Liu to further include the duration of each activity.

In its Reply, Appellant argues that Eick's log files are generated "by a variety of different instruments." Reply 2. In particular, Appellant states that "[t]o make changes, each of the instruments would require alterations in its reporting software." *Id.* And, Appellant contends, the types of reports are only "error reports" that "do not have different time durations." *Id.* Finally, Appellant characterizes Eick's goal as sorting "noise" from "interesting reports," a goal that would not need the alleged improvement of including duration. *Id.* These arguments are not persuasive.

"A person of ordinary skill is also a person of ordinary creativity, not an automaton." *KSR Int'l v. Teleflex Inc*., 550 U.S. 398, 421 (2007). We "can take account of the inferences and creative steps that a person of ordinary skill in the art would employ." *Id.* at 418. Such creativity may involve obvious modifications that one skilled in the art would make. *In re Icon Health and Fitness, Inc.*, 496 F.3d 1374, 1382 (Fed. Cir. 2007) (citing *Optivus Tech., Inc. v. Ion Beam Applications, S.A.,* 469 F.3d 978, 989–90 (Fed. Cir 2006)). The question is not whether modifications would be necessary, but rather, whether the combination of the familiar elements according to known methods is obvious when it does no more than yield predictable results. *Leapfrog Enter., Inc. v. Fisher-Price, Inc.*, 485 F.3d 1157, 1161 (Fed. Cir. 2007) (quoting *KSR*, 127 S. Ct. at 1739). Appellant's argument that Eick's modification would involve different instruments is unpersuasive because it does not rebut the combination with the *teachings* of Liu or rebut the finding by the Examiner of a reasonable motivation to combine the *teachings*. There is no evidence in the record that the combination of teachings would have been unpredictable, even with the modifications that Appellant alleges would have been necessary.

Furthermore, we do not agree with Appellant that the rejection is a result of hindsight reconstruction. Reply 2.

> Any judgment on obviousness is . . . necessarily a reconstruction based on hindsight reasoning, but so long as it takes into account only knowledge which was within the level of ordinary skill at the time the claimed invention was made and does not include knowledge gleaned only from applicant's disclosure, such a reconstruction is proper.

In re McLaughlin, 443 F.2d 1392, 1395 (CCPA 1971); *see also Radix Corp. v. Samuels*, 13 USPQ2d 1689, 1693 (D.D.C. 1989) ("[A]ny obviousness

inquiry necessarily involves some hindsight."). Here, the rejection is based on the combination of teachings from Eick and Liu. The reasons to combine the teachings has factual support in Liu, as we stated above. Therefore, the reasons to combine do not include knowledge gleaned solely from Appellant's disclosure. Accordingly, Appellant's argument regarding hindsight is unpersuasive.

Finally, Appellant's argument that the time reports are single time occurrences in Eick is unpersuasive. The argument does not explain with specificity why the *combination* of Eick and Liu's teachings would not be proper. Arguing that Eick's timestamps do not have different time durations does not address the combination of Eick with Liu's teachings of time durations. "Non-obviousness cannot be established by attacking references individually where the rejection is based upon the teachings of a combination of references." *In re Merck & Co*., 800 F.2d 1091, 1097 (Fed. Cir. 1986).

In sum, we are not persuaded that the Examiner erred in rejecting claim 1 as obvious over Eick and Liu. Appellant argues claims 1 and 12 together. Appeal Br. 9–10. Accordingly, we sustain the rejection of claims 1 and 12 as obvious over Eick and Liu.

Claims 7 and 17

Claim 7 recites "providing a graph of a number of graphical elements that overlap in time in said graphical view as a function of time as indicated by said timestamps." Appeal Br. 14. Claim 17 recites similar language. The Examiner relies on Eick as teaching the limitation. Final Act. 5. In particular, the Examiner finds that Eick provides a graph in the form of a

histogram. *Id.* Appellant argues that Eick's histogram does not teach the recited graphical elements because the activities represented by the histogram, although occurring within a certain time period, do not overlap in time. Appeal Br. 7.

The Examiner, however, also relies on Liu as teaching the recited graphical elements. Ans. 10–11. In particular, the Examiner finds that "the activities taught by Liu also overlap in time." *Id.* at 11. According to the Examiner, "[a]pplying [Eick's] histogram to [Liu's] activities would also indicate the number of graphical elements that overlap in time." *Id.* We agree with the Examiner that, taking into account the combination of Eick with Liu's overlapping activities, the histogram of Eick would indicate the number of graphical elements that overlap in time.

In Reply, Appellant focuses its arguments on Eick's lack of duration of information and the nature of the timestamps in Eick. Reply 2–3. These arguments, however, focus on Eick alone and not on the *combination* of Eick with Liu, which supplies the overlapping activities (and the duration information as discussed above with regard to claim 1). Accordingly, we are not persuaded by Appellant's argument that the Examiner erred in rejecting claims 7 and 17 as obvious over Eick and Liu.

Claim 3

Claim 3 recites "each row having two graphical elements that overlap in time includes a plurality of sub-rows that display said graphical elements such that no two graphical elements overlap in time in any sub-row." Appeal Br. 13. The Examiner relies on Chow as teaching this limitation. Final Act. 5–6. For instance, the Examiner points to Chow's event group as

having graphical elements representing events that overlap in time and can be selected to display a plurality of sub-rows so that no two graphical elements overlap in time in any sub-row. *Id.* at 6 (citing Chow ¶¶ 3, 22–25, 29, 30, Figs. 3, 4). Appellant takes issue with the Examiner's findings because (1) Eick's messages do not have a duration and therefore no Eick messages overlap in time, and (2) Chow teaches a cluster of messages that are on the same row when the cluster is not selected. Appeal Br. 8–9.

As to the first argument, we have addressed above that attacking Eick alone with respect to duration of messages is unpersuasive because the rejection is based on the combination of teachings of Eick with the Liu duration of (and overlapping) activities. As to the second argument, we are not persuaded that the Examiner erred. The claim does not limit the scope of the sub-rows such that each sub-row spans the entire length of the displayed row. Chow teaches that when a specific cluster of related items is expanded, each activity is displayed in its own sub-row, such that each graphical element is separate from the others. Chow, Fig. 4; Ans. 11. We agree with the Examiner that the plain language of claim 3 does not require that the *entire* sub-row be expanded. Ans. 11. Accordingly, we are not persuaded that the Examiner erred in finding that Chow teaches the limitation further recited in claim 3.

Claims 8 and 18

Claim 8 recites "each of said list entries further comprises a message type and wherein said data processing system displays a message type parallelism graph of a number of parallel processes that is operative when a given message type is operative." Appeal Br. 14. The Examiner relies on

Watt as teaching the limitation further recited in claim 8, and similarly recited in claim 18. For instance, the Examiner points to Watt's description of types of nodes and the display of a parallel dependency graph in Figure 5. Final Act. 7–8 (citing Watt ¶¶ 11, 34, 35, 38, 59–62, Fig. 5). Appellant argues that if each block in Figure 5 is a "message type," Watt does not disclose any "graph of a number of parallel processes that are operative when a given node is operative." Appeal Br. 9–10. In particular, Appellant contends that the Examiner's mapping assumes that "one could deduce the number of processes that are occurring in parallel" and that the parallelism shown refers to number of nodes that are operative at any given time, not the number of parallel processes operative at any given time. *Id.* at 10. We are not persuaded by Appellant's arguments.

The Examiner finds, and we agree, that Watt's Figure 5 demonstrates the "level of concurrency," which equates to the number of parallel processes over time. Ans. 12 (citing Watt ¶¶ 30, 35, 38). Watt states that Figure 5 "illustrates the level of concurrency over time during evaluation of parallel dependency graph." Watt ¶ 34. Watt states that the vertical axis of that graph represents the level of concurrency, which increases as the number of nodes concurrently running increases. *Id.*; *see also* Fig. 5 (showing level of concurrency "1" when node blocks 520 and 506 are shown in parallel shortly after time 0, and showing level of concurrency "4" when node blocks 526, 516, 514, and 528 are shown shortly after time 532)). Thus, we agree with the Examiner that Watt teaches the *number* of parallel processes because it provides the level of concurrency.

Further, Watt also describes filtering the display to show only nodes of a particular node type. *Id.* ¶ 70. Thus, when filtering for a specific node

type, Watt displays the parallel processes that are operative when those node types are operative. Therefore, we do not agree with Appellant that Figure 5 does not show the number of parallel processes operative when a message type is operative.

Consequently, we are not persuaded that the Examiner erred in finding that Watt teaches the limitations further recited in claims 8 and 18.

Claims 9 and 19

Claim 9 depends from claim 8 and further recites "said display comprises a plurality of said message type parallelism graphs each message type parallelism graph corresponding to a different message type." Claim 19 recites similar language. The Examiner relies on Watt as teaching this limitation. In particular, the Examiner finds that the "message type," as stated above with regard to claim 8, corresponds to Watt's node type and that Watt suggests that a user can filter performance visualizations to show only particular node types, in addition to being able to view multiple visualization graphs. Final Act. 8 (citing Watt ¶ 70). Appellant argues that the Examiner's findings regarding Watt are insufficient. Appeal Br. 10. Appellant also argues that the visualization graphs identified by the Examiner are not the claimed message type parallelism graphs of claims 9 and 19. *Id.* We are not persuaded by Appellant's arguments.

First, as stated above with regard to claim 8, Watt's filtering by node type results in a display of the node type parallelism graph. Second, claim 9 adds the limitation of displaying multiple parallelism graphs. The Examiner finds, and we agree that Watt teaches multiple performance visualizations or graphs. Final Act. 8; Ans. 13; Watt ¶ 74. According to the Examiner, each

performance visualization would be a different graph, each showing a particular node type (i.e., message type). Ans. 13. Accordingly, we find no error in the Examiner's determination that Watt teaches the limitation further recited in claims 9 and 19.

Claims 10, 11, and 20

Claim 10 requires that the parallelism graphs are "sorted on said display based on a total time messages of each type were active." Claims 11 and 20 recite sorting "by an indicator specifying a degree of parallelism in said messages of each type." Appellant argues that a finding that Watt is "capable" of sorting graphs in the manner that satisfies the limitations of these claims is insufficient to support a rejection of obviousness. Appeal Br. 11. We have reviewed the Examiner's findings, and find them sufficient to support the rejection of these claims. Final Act. 8; Ans. 13–14. In particular, the Examiner finds, and we agree, that Watt suggests arranging different and multiple performance visualizations in a variety of ways. Ans. 13 (citing Watt ¶ 74). Each performance visualization, when filtered by node type, would show a performance visualization of a different node type. *Id.* Notably, the Examiner finds that arranging items according to time or other characteristics is commonly known. Ans. 13. This finding is reasonable and unrebutted on the present record.

Consequently, the Examiner finds, and we agree, that Watt's graphs would be displayed according to a total time that messages of each type were active, or according to an indicator specifying a degree of parallelism in the message of each type. *Id.* Finally, the Examiner concludes that it would have been obvious to one of ordinary skill in the art, in view of Watt, Eick

and Liu, to sort the message type parallelism graphs according to time or other characteristics, e.g., according to a total time that messages of each type were active, or according to an indicator specifying a degree of parallelism in the message of each type. *Id.* Appellant, therefore, has not persuaded us that the Examiner erred in finding that Watt teaches or suggests the limitations further recited in claims 10, 11, and 20.

CONCLUSION

The Examiner's rejections are sustained.

DECISION SUMMARY

In summary:

Claims Rejected	35 U.S.C. §	Basis	Affirmed	Reversed
1, 4, 5, 7, 12, 14, 15, 17	103(a)	Eick, Liu	1, 4, 5, 7, 12, 14, 15, 17	
3	103(a)	Eick, Liu, Chow	3	
6, 16	103(a)	Eick, Liu, Milirud	6, 16	
8–11, 18–20	103(a)	Eick, Liu, Watt	8–11, 18–20	
Overall Outcome			1, 3–12, 14–20	

TIME PERIOD FOR RESPONSE

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

AFFIRMED