NOTE: This disposition is nonprecedential.

United States Court of Appeals for the Federal Circuit

XEROX CORP.,
Appellant

v.

SNAP INC.,
Appellee

2023-1967

Appeal from the United States Patent and Trademark Office, Patent Trial and Appeal Board in No. IPR2021-00986.

Decided: April 17, 2025

ALEXANDRA FIGARI EASLEY, McKool Smith, P.C., Dallas, TX, argued for appellant. Also represented by DAVID SOCHIA; KEVIN L. BURGESS, Marshall, TX; JAMES ELROY QUIGLEY, Austin, TX.

YAR R. CHAIKOVSKY, White & Case LLP, Palo Alto, CA, argued for appellee. Also represented by DAVID OKANO; NAVEEN MODI, JOSEPH PALYS, Paul Hastings LLP, Washington, DC.

Before MOORE, *Chief Judge*, PROST and STARK, *Circuit Judges*.

Opinion for the court filed by *Chief Judge* MOORE.

Circuit Judge STARK joins Part II of this opinion.

MOORE, *Chief Judge*.

Xerox Corporation (Xerox) appeals a final written decision of the Patent Trial and Appeal Board (Board) holding claims 1–20 of U.S. Patent No. 9,208,439 unpatentable. We affirm.

BACKGROUND

Xerox owns the '439 patent, which is directed to a method for receiving information about a user's surroundings from a mobile device, modifying stored information, and sending a notification of a change in that information to apps that recommend items or activities for the user. '439 patent at 1:7–12, 3:23–25, 9:13–29. Claim 1 is representative:

> 1. A method, comprising:
>
> [a] receiving, from a mobile device, event data derived from contextual data collected using detectors that detect a physical context surrounding the mobile device;
>
> [b] modifying *a context graph* that stores facts and assertions about a user's behavior and interests using the event data;
>
> [c] in response to determining that there exists a registration for *notification* of changes that *matches* the modification to *the context graph*, sending a *notification* of context graph change to a recommender.

Id. at 10:30–40 (emphases added).

Snap, Inc. (Snap) challenged claims 1–20 of the '439 patent as obvious over U.S. Patent No. 9,015,099 (Nitz) in view of U.S. Patent No. 6,714,778 (Nykänen). J.A. 100–01. The Board held all challenged claims would have been obvious based on the combination of Nitz and Nykänen. J.A. 1–77. Xerox appeals. We have jurisdiction pursuant to 28 U.S.C. § 1295(a)(4)(A).

DISCUSSION

I. Claim Construction

Claim construction is a question of law that may be based on underlying factual findings. *Kamstrup A/S v. Axioma Metering UAB*, 43 F.4th 1374, 1381 (Fed. Cir. 2022). We review the Board's claim constructions de novo and any underlying findings for substantial evidence. *Id.*

The Board concluded "context graph" does not require "the graph to store information about a user in the form of nodes and edges" and is not "limiting as to the particular way in which facts and assertions about a user are stored in the model." J.A. 15. Xerox argues the Board erred by construing "context graph" to not require any graph-based properties, such as nodes and edges. Appellant Br. 24–39. We agree.

The plain language of claim 1 requires a "context *graph*." And claim 20 clarifies claim 1's "context graph" has graph-based properties, such as "nodes and edges." '439 patent at 12:52–55 ("The method of claim 1, wherein sending the notification comprises notifying the recommender of . . . changes to individual properties of nodes and edges in the context graph."). Snap argues the Board's construction is correct because claim 20 is tied to a specific embodiment of "context graph" that has graph-based properties. Appellee Br. 42–45. We do not agree. Claim 20 does not limit claim 1's "context graph" to have graph-based properties because such properties are already inherent in claim 1's "context graph." Rather, claim 20 limits claim

1[c]'s "sending a notification of context graph change" element by requiring the notification includes certain changes to the context graph (i.e., changes to nodes and edges, which are properties of a context graph).

The Board concluded "context graph" does not require a graph-based model by relying, in part, on the specification's statement: "[a] context graph is an in-memory model that stores facts and assertions about a user's behavior and interests." J.A. 14 (quoting '439 patent at 3:20–22). Snap argues that statement is lexicography, which defines "context graph" to encompass non-graphical models. Appellee Br. 39–40. We do not agree. A patentee can, of course, change the plain and ordinary meaning of a term through lexicography. *See, e.g.*, *Thorner v. Sony Computer Ent. Am. LLC*, 669 F.3d 1362, 1365 (Fed. Cir. 2012). But when it does so, it must do so clearly and unmistakably. *Luminara Worldwide, LLC v. Liown Elecs. Co.*, 814 F.3d 1343, 1353 (Fed. Cir. 2016).

Throughout the claims and the written description, the patentee repeatedly indicates that "context graph" is a graph-based model. First, it is inherent in the term itself which repeatedly and consistently includes the word *graph*. Second, the specification describes context graph as a "graph." '439 patent at 2:63–67 ("The server-side architecture stores the contextual data and uses the contextual data to modify *a graph* containing user behavior and interest information. Applications may use information from the *graph* to modify application-specific user models and generate recommendations." (emphases added)), 9:28–31 ("When the *graph* changes, the system can send the new *graph* data to relevant recommenders. The recommenders can then form recommendations using the new *graph* data." (emphases added)). Further, the specification explains: "Context graph 406 is a per-user, in-memory, *graph-based model* that stores facts and assertions about user behavior and actions." *Id.* at 7:26–28 (emphasis added). After this qualification, the specification explains

that this "graph-based model" may store data "using a type-less approach to data storage" and "according to different data models, including data models for entity-relationship data and unstructured data." *Id.* at 7:36–40. Those are examples of how the underlying data in the context graph can be stored in the nodes and edges; they do not mean context graph is no longer a graph-based model.

The statement in the specification which Snap relies upon for lexicography where the patentee defines the context graph as not limited to a graph-based model is: "[a] context graph is an in-memory model that stores facts and assertions about a user's behavior and interests." J.A. 14 (quoting '439 patent at 3:20–22). We do not agree. This is no more than a general descriptive statement which is completely accurate without being definitional. A context graph is undisputedly an in-memory model. A graph-based model is one form of an in-memory model. A context graph is also one which stores facts and assertions about a user's behavior and interests. Nothing about this sentence, which continues to employ the word "graph," broadens "context graph" to in-memory models that are not graph-based. This is merely a statement of intended purpose for the graph-based memory model. Compare the following:

A context graph	A bicycle
is an in-memory model	is a vehicle
that stores facts and assertions about a user's behavior and interests.	that a user can ride to get from place to place.

The bicycle has not been redefined to now include a tractor/car/motorcycle/plane/boat/canoe (all of which are vehicles that a user can ride to get from place to place). Likewise, stating that a context graph is an in-memory model does not transform it into any kind of in-memory

model. Even the Board acknowledged the need for "context graph" to have graph-based properties, such as "nodes" and "edges." J.A. 16 (citing J.A. 414–15 n.2 (Snap's Reply)).

The Board further relied on the prosecution history, in which the applicant distinguished a prior-art reference based on the type of data stored rather than the form in which the data was stored. J.A. 16 (citing J.A. 1060). The reference disclosed a "factor *graph*" that also stored data in nodes and edges. J.A. 1059–60. The reference was not, therefore, being distinguished based on the form in which the data was stored, i.e., graph.

We conclude that the proper construction of context graph is one which requires graph-based properties, such as nodes and edges.

II. Obviousness

We review the Board's ultimate determination of obviousness de novo and its underlying factual findings for substantial evidence. *Pers. Web Techs., LLC v. Apple, Inc.*, 848 F.3d 987, 991 (Fed. Cir. 2017). What a reference teaches and whether a skilled artisan would be motivated to combine references are questions of fact. *In re Constr. Equip. Co.*, 665 F.3d 1254, 1255 (Fed. Cir. 2011).

A. Claim 1[b]

The Board found Nitz discloses claim 1[b] under its construction of "context graph." J.A. 26. In the alternative, the Board found Nitz, combined with teachings of its incorporated references like Donneau-Golencer,[1] discloses claim 1[b] even if "context graph" has graph-based properties. J.A. 26–27. Xerox argues the Board never explained how or why Nitz and Donneau-Golencer would be combined

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[1] U.S. Patent Application No. 13/287,985, filed on Nov. 2, 2011, later issued as U.S. Patent No. 9,245,010.

to disclose a "context graph" under the Board's alternative finding. Appellant Br. 41–44. We do not agree.

Substantial evidence supports the Board's alternative finding that Nitz, combined with teachings of Donneau-Golencer, discloses claim 1[b], including a "context graph" with graph-based properties. The Board found that "Nitz specifically points to these references as describing ways to organize and conceptualize real-time information about a user" and then cited Donneau-Golencer Figure 8, which depicts a graph structure similar to "context graph 406" depicted in Figure 4 of the '439 patent. J.A. 27; J.A. 1108 (Nitz) at 12:42–48 ("Some examples of methods and techniques for extracting pertinent information from unstructured data, tagging the unstructured data with semantic information, and drawing inferences from the information are described in Donneau-Golencer . . . which is incorporated herein by this reference in its entirety."); J.A. 1297 (Donneau-Golencer) at Fig. 8. That is sufficient for substantial evidence. *In re Jolley*, 308 F.3d 1317, 1320 (Fed. Cir. 2002).

B. Claim 1[c]

The Board found a combination of Nitz and Nykänen discloses claim 1[c]. J.A. 33–34. Xerox argues Nykänen's registration system is for access to the user's data, so there is no need for claim 1[c]'s "notification" or "matches" elements because the system simply grants access to the actual data. Appellant Br. 44–49. We do not agree.

Substantial evidence supports the Board's finding. The Board found "Nykänen teaches that there is no need to transfer information from a knowledge base ('context graph') if there is no relevant event or change in the context of the mobile device." J.A. 33. The Board also found a skilled artisan "would have understood Nykänen's teaching that the registration is for changes to 'specific context information,' and Nykänen's teachings as a whole, to indicate that the notification is for changes that match a

specific subset of context information that the application is registered." *Id.* The Board relied on Snap's opening expert declaration, which accompanied Snap's petition and cited to Nykänen, and Snap's reply expert declaration, which responded directly to Xerox's arguments and cited additional portions of Nykänen regarding the same figure and embodiment relied on in the opening declaration. J.A. 33–34 (citing J.A. 884–85, 888–91 ¶¶ 103, 108, 109, 111 (Op. Decl.); J.A. 2062–66 ¶¶ 116, 119 (Reply Decl.)). That is sufficient for substantial evidence. *Jolley*, 308 F.3d at 1320.

C. Motivation to Combine

The Board found a skilled artisan would have been motivated to combine Nitz with Nykänen to increase the efficiency of Nitz's system. J.A. 32–33. Xerox argues a skilled artisan would not look to Nykänen because its system has an additional authorization layer to protect data privacy on mobile devices, which decreases efficiency. Appellant Br. 50–54 (citing J.A. 1127–31 (Nykänen) at 2:35–38, 6:35–41, 9:40–46).

Substantial evidence supports the Board's finding. The Board found Nitz's system is inefficient because it pushes all data, changed or unchanged, to the recommender and Nitz itself recognizes a recommender does not need access to all data. J.A. 32–33. The Board also found Nykänen teaches there is no need to transfer data if there is no relevant change in the context. J.A. 33. The Board relied on Snap's opening expert declaration, which cited Nitz and Nykänen. J.A. 32–33 (citing J.A. 884–88 ¶¶ 103, 105, 107). Xerox's argument amounts to "contrary evidence [that] is insufficient to overcome substantial evidence review." *Restem, LLC v. Jadi Cell, LLC*, 130 F.4th 941, 947 (Fed. Cir. 2025).

CONCLUSION

We have considered the parties' remaining arguments and find them unpersuasive. For the foregoing reasons, we affirm the Board's decision.

AFFIRMED

COSTS

No costs.