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Paper 65
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UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

MICROSOFT CORPORATION
Petitioner

v.

ENFISH, LLC
Patent Owner

Case IPR2013-00559
Patent 6,163,775

Before THOMAS L. GIANNETTI, BRYAN F. MOORE, and SCOTT A. DANIELS, *Administrative Patent Judges.*

DANIELS, *Administrative Patent Judge.*

FINAL WRITTEN DECISION
35 U.S.C. § 318(a) and 37 C.F.R. § 42.73

I. INTRODUCTION

A. Background

Petitioner Microsoft Corporation ("Microsoft") filed a petition to institute an *inter partes* review of claims 1–15 and 31–45 of U.S. Patent No. 6,163,775 ("the '775 patent"). Paper 1 ("Pet."). We instituted trial for claims 1–15 and 31–45 on certain grounds of unpatentablility alleged in the Petition. Paper 14 ("Decision to Institute" or "Inst. Dec.").

After institution of trial, Patent Owner, Enfish, LLC ("Enfish"), filed a Patent Owner Response (Paper 30), along with a Declaration by Enfish's Declarant, Dr. H.V. Jagadish ("Jagadish Declaration"). On September 16, 2014, Enfish filed an unopposed motion to correct typographical errors in both papers and filed therewith the corrected Paper Owner Response ("PO Resp.," Paper 40) and the corrected Jagadish Declaration (Ex. 2007).[1]

Microsoft filed a Reply ("Reply"). Paper 35.

A consolidated hearing for IPR2013-00559, IPR2013-00560, IPR2013-00561, IPR2013-00562, and IPR2013-00563, each involving the same Petitioner and the same Patent Owner, was held on December 3, 2014. The transcript of the consolidated hearing has been entered into the record. Paper 64 ("Tr.").

We have jurisdiction under 35 U.S.C. § 6(c). This final written decision is issued pursuant to 35 U.S.C. § 318(a).

Microsoft has shown by a preponderance of the evidence that claims 31, 41, and 45 of the '775 patent are unpatentable. Microsoft has not

[1] For clarity, we refer to Enfish's corrected Patent Owner Response (Paper 40) and corrected Jagadish Declaration (Exhibit 2007), both filed on September 16, 2014.

sustained its burden of showing that claims 32–40 and 42–44 are unpatentable by a preponderance of the evidence. For the reasons discussed below, we are unable to reach a determination on the alleged grounds of unpatentability over prior art for claims 1–15. Accordingly, we terminate this proceeding with respect to claims 1–15 under 37 C.F.R. § 42.72.

B. Additional Proceedings

In addition to this petition, Microsoft has filed petitions challenging the patentability of claims 17–23 and 47–53, as well as claims 16, 24–30, 46, and 54–60 of the '775 patent. *See* IPR2013-00560, and IPR2013-00561. Microsoft indicates that claims of the '775 patent are presently asserted against Microsoft in *Enfish, LLC v. Microsoft Corporation, et al.*, Case No. CV12-7360 MRP (MRWx), in the Central District of California. Pet. 2. Microsoft further contends that a final judgment of invalidity for all the asserted claims in the lawsuit has been entered in the California case against Enfish. Ex. 1071.

Microsoft has also filed two petitions challenging the patentability of claims 1–60 of U.S. Patent 6,151,604 ("the '604 patent").[2] *See* IPR2013-00562; IPR2013-00563.

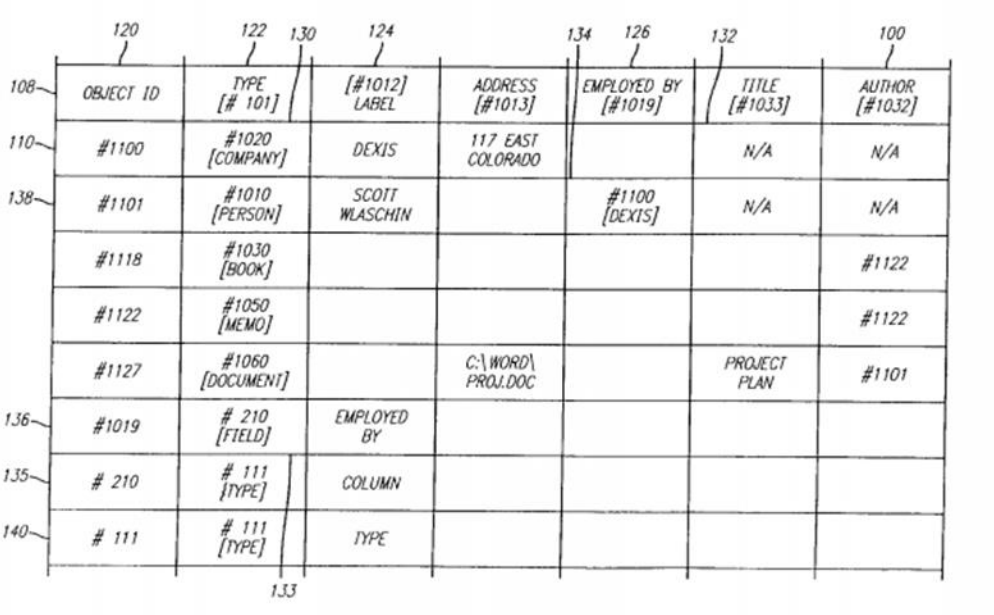
C. The '775 Patent

The '775 patent (Ex. 1001), titled "Method and Apparatus Configured According to a Logical Table Having Cell and Attributes Containing Address Segments," generally relates to a system and method for data storage, manipulation and retrieval in a self-referential logical table of a

[2] The '775 patent and the '604 patents both issued from continuations of application No. 08/383,752, filed March 28, 1995, now U.S. Patent No. 5,729,730. Pet. 6.

database. This table is a logical structure, not a physical structure stored contiguously in the memory. *Id*. at 6:39–41.

Figure 3 of the ’775 patent, reproduced below, illustrates a table structure of a logical table. *Id*. at 3:36–37.



As depicted by Figure 3 of the ’775 patent, above, table 100 is defined by rows 108, 110, 138, 136, 135, and 140 and columns 120, 122, 124, and 126. Ex. 1001, Fig. 3. The intersection of a row and a column defines a cell in the table. *Id*. at, 6:48-49. Each column corresponds to an attribute spanning various records. *Id*. at 6:46. An attribute is a single class description, such as an employer, denoted in column 126 of Figure 3, for example, by the text “Employed By.” *Id.* at 7:25-26.

Each row corresponds to a record spanning various attributes. Ex. 1001, 6:45-46. For example, row 110 corresponds to a company as shown in cell 130. *Id*. at 6:62–64.

D. Illustrative claims

Of the challenged claims, the independent claims are 1, 11, 15, 31, 41, and 45. Each of claims 2–10 depends, directly or indirectly, from claim 1. Each of claims 12–14 depends, directly or indirectly, from claim 11. Each of claims 32–40 depends, directly or indirectly, from claim 31. Each of claims 42–44 depends, directly or indirectly, from claim 41. Claim 31 illustrates the claimed subject matter and is reproduced below:

> 31. A method for storing and retrieving data in a computer system having a memory, a central processing unit and a display, comprising the steps of:
>
> configuring said memory according to a logical table, said logical table including:
>
> a plurality of cells, each said cell having a first address segment and a second address segment;
>
> a plurality of attribute sets, each said attribute set including a series of cells having the same second address segment, each said attribute set having an object identification number (OID) to identify each said attribute set;
>
> a plurality of records, each said record including a series of cells having the same first address segment, each said record including an OID to identify each said record, wherein at least one of said logical rows has an OID equal to the OID of a corresponding one of said attribute set, and at least one of said records includes attribute set information defining each of said attribute sets.

E. Prior Art Relied Upon

Microsoft relies upon the following prior art references:

Chang et al., EP Publication No. 0 336 580 A2 (pub. Oct. 11, 1989) ("Chang," Ex. 1003).

Dickerson et al., EP Publication No. 0 394 019 A2 (pub. Apr. 18, 1990) ("Dickerson," Ex. 1003).

Crus et al., U.S. Patent No. 5,133,068 (issued Jul. 21, 1992) ("Crus '068," Ex. 1010).

Smith et al., U.S. Patent No. 5,181,162 (issued Jan. 19, 1993) ("Smith '162," Ex. 1008).

Goldberg et al., U.S. Patent No. 5,201,046 (issued Apr. 6, 1993) ("Goldberg '046," Ex. 1011).

Horn et al., U.S. Patent No. 5,226,158 (issued Jul. 6, 1993) ("Horn'158," Ex. 1005).

Smith et al., U.S. Patent No. 5,404,510 (issued Apr. 4, 1995) ("Smith '510," Ex. 1006).

Jenness, U.S. Patent No. 5,463,774 (issued Oct. 31, 1995) ("Jenness '774," Ex. 1013).

Anderson et al., U.S. Patent No. 5,463,724 (issued Oct. 31, 1995) ("Anderson '724," Ex. 1012).

Covey, U.S. Patent No. 5,745,755 (issued Apr. 28, 1998) ("Covey '755," Ex. 1014).

MARY E. S. LOOMIS, THE DATABASE BOOK (1987) ("Loomis," Ex. 1019).

KENNETH WEBB AND LORI LAFRENIERE, ORACLE DISTRUBUTED SYSTEMS-A C PROGRAMMER'S DEVELOPMENT GUIDE (1991) ("Webb," Ex. 1007).

MICROSOFT® VISUAL BASIC™ PROGRAMMING SYSTEM MANUAL FOR WINDOWS™ VERSION 3.0 (1993) ("Visual Basic," Ex. 1004).

IEEE, STANDARD DICTIONARY OF ELECTRICAL AND ELECTRONICS TERMS (4th Ed.) ("IEEE," Ex. 1018).

F. The Instituted Alleged Grounds of Unpatentability

Reference(s)	Basis	Claims challenged
Chang (Ex. 1003)	§ 102	1, 2, 31, 32, and 41
Chang and Horn (Ex. 1005)	§ 103	11
Chang and Webb (Ex. 1007)	§ 103	15 and 45
Chang and Smith '162 (Ex. 1008)	§ 103	3, 8, 33, and 38
Chang and Dickerson (Ex. 1009)	§ 103	4 and 34
Chang, Dickerson and Crus (Ex. 1010)	§ 103	5 and 35
Chang and Goldberg (Ex. 1011)	§ 103	6 and 36
Chang and Anderson (Ex.1012)	§ 103	7 and 37
Chang, Smith '162, and Jenness (Ex. 1013)	§ 103	9 and 39
Chang and Covey (Ex.1014)	§ 103	10 and 40
Chang, Horn, and Smith '162	§ 103	13 and 43
Chang, Horn, Smith '162, and Jenness	§ 103	14 and 44
Chang, Horn, and Anderson	§ 103	12 and 42

In support of the above-referenced grounds of unpatentability, Microsoft relies on the Declaration of Dr. Antony Hosking (Ex. 1022).

II. CLAIM CONSTRUCTION

A. Legal Standard

In an *inter partes* review, claim terms in an unexpired patent are

interpreted according to their broadest reasonable construction in light of the specification of the patent in which they appear. 37 C.F.R. § 42.100(b); *see also In re Cuozzo Speed Techs., LLC.*, No. 14-01301, slip op. at 16, 19 (Fed. Cir. Feb. 4, 2015) ("Congress implicitly adopted the broadest reasonable interpretation standard in enacting the AIA," and "the standard was properly adopted by PTO regulation."). Claim terms are given their ordinary and customary meaning as would be understood by a person of ordinary skill in the art at the time of the invention and in the context of the entire patent disclosure. *In re Translogic Tech., Inc.*, 504 F.3d 1249, 1257 (Fed. Cir. 2007). If the specification "reveal[s] a special definition given to a claim term by the patentee that differs from the meaning it would otherwise possess[,] . . . the inventor's lexicography governs." *Phillips v. AWH Corp.*, 415 F.3d 1303, 1316 (Fed. Cir. 2005) (en banc) (citing *CCS Fitness, Inc. v. Brunswick Corp*., 288 F.3d 1359, 1366 (Fed. Cir. 2002)). Also, we must be careful not to read a particular embodiment appearing in the written description into the claim, if the claim language is broader than the embodiment. *See In re Van Geuns*, 988 F.2d 1181, 1184 (Fed. Cir. 1993) ("[L]imitations are not to be read into the claims from the specification."). We apply this standard to the claims of the '775 patent.

B. Overview of the Parties' Positions

Microsoft contends that this case involves a computer-implemented invention. Pet. 7–10. Microsoft also contends that the challenged independent claims invoke means-plus-function claiming, but the '775 patent fails to disclose an algorithm, which is an issue under § 112, sixth paragraph, that cannot be addressed in this proceeding. Pet. 13. In the Decision to Institute, we invited Enfish to direct us to the specific portions of

the specification that clearly link or associate a computer program or algorithm to the function corresponding to the claimed means. Inst. Dec. 12. For the reasons discussed below, we determine that Enfish in its response does not identify sufficient corresponding structure, as required under 35 U.S.C. § 112, sixth paragraph, for the "means for configuring said memory according to a logical table," recited in claims 1, 11, and 15.

With respect to the method claims 31–45, in the Decision to Institute, we provided constructions for "logical table," and "object identification number," which are shown in the table below. Inst. Dec. 12–13. We also determined that no express construction is needed for the following terms: "memory," "record," "attribute set," "at least one of said records includes attribute set information defining each of said attribute sets," and "defining the type of a different record," Inst. Dec. 15.

Claim Term or Phrase	Construction in the Decision to Institute
"logical table"	"[W]e construe the term "table" to mean: 'a structure of a database comprising rows and columns.'" Inst. Dec. 12. "We determine no express construction of 'logical' is needed for this decision." *Id.*
"object identification number"	"[W]e construe 'identification number' in light of the specification to mean: 'an array of bits that define.' For the purpose of this decision, an express construction of 'object' is not necessary." Inst. Dec. 13.

Enfish contends that our construction for "object identification number" is incomplete. PO Resp. 13. We evaluate Enfish's contention below. With the exception of the means-plus-function limitation, we discern no reason, based on the complete record now before us, to change our constructions in the Decision to Institute.

C. Analysis of the Parties' Claim Construction Positions

1. Means for configuring said memory according to a logical table

Independent claims 1, 11, and 15 include the limitation, "means for configuring said memory according to a logical table." In the Decision to Institute, we agreed with Microsoft that under the broadest reasonable interpretation, the function for the means for configuring is "configuring memory according to a logical table." Inst. Dec. 11. Additionally, we considered the corresponding structure for the recited function as including a general purpose computer. *Id*. at 11–12. Enfish does not challenge persuasively either of these determinations; however, Enfish identifies portions of the specification that Enfish contends provide algorithmic support for the recited function. PO Resp. 17–21. In particular, Enfish contends that the '775 patent discloses a four-step algorithm that is linked to the recited function of configuring memory according to a logical table. *Id*. at 18–20.

"[T]he corresponding structure for a § 112 ¶ 6 claim for a computer-implemented function is the algorithm disclosed in the specification." *Aristocrat Techs. Austl. Party Ltd. vs. Int'l Game Tech.*, 521 F.3d 1328, 1333 (Fed. Cir. 2008) (quoting *Harris Corp. v. Ericsson Inc.*, 417 F.3d 1241, 1249 (Fed. Cir. 2005)). Additionally, specific portions of the specification must clearly link or associate a computer program or algorithm to the function corresponding to the claimed means. *See Medical Inst. & Diag. Corp. v. Elektra AB*, 344 F.3d 1205, 1211 (Fed. Cir. 2003). For the reasons set forth below, we conclude that the four steps and other '775 patent specification portions identified by Enfish do not describe an algorithm for

the recited function of "configuring memory according to a logical table." We further conclude that Enfish has not clearly linked or associated the recited function to the four steps or the portions of the '775 patent specification that Enfish identifies.

For algorithmic support, Enfish identifies disparate excerpts of the '775 patent specification, which do not link or associate clearly a computer program or algorithm to the function corresponding to the claimed means for configuring said memory according to a logical table. For example, the first step, "[c]reate, in a computer memory, a logical table" (PO Resp. 18) appears to be similar to the recited function of configuring memory according to a logical table, but the first step is not found in the '775 patent specification. Additionally, none of the portions of the '775 patent specification that Enfish cites for this first step provide an algorithm or computer program for performing the recited function of "configuring memory according to a logical table" or clearly link or associate any algorithm or program to this recited function. PO Resp. 18 (citing Ex. 1001, Abs., 2:59–63, 6:38–46, Figs. 1, 3, 9). These portions describe that an already-formed table has rows and columns, without describing how memory is configured to create a logical table having rows and columns. Ex. 1001, 2:59–63. One portion states that memories "need not store" the table contiguously, but fails to describe an algorithm or computer program for configuring memory such that a logical table is not stored contiguously. *Id*. at 6:38–46.

Enfish's three remaining steps and the other '775 patent specification portions identified by Enfish fail to remedy these deficiencies. The second step is: "[a]ssign each row and column an object identification number

(OID) that, when stored as data, can act as a pointer to the associated row or column." PO Resp. 18–19. One of the portions of the '775 patent specification cited by Enfish for the second step indicates "the system must generate a unique OID when columns and rows are formed." Ex. 1001, 8:15–16. The remainder of the identified portions relate to assigning an OID or indicate that an OID "may be used" as a pointer, without describing an algorithm for forming columns and rows of a table or showing how assigning an OID relates to steps for forming columns and rows. Ex. 1001, Abstract, 2:60–61, 6:50–57, 7:1–2, 8:18–60, Figs. 3, 4. Additionally, the identified portions discuss assigning a numeric value to an OID in the form of a bit array, but fail to describe how to configure memory such that an OID may be used as a pointer. *Id*.

The third step is "[f]or each column, store information about that column in one or more rows of the logical table." The portions of the '775 patent specification cited by Patent Owner for the third step (PO Resp. 25 (citing Ex. 1001, Abstract, 2:66–3:2, 6:47–48, 7:25–31, Fig. 3)) indicate that a table has a row that corresponds to columns, and the row contains information about the column, such as a header row, which is a generic feature of an already-formed table. These '775 patent specification portions identified by Enfish (*id*.) describe the table having such corresponding rows and columns, however, these excerpts do not describe how to form a table with this feature or link or associate this feature to the recited function.

The fourth step, i.e., storing and accessing data in cells (PO Resp. 19–20), is performed in an already-configured table and, therefore, occurs after the recited function of configuring a table has occurred. Nonetheless, the '775 patent specification portions identified by Enfish (*id*. (citing Ex. 1001,

Abstract, 2:63–66, 6:48–49, 6:61–62, 7:9–10, 7:23–24, 11:52–62, Fig. 10)) suffer from the same deficiencies noted above.

We conclude that the four steps and other '775 patent specification portions identified by Enfish do not describe an algorithm for configuring memory in accordance with the claimed table. The portions of the '775 patent specification identified by Enfish describe an already-formed table having generic characteristics, such as columns, rows, identifiers, and a header row. *See*, *e.g.*, Ex. 1001, Fig. 3. The description, however, does not disclose any algorithm or computer program for forming this table. Additionally, the description identified by Enfish is not linked or associated clearly with the recited function of "configuring memory according to a logical table."

Enfish also relies on Dr. Jagadish's Declaration to show that the '775 patent specification provides an algorithm and clearly links the algorithm to the recited function. PO Resp. 18–20 (citing Ex. 2007 ¶¶ 68–76). The Jagadish Declaration, however, relies on similar portions of the '775 patent specification cited in Patent Owner's Response. For the reasons given, the Jagadish Declaration does not support Enfish's assertion. Dr. Jagadish further asserts, "[i]t is also my opinion that one of ordinary skill in the art would understand how to implement those algorithm steps using techniques and resources that were available at the time the '775 Patent was filed." Ex. 2007 ¶ 69. Enfish, however, cannot rely on the knowledge of one skilled in the art to address the deficiencies noted above. *See Function Media, LLC v. Google Inc.*, 708 F.3d 1310, 1319 (Fed. Cir. 2013) ("Having failed to provide any disclosure of the structure . . . FM cannot rely on the knowledge of one skilled in the art to fill in the gaps.")

Because we conclude that the four steps and other '775 patent specification portions identified by Enfish do not describe an algorithm for configuring memory in accordance with the claimed table, we terminate this proceeding with respect to the claims that recite this means-plus-function limitation. As explained in *BlackBerry Corporation v. Mobile Media Ideas, LLC*, Case IPR2013-00036 (PTAB Mar. 7, 2014) (Paper 65), the specification must disclose enough of a specific algorithm to provide the necessary structure under § 112, sixth paragraph. In the circumstance when the specification of the challenged patent lacks sufficient disclosure of structure under 35 U.S.C. § 112, sixth paragraph, the scope of the claims cannot be determined without speculation and, consequently, the differences between the claimed invention and the prior art cannot be ascertained. *Id.* For the reasons given, we determine that independent claims 1, 11, and 15 are not amenable to construction and, thus, we terminate this proceeding with respect to claims 1, 11, and 15 under 37 C.F.R. § 42.72. Because claims 2–10 depend, directly or indirectly, from claim 1, and claims 12–14 depend, directly or indirectly, from claim 11 we also terminate this proceeding with respect to these claims under 37 C.F.R. § 42.72.

2. Means for configuring said memory according to a logical table

Because we determine that this proceeding should be terminated as to claims 1–15 for the reasons discussed above, we need not construe other means-plus-function terms appearing in those claims for the purposes of this Decision.

3. Object Identification Number (OID)

Independent claims 1, 11, and 15 recite "object identification number (OID)" and "OID." In the Decision to Institute, we construed "object identification number" in light of the specification to mean: "an array of bits that define an object." Inst. Dec. 13 (citing Ex. 1001, 3:38–40, 8:43–45).

Enfish "agrees in principle" with our construction, but contends that the construction is incomplete. PO Resp. 13. Enfish contends that "OID" should be defined further as "a unique, immutable, and system-generated value that identifies an object." *Id*. Microsoft contends that Enfish seeks to read into the claims extraneous limitations that are unsupported by either intrinsic or extrinsic evidence. Pet. Reply 2. Microsoft additionally contends that Enfish's proposed construction does not provide an appropriate context for the additional limitations. *See, e.g.*, Pet. Reply 3.

At the heart of Enfish's contention is an assertion that an OID will not function properly if it is not unique, immutable, and system generated. PO Resp. 13–17. For example, Enfish contends that an OID must be a unique value because "if an OID were not unique the database would be non-functional." PO Resp. 14. Enfish asserts that "The invention assigns the unique OIDs to every row and every column: 'Each row is assigned a unique object identification number (OID) stored in column 120 and each column also is assigned a unique OID, indicated in brackets and stored in row 108.'" PO Resp. 14–15 (citing Ex. 1001, 6:50-52).

Microsoft contends that Enfish's "unique" OID requirement would conflict with the patent, which describes a row in a table with an OID that has the same value as the OID of a column in the same table. Pet. Reply 3 (citing Ex. 1001, Fig. 3). Our examination of the '775 patent indicates that a

column can have the same OID as a row, in fact, this is the particular aspect of the table being self-referential. Ex. 1001, 2:66–3:3 ("To enhance searching and to provide for synchronization between columns, columns are entered as rows in the table and the record corresponding to a column contains various information about the column. This renders the table self referential"). Figure 3 of the '775 patent discloses row 136 (corresponding to column 126) having OID #1019, and column 126 also having OID #1019. To the extent such an OID is unique, we are persuaded that it is unique "to every row and column" as Enfish asserts. PO Resp. 14–15.

Microsoft also contends that "immutable" should not be imported into the construction of OID because the term is absent from the specification, claims, and file history, and the specification is devoid of disclosure relating to immutability of an OID. Pet. Reply 3–5. Microsoft alleges that PO relies solely on extrinsic support for OID being "immutable. *Id.* at 4.

We determine that adopting Enfish's proposed construction without further context would create ambiguity. Limitations are not to be read into the claims from embodiments in the specification. *See In re Van Geuns*, 988 F.2d at 1184. Furthermore, we agree with Microsoft that Enfish relies on insufficient extrinsic evidence for support, for example, that an OID is "immutable." We, therefore, determine that the construction of "OID" in the Decision to Institute should not be changed.

III. ANALYSIS

For the reasons given below, Microsoft has shown, by a preponderance of the evidence, that each of claims 31 and 41 is unpatentable under 35 U.S.C. § 102 as anticipated by Chang and that claim 45 is unpatentable under 35 U.S.C. § 103 as obvious over Chang and Webb.

Also, we determine that Microsoft has not shown by a preponderance of the evidence that claims 32–40 and 42–44 are obvious over Chang as combined with one or more of Smith '162, Dickerson, Crus, Goldberg, Anderson, Jenness, Covey, and Horn.

A. Anticipation by Chang

We have reviewed Microsoft's anticipation argument and supporting evidence, including Chang's disclosure and the detailed explanation appearing on pages 21–40 of the Petition. Microsoft's explanation persuasively reads all limitations of claims 31 and 41, but not claim 32, onto the disclosure of Chang. Despite the counter-arguments in Enfish's Patent Owner Response, and the evidence cited therein, which we also have considered, Microsoft has shown, by a preponderance of the evidence, that each of claims 31 and 41 are unpatentable under 35 U.S.C. § 102(b) as anticipated by Chang. *See* 35 U.S.C. § 316(e).

1. Chang

Chang discloses a relational database including EMPLOYEE TABLE 10 ("EMP") in Figure 1, which includes a number of records, each record (row) containing specific data relating to a certain employee. Each record in EMPLOYEE TABLE 10 includes the employee number, name, salary, and department number aligned in columns 1–4 respectively. Ex. 1003, 5:26-33. The relational database also includes other tables, i.e., system catalogs, as shown in Figures 2–4. The system catalogs contain further information about the tables in the database, for example SYS.TABLES 12 in Figure 2 contains a record for EMPLOYEE TABLE 10 including the table name, and the creator in columns 1 and 2. Chang states that SYS.TABLES 12 may also contain information about a different table, such as an employee

location table (not shown) including the employee number and location. *Id.* at 5:40–45. Chang explains that:

> Due to common elements in these various tables relational information may be derived by using this commonality. For example, because the employee number is common to the aforementioned employee table and site location table, this piece of information may be used to relate a particular employee's name from the first table to the location where the employee works derived from the second table.

Id. at 5:45–53.

Chang also discloses storing definitional information relating to column attributes in a single record (row) of a table so that "[a]ccessing the row corresponding to a particular object returns a description of all of the attributes of the object's (i.e. the column) component objects, as well as information describing the object itself." *Id*. at 3:58–4:3. More specifically, Chang explains that the table shown in Figure 3 as reproduced below, SYS.COLUMNS catalog 14, contains records relating to the database structure, i.e. database objects and component objects, of the EMPLOYEE TABLE 10.

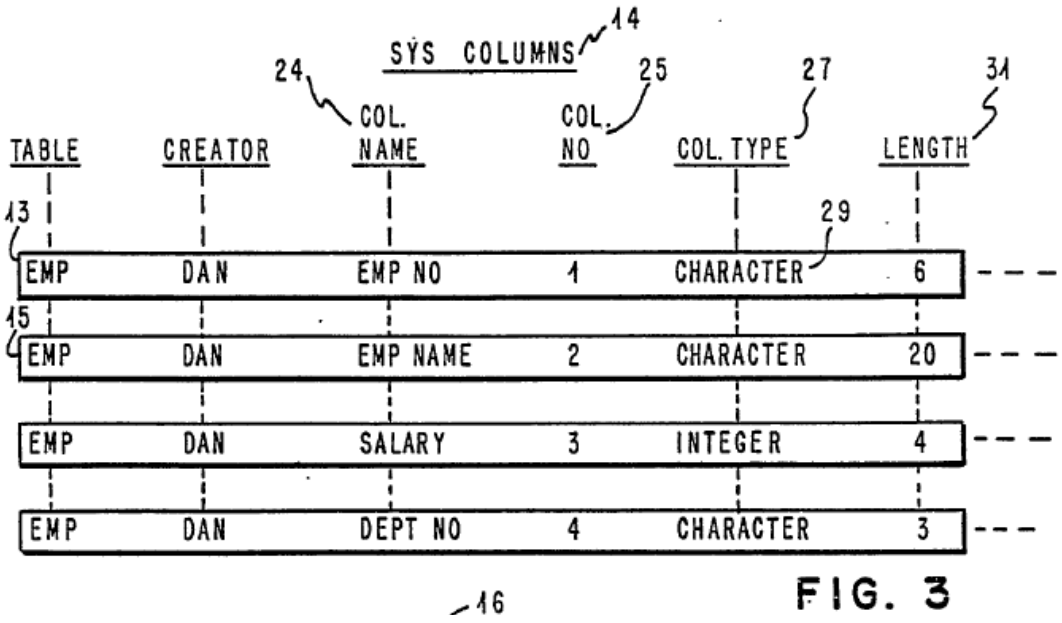


FIG. 3

Figure 3, above, reveals that SYS.COLUMNS catalog 14 contains specific information about the attributes of each of the columns in the EMPLOYEE TABLE 10. *Id*. at 6:25-39. Chang describes that:

> each record in the SYS.COLUMNS catalog 14 shown therein contains a number of fields describing attributes of a correlative one of the columns in the employee table 10…for example, EMP in the "Table" column as the first field thereof indicates that the data to the right is further information or attributes about a column appearing in the employee table.

Id. at 6:40–44. Each record (row) in the SYS.COLUMNS catalog 14 includes a field ("COL.NO" 25) having the column number relating to the corresponding column in the EMPLOYEE TABLE 10, which is defined by that particular row. For instance, from the SYS.COLUMNS catalog 14 in Figure 3, the value "1" in COL.NO 25 correlates this record with column 1 in the EMPLOYEE TABLE 10 shown in Figure 1. *Id*. at 6:50–7:10.

2. Claims 31 and 41

We have reviewed Microsoft's anticipation argument and supporting evidence which relates persuasively each element of claims 31and 41 to the disclosure of Chang. Pet. 22–40.

Microsoft asserts generally that Chang discloses a relational database and that it is well known that databases are used to store and retrieve data. Pet. 23 (citing Ex. 1003, 1:3–4, Abst., Ex. 1022 ¶ 170). Microsoft contends that Chang describes implementing the database on a computer system having memory, a central processing unit, and a display. *Id.* (citing Ex. 1003, Fig. 11). Microsoft further asserts that Chang discloses a method for configuring the memory according to a logical table that organizes data into rows and columns, and that the intersection of the rows and tables, by combination of the row/record i.d. and column value, identifies a cell. *Id.* at 24 (citing Ex. 1003, 13:57–14:10, Figs. 2–5, 11, Ex. 1022 ¶¶ 173–175, 182–184). Microsoft alleges that the cells in each column (attribute set) have the same second address segment, such as the same column number, to identify each cell. *Id.* at 28 (citing Ex. 1022, Hosking Decl. at ¶¶ 176–178). The OID's, Microsoft contends, are disclosed at least by "[t]he column number and/or ordinal number [] values that identify an object. Here, that object is a column." *Id.* at 29. Microsoft's arguments here relate to portions [A], [B], [C], and [D] of claim 31 for example, reproduced below. We are persuaded that Chang discloses these initial limitations of claim 31 because, as Microsoft's evidence shows, Chang describes a relational database having objects such as tables, and columns for storing data in a determinable way. Ex. 1003, 1:1–14. Chang further explains how various data entry, search,

and manipulation is carried out with respect to such objects. *Id.* at 27–37, Also, Chang discloses, in accordance with our claim construction, that the database tables include column identifiers, such as column numbers, and columns names, comporting with the proper interpretation of an OID, as "an array of bits that define" a column. *Id.* at 5:41–45.

Turning to the remaining limitations in claims 31 and 41, referenced as [E], [F1], and [F2], Enfish makes three specific arguments regarding why Chang does not disclose all the limitations of independent claims 31, and 41. PO Resp. 22. For purposes of clarity, we reproduce below method claim 31, including the additional reference elements ([E] and [F1]) referred to by Enfish.

> 31. [A] A method for storing and retrieving data in a computer system having a memory, a central processing unit and a display, comprising the steps of:
>
> [B] configuring said memory according to a logical table, said logical table including:
>
> [C] a plurality of cells, each said cell having a first address segment and a second address segment;
>
> [D] a plurality of attribute sets, each said attribute set including a series of cells having the same second address segment, each said attribute set including an object identification number (OID) to identify each said attribute set; and
>
> [E] a plurality of records, each said record including a series of cells having the same first address segment, each said record including an OID to identify each said record, [F1] wherein at least one of said records has an OID equal to the OID of a corresponding one of said attribute sets, and [F2] at least one of said records includes attribute set information defining each of said attribute sets.

Enfish asserts first that no one, single table in Chang includes all the limitations of these independent claims. *Id.* Second, Enfish contends that

neither of Chang's two tables (SYS.TABLES, SYS.COLUMNS), disclose the row OID limitation [E], and third, neither table discloses the limitation [F1] requiring a row OID to be equal to a column OID. *Id.* Enfish's contentions are based on its proposed construction of OID, which we decline to adopt for the reasons given above. Nonetheless, we disagree with Enfish's first assertion because, while we are persuaded by Enfish's position that the claims require all the elements to be found in a single table, Microsoft provided persuasive evidence that Chang's SYS.COLUMNS, at least inherently, if not expressly, includes a record row that defines each of the columns that appear in the SYS.COLUMNS table itself. Pet. 37. To anticipate a patent claim under 35 U.S.C. § 102, "a single prior art reference must expressly or inherently disclose each claim limitation." *Finisar Corp. v. DirecTV Group, Inc.*, 523 F.3d 1323, 1334 (Fed. Cir. 2008). In other words, SYS.COLUMNS, although shown by way of example in Figure 3 of Chang for EMPLOYEE TABLE ("EMP"), will, in the Table field also have a correlating SYS.COLUMNS row, having a creator (CREATOR) field, column name (COL NAME) field, e.g. column name, column number, and a column number (COL.NO) field including the column number 1, 2, 3 . . .etc., defining the SYS.COLUMNS columns. *See* Ex. 1003 at 6:49–7:19. In light of our interpretation of OID set forth above in II.C.3., Microsoft persuasively argues that "[a] row holding a column definition will of course hold an OID that is the same as the OID of the defined column." Pet. 37, *see also* Reply 10–11.

Enfish's second position, specifically that the OID's identified by Microsoft do not satisfy the "record including" part of the claim limitation [E] ("a plurality of records, each said record including a series of cells

having the same first address segment, each said record including an OID to identify each said record,") "because no cell in any row of Annotated FIG. 3[] contains all these values together," is also not persuasive. PO Resp. 31. Enfish did not advance any claim construction for the term "record including." The limitation reads in context "each said record including," not "*a cell of* each said record including." Indeed, the evidence asserted by Enfish, specifically Dr. Hosking's deposition testimony, indicates that an OID *can* be stored in a cell, not that it *must* be stored in a cell, in order to identify the row. *Id.*at 30, Ex. 2003, 183:12–184:17. Accordingly, we give little weight to Enfish's interpretation of Dr. Hosking's testimony. We are not apprised by Enfish of any persuasive evidence from the specification of the '775 patent, or otherwise, that the claims require that an OID *must* be stored in a cell of either a row or column.

In its third argument, Enfish maintains that element [F1] ("wherein at least one of said records has an OID equal to the OID of a corresponding one of said attribute sets") is not meet by Chang because none of the OID values considered by Microsoft (record i.d., column number, column name, a combination of the table name, creator name, and/or column name or number) "satisfy all three of the requirements of OIDs—uniqueness, immutability and system generated." PO Resp. 30. Enfish's claim interpretation does not address the limitation in terms of the claim construction for OID provided in these proceedings. We determine that the OID values, alone and in combination, identified by Microsoft satisfy our construction for an OID as "an array of bits that define." Each row in SYS.COLUMNS, shown in Figure 3 of Chang, includes both the table name (column 1), as well as column number (column 4). Therefore, for at least

the table name and column number values, included in the row defining a particular column, SYS.COLUMNS satisfies the [F1] limitation "wherein at least one of said records has an OID equal to the OID of a corresponding one of said attribute sets," as recited in claim 31.

Enfish does not address the additional limitation [G] in claim 41 "searching said table for said pointer" in either the Preliminary Response or Patent Owner's Response. *See* Prelim. Resp. 21–31, PO Resp. 22–47. Microsoft explains how this limitation of claim 41 is met by Chang. Pet. 38–39 (citing Ex. 1003, Fig. 5, Ex. 1022 ¶¶ 204–207, 297–282. Chang discloses searching a relational database in which columns are amenable to being searched by disclosing that certain columns are indexed. *See* Ex. 1003 at Figure 5. Microsoft asserts that the ordinary use of such an index is searching the index to return a particular row or rows, from which the OID, acting as a pointer, described for limitation [G] can be determined. Pet. 39 (citing Ex. 1022, Hosking Decl. at ¶¶ 204–207, 275–277). We are persuaded by this explanation.

For the foregoing reasons, Microsoft has shown, by a preponderance of the evidence, that claims 31 and 41 of the '775 patent are anticipated by Chang.

3. Claim 32

Enfish further argues that the elements of claim 32 are not found in a single table, but are only found in SYS.INDEXES catalog of Figure 4, which is not a part of SYS.TABLES (Figure 2) or SYS.COLUMNS (Figure 3). PO Resp. 47–48. Microsoft does not address this argument in their Reply. As discussed above, we are persuaded that claims 31 and 32 require all the claim limitations following "said logical table including" to be found in the

same logical table. The Federal Circuit has repeatedly emphasized that the indefinite article "a" carries the meaning of "one or more" in open-ended claims containing the transitional phrase "comprising." *Baldwin Graphic Sys., Inc. v. Siebert, Inc*., 512 F.3d 1338, 1342 (Fed. Cir. 2008). Claim 31 recites "a logical table," and while the claim is not restricted to a database with one table, we determine that the recitations following "said logical table including" in claim 31 must be found in a single table regardless of the number of tables in the database. Claim 32 further limits the "attribute set information" recited as an element of the logical table in claim 31.

Our review of the specification of the '775 patent does not reveal any evidence, or embodiment, nor does Microsoft point us to any evidence, indicating that the elements of Enfish's claimed "logical table" were intended to be in separate, different tables. *See* Ex. 1001 Abst., 1:36–55, 3:13–27. The specification of the '775 patent consistently refers to table 100 in the context of a single table, including, in an embodiment used in a word processing application. *Id.* at 17:16–18, Figs 3, 9, 10, 13. ("The database of the present invention includes a novel Structured Word Processor that may be used in conjunction with the table 100.")

The evidence provided by Microsoft with respect to the packed description in SYS.TABLES storing column information, including primary key column definition information from the SYS.COLUMNS table is not persuasive because it does not explain how OID determination, by text entry, as recited in claim 32 would be conducted on such stored information and definitions in these particular tables, or even that SYS.TABLES or SYS.COLUMNS are indexed to provide such a search function. Pet. 39–40. Dr. Hosking states that it is SYS.INDEX of Figure 4 that is necessary for

Chang to determine what "columns are amenable to being searched." Ex. 1003 ¶ 200. Enfish argues persuasively that the only table Chang discloses for index searching is SYS.INDEX shown in Figure 4. PO Resp. 48 (citing Ex. 1003, 7:27–29, Ex. 2003 at 193:3-6).

For the foregoing reasons, Microsoft has not shown, by a preponderance of the evidence, that claim 32 of the '775 patent is anticipated by Chang.

B. Obviousness over Chang and Webb

We have reviewed Microsoft's obviousness arguments and supporting evidence, including Chang and Webb's disclosure and the detailed explanation appearing on pages 46–48 of the Petition. Microsoft's explanation persuasively reads all elements of claim 45 onto the disclosure of Chang. For the reasons given below, Microsoft has shown, by a preponderance of the evidence, that claim 45 is unpatentable as obvious over the combination of Chang and Webb.

1. Webb

Webb describes a distributed application which runs on a local computer and accesses data stored on a central computer. Ex. 1007, 14. The central computer makes the same data accessible to multiple users and application programs. *Id.* Webb describes itself as a "[*g*]*uide* . . . for C programmers who want to embed Structured Query Language (SQL) statements into their programs for access to local or remote (distributed) databases." *Id.* Webb also discloses table 3-5 including several rows, PRODUCT_ID 102 through 108, each row having pointer 101, that points to PARENT_PRODUCT_ID 101 which is a separate record/row. *See* Ex. 1007 at 47.

2. Claim 45

Enfish argues that Microsoft does not provide sufficient rationale for combining Chang and Webb. PO Resp. 58–59. Enfish specifically argues "[n]either the Petitioner nor Dr. Hosking, however, have even discussed such a combination, let alone demonstrated that such a combination is possible." *Id.* at 58 (citing Prelim. Resp, 53–56). We are not persuaded by this argument. In contrast to this statement, Microsoft explained that Webb provides a flexibility desired by relational database designers and relates to a relational database system and specific database structure, which includes SQL (Structured Query Language) statements, and discloses table 3-5 where at least one of the records/rows contains a cell that contains a pointer to a different row." Pet 46–47 (citing Ex. 1007 at 47, Ex. 1022 ¶¶ 287–288.).

We are persuaded that Microsoft has shown a sufficiently articulated reason with rational underpinning to support obviousness. Pet. 47–48 (citing Ex. 1022 ¶¶ 289–297). Microsoft explained that one of ordinary skill in the art would have understood the SQL language and would have combined Webb's database structures with Chang's system in order to "consolidate[e] system catalog information to reduce access requirements within a relational database." *Id*. at 48. The predictable use of familiar prior art elements according to their established functions renders the recited invention obvious. *See KSR Int'l Co. v. Teleflex, Inc.*, 550 U.S. 398, 417 (2007).

Microsoft explains how the initial limitations [A]–[E], and limitation [H3] of claim 45 are met by Chang for the same reasons as claims 31 and 41 discussed above in section III.C.2. Pet. 46. Microsoft additionally explains how the remaining elements of claim 45, listed below as [H1], [H2] as referred to by Microsoft and Enfish, are met by Webb. Pet. 46–48 (citing

Ex. 1007, xiii, 47, Ex. 1022 ¶¶ 287–297.

> [H1] at least one of said plurality of records contains a cell having a pointer to a different record
>
> [H2] at least one of said plurality of records includes information defining the type of a different record; and
>
> [H3] searching said table for said pointer (claim 45).

Microsoft contends that Webb discloses table 3-5 having several rows that point to the parent product ID of a different record/row. Pet. 47 (citing Ex. 1007, 47, Ex. 1022 ¶¶ 287–288). Microsoft further argues "that rows with PRODUCT_ID of 102 through 108 are all of the same type, i.e. category, defined by the row for PRODUCT_ID 101, as indicated in the PARENT_PRODUCT_ID column. *See* Ex. 1007 at 47. We are persuaded by this explanation. For the foregoing reasons, Microsoft has shown, by a preponderance of the evidence, that claim 45 of the '775 patent is unpatentable as obvious over the combination of Chang in view of Webb.

C. Obviousness over Chang and Smith '162, or over Chang, Horn, and Smith '162, or over Chang, Smith '162, and Jenness, or over Chang, Horn, Smith '162, and Jenness

We have reviewed Microsoft's obviousness arguments and supporting evidence, including Chang and Smith '162's disclosure and the detailed explanation appearing on pages 48–50 of the Petition. For the reasons given below, Microsoft has not shown, by a preponderance of the evidence, that claims 33, 38, 39, 43, and 44 are unpatentable as obvious over the combination of Chang and Smith '162.

1. Smith '162

Smith '162 describes an object-oriented database system where

various documents are organized and represented as collections of logically related documents, i.e. documents of a similar type, or "objects." Ex. 1008, Abst. These "objects" containing the document collections can be "generically referred to as 'folders,'" and the folders represented as "objects." *Id.* at 3:29–35. The underlying database management system has an organizational table structure with rows and columns, where columns can specify objects, including attributes of an object, representing a folder. *See Id.* at 9:66–68, 10:31–34, Fig. 1.

2. Claims 33 and 38

Enfish asserts that Microsoft fails to provide a sufficient rationale for combining Chang and Smith '162. Prelim. Resp. 41. Enfish contends that Microsoft's only motivation for the combination is that "Chang and Smith '162 are closely related and address the same technical issues." Prelim. Resp. 41 (citing Pet. 49:10–12). Enfish argues that the bare assertion by Microsoft and Dr. Hoskings, that two references are within a similar field of endeavor, is insufficient to support a determination of obviousness. *Id.* (citing Ex.1022 ¶ 307).

We agree with Enfish that Microsoft has not met its burden to show that a person of ordinary skill in the art would have modified Chang based on the disclosure of Smith '162 resulting in the subject matter of the challenged claims. Microsoft asserts that "a person of ordinary skill in the art would have been motivated to combine Chang with Smith '162 because Chang and Smith '162 are closely related and address the same technical issues." Pet. 49 (citing Ex. 1022 ¶¶ 298–308). In support of this statement, Microsoft contends that Chang discloses a "file i.d." for each record, "that contains groups of records of a similar type," but does not explicitly disclose

this FID column object as a folder. *Id.* (citing Ex. 1008, 10:31–34). Petitioner further contends that Smith '162 discloses folder objects which contain objects, such as documents, of a similar type. *Id.* (citing Ex. 1008 9:66–69, Fig. 1).

Our review of Chang reveals simply that "file i.d." represents a file location "from which additional information on the table may be derived." Ex. 1003, 6:5–10. Microsoft's restatement of Chang's disclosure extrapolates "groups of records of a similar type" from "additional information," without sufficient explanation or evidence for this factual leap. *See* Pet. 49. A claim is unpatentable for obviousness under 35 U.S.C. § 103(a) if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which the subject matter pertains. *See KSR Int'l Co. v. Teleflex Inc.*, 550 U.S. 398, 406 (2007). A patent claim composed of several elements, however, is not proved obvious merely by demonstrating that each of its elements was known, independently, in the prior art. *Id.* at 418. In analyzing the obviousness of a combination of prior art elements, it can be important to identify a reason that would have prompted one of skill in the art to combine the elements in the way the claimed invention does. *Id.*

Microsoft's argument does not explain why one of skill in the art would look to Smith '162 for a "folder type record." Microsoft has not articulated any reason, or presented rational evidentiary underpinnings, explaining why Chang's "file i.d." was, or should have been, understood as a "folder object" as disclosed by Smith '162, or why one of skill in the art at the time of invention of the subject matter of the '775 patent would have

looked to combine Smith '162's "folder objects" with Chang "file i.d."

We conclude that Microsoft has not shown by a preponderance of the evidence that claims 33 and 38 would have been obvious over Chang and Smith '162.

3. Claims 39, 43, and 44

For claim 39, Microsoft relies on the combination of Chang, Smith '162, and Jenness. Pet. 54–55. Microsoft contends that Jenness teaches a pointer to the folder allegedly disclosed by Smith '162. *Id.* (citing Ex. 1013 5:62-63). As explained above with regard to claims 33 and 38, we conclude that Microsoft has not articulated any reason, or presented rational evidentiary underpinnings, explaining why Chang would have been combined with Smith. Thus, claim 39, which depends from claim 38, is not obvious for the same reason as claim 38. To meet the limitations of claim 43, Microsoft relies upon the combination of Chang, Horn, and Smith '162 and states that "it would have been obvious to combine Chang and Smith '162, as described for claim [] 38, with the further teachings of Horn. Pet. 57. Chang and Smith '162, however, cannot be combined to meet claim 43 for the same reasons discussed above in regard to claim 38. Claim 44 depends from claim 43, thus for the same reasons discussed above, Chang and Smith '162 cannot be combined to meet claim 44. Accordingly, we conclude that Microsoft has not shown by a preponderance of the evidence that claims 39, 43, and 44 would have been obvious over Chang, Smith '162, and Jenness, and/or Horn.

D. Obviousness over Chang and Dickerson, or over Chang, Dickerson, and Crus

For the reasons given below, after consideration of Microsoft's

Petition and Enfish's PO Response, and the evidence cited therein, Microsoft has not shown by a preponderance of the evidence that claims 34 and 35 are unpatentable as obvious over the combination of Chang and Dickerson, or Chang, Dickerson, and Crus.

1. Dickerson

Dickerson discloses a database system residing on a host, or central computer, and users can access the database from terminals connected to the central computer. Ex. 1009, 1:25–45, Fig. 1. Dickerson also teaches a contingency system having the same database at two different sites, with both sites being accessible by users from other terminals, where both databases are updated to maintain the databases identical. *Id.* at 11:5–20. Dickerson states "[w]henever a resource such as a part of a database is accessed during a sync interval, a lock will be placed on both copies of that resource (one copy at each site) . . . the two databases will always remain identical for practical purposes as the locks on the data at the second site will not be released until its commit process is completed, so that no terminal will ever be able to obtain differing information from the two databases." *Id.* at 11:9–20.

2. Claim 34

Microsoft argues that Chang discloses all the limitations of base claim 31, but not the reciprocal synchronization of two attribute sets recited in claim 34. Pet. 50. More particularly, Microsoft asserts that Dickerson discloses the limitation in claim 34 "*wherein said attribute set information defines one of said attribute sets to contain information for synchronizing two attribute sets reciprocally.*" *Id.* Microsoft argues that Dickerson discloses "mirroring," that teaches "reciprocal synchronization of two

attribute sets," where Dickerson discloses modification of an attribute in one database replicated in databases at other sites. *Id.* at 50–51 (citing Ex. 1009 at 10:56-11:4, Figure 8). In support of this ground, Microsoft relies on the Hosking Declaration (Ex. 1022 ¶¶ 248, 309–320), explaining how each limitation is disclosed in Chang and Dickerson. Pet. 51.

Enfish contends that Microsoft's arguments are based on "mirroring" that "occurs across separate databases as opposed to across two columns within the same table." PO Resp. 50. Enfish makes two specific arguments with respect to "mirroring" and the asserted combination. *Id.* Enfish first contends that Petitioner has failed to explain, or provide evidence, why one of skill in the art would combine these references to "mirror" columns within the same logical table in the first place. *Id.* Enfish asserts that, on the contrary, one of skill in the art would understand that "mirroring" columns across different databases defeats the purpose of a single system catalog such as SYS.TABLES and SYS.COLUMNS in Chang. *Id.* Also, Enfish contends that "mirroring" occurs across separate databases and is not the same function as "synchronizing two attribute sets reciprocally" as recited in claim 34. *Id.*

Dickerson teaches replication of data across separate databases at different sites by synchronization:

> Whenever a resource such as a part of a database is accessed during a sync interval, a lock will be placed on both copies of that resource (one copy at each site). A communications function local to the transaction manager will participate in the commit process with that transaction manager so as to guarantee that any update information is transmitted out of that site by the time that commit takes place. The transmitted update information is used to update the database at the other site so as to maintain the two databases identical.

Ex. 1009, 11:9–20. Dickerson states that mirroring "is an arrangement in which databases at different sites hold the same data, as in a contingency system, but with the databases at both sites being available for access by terminals." *Id.* at 10:58–11:4. The evidence in Dickerson relating to mirroring data in separate databases reveals a discrete sync interval permitting the transfer of the same data, in the same attribute set, between separate databases and separate tables. *Id.* at 5:56–6:5. This disclosure, however, does not describe how to synchronize two attribute sets in the same table by a specific synchronizing attribute set, also in the same table, as called for in claim 34.

We give little weight to Dr. Hosking's testimony with respect to the limitations in claim 34 because he does not provide an explanation or evidence as to why Dickerson's synchronization of data in the same attribute set across separate databases teaches reciprocal synchronization of attribute sets in the same table. Dr. Hosking states that a person of skill in the art would be motivated to combine Chang and "the synchronization concept as taught in Dickerson in the case that similar elements were to be reciprocally synchronized." Ex. 1022 ¶ 248. The premise of this argument is the assumption that Dickerson's synchronization across separate databases is the same as synchronizing two attribute sets reciprocally in the same database table. Dr. Hosking does not provide support for this assumption. This argument, therefore, does not sufficiently explain why mirroring data across separate databases leads to data synchronization between attribute sets in the same table. Dr. Hosking's testimony does not explain why, or how, one of ordinary skill in the art would use the database management disclosed by

Chang in cooperation with the linked database elements between separate databases to achieve reciprocal synchronization between attribute sets in the same table. *See id.* ¶¶ 310–320.

We conclude that Microsoft has not shown by a preponderance of the evidence that claim 34 would have been obvious over Chang and Dickerson.

3. Claim 35

For claim 35, which depends from claim 34, Microsoft relies on the combination of Chang, Dickerson, and Crus. Pet. 51–52. Microsoft contends that Crus teaches "reciprocal pointers to said two attribute sets" as required by claim 35. Chang and Dickerson cannot be combined to meet claim 35 for the same reasons as set forth above with respect to claim 34. Accordingly, we conclude that Microsoft has not shown by a preponderance of the evidence that claim 35 would have been obvious over Chang, Dickerson, and Crus.

E. Obviousness over Chang and Goldberg

For the reasons given below, after consideration of Microsoft's Petition and Enfish's PO Response, and the evidence cited therein, Microsoft has not shown, by a preponderance of the evidence, that claim 36 is unpatentable as obvious over the combination of Chang and Goldberg.

1. Goldberg

Goldberg teaches a database management system for a relational database which facilitates storage and retrieval of what are known as "directed graphs." Ex. 1011, 1:7–10, Fig. 1. Goldberg also discloses that a column in a table will have a reference data type, and that entries in that column "are pointers to rows in a specified table." *Id.* at Abst. Goldberg further explains that the directed graph structure is stored as a record/row in

a table, "with references corresponding to interconnections between records being stored in reference data type columns." *Id.*

2. Claim 36

Microsoft relies on Dr. Hosking's Declaration to explain how each limitation of claim 36 is disclosed in Chang and Goldberg. Pet. 52-53 (citing Ex. 1022 ¶¶ 335-339). In the Petition, Microsoft addresses only the second limitation in claim 36, not the first limitation. *Id.* In Dr. Hosking's Declaration, however, he states that Chang discloses, "at least one of said plurality of records includes information defining the type of a different record," addressing the first limitation recited in claim 36, With respect to this first limitation, Dr. Hosking testifies that:

> 336. As previously stated, Chang discloses a Packed Description, PD, in a row that contains information about columns that are represented by rows. *See* Claim 1[F] and 31[F] Anticipation by Chang Discussion. The PD includes information that defines the column type. *Id.* The column is represented as a row in the SYS.COLUMNS table. *Id.* Accordingly, the PD disclosed by Chang includes information that defines the type of a different logical row.

Ex. 1022 ¶ 336.

Enfish argues that Dr. Hosking's rationale is flawed in that it relies upon the Packed Description in SYS.TABLES table, and the column defining the Packed Description in SYS.COLUMNS table, and therefore does not meet the single table requirement of base claim 31. PO Resp. 51–52. Enfish contends that the correct reading of claims 31 and 36, "[t]he 'at least one of said plurality of records' and the 'different record' are recited as being within the same table." *Id.* at 52.

Microsoft's position is based upon the Packed Description in

SYS.TABLES allegedly defining the column type of any particular table, and that the columns are each represented as a row in the SYS.COLUMNS table. *See* Pet. 52–53, Ex. 1022 ¶ 336. We are persuaded that this evidence, even when read as Microsoft suggests, does not meet the single table requirement of base claim 31as discussed in section III.A.3. Accordingly, we conclude that Microsoft has not shown by a preponderance of the evidence that claim 36 would have been obvious over Chang and Goldberg.

F. Obviousness over Chang and Anderson, or over Chang, Anderson, and Horn

For the reasons given below, after consideration of Microsoft's Petition, Enfish's Preliminary Response, and PO Response, and the evidence cited therein, Microsoft has not shown, by a preponderance of the evidence, that claim 37 is unpatentable as obvious over the combination of Chang and Anderson, nor has Microsoft shown that claim 42 is unpatentable as obvious over the combination of Chang, Anderson, and Horn.

1. Anderson

Anderson discloses an electronic spreadsheet having numbered columns, for example 1, 2, 3 . . . etc., and letters referencing columns, for example A, B, C . . . etc. Ex. 1012, 1:51–65. The intersection of any row and column, for example B2, defines an addressable storage location, i.e. a "cell" for holding text and numeric information. *Id.* Anderson also teaches that spreadsheet cells can store formulas applying calculations to numbers stored in spreadsheet cells. *Id.* at 2:3–6. Anderson explains that "[i]n this fashion, cell references can serve as variables in an equation, thereby allowing precise mathematical relationships to be defined between cells." *Id.* at 6–9.

2. Claim 37

In support of this asserted ground of unpatentability, Microsoft relies on the Hosking Declaration (Ex. 1022 ¶¶ 342–353), explaining how each limitation is disclosed in Chang and Anderson. Pet. 53-54.

Microsoft asserts that Anderson teaches a spreadsheet program having notebooks, i.e., tables, with cells, rows and columns, where the cells have pointers to other columns. Pet. 53–54. Dr. Hosking testifies that one of skill in the art would understand spreadsheet programs as a simple form of a database similar to relational databases. Ex. 1022, ¶ 347, Further, Dr. Hosking states that one of skill in the art would therefore recognize it as obvious to combine the cell pointer functions in such spreadsheets with the relational tables in Chang, so that a cell in Chang's table would contain a plurality of pointers to other columns which contain defined values. *Id*. ¶ 347-351 (citing Ex. 1012, Figs. 4J, 4G).

Enfish argues that a cell address in a spreadsheet, for example the intersection of column A and row 2, "A2," shown in Anderson's Figure 4H, is not a "pointer" in a relational database, but "a cell reference [that] merely serves as a variable in the formula and the data stored within this referenced cell (i.e., cell A2) is used in the calculation." Prelim. Resp. 48–49. Enfish asserts specifically that "[t]he term "pointer" is known in the art to mean a variable that stores an address to a location where an object resides. The formula variables in Anderson are not pointers." PO Resp. 54. Enfish relies upon its Declarant, Dr. Jagadish, to explain that one of ordinary skill in the art of relational databases would not have understood a cell reference in Anderson's spreadsheet program, to be a "pointer," in a relational database as recited in the '775 patent. Ex. 2007 ¶ 215. Dr. Jagadish refers to three

textbooks which explain that [t]he plain and ordinary meaning of the term "pointer" is a variable that stores the address where another object resides." *Id.* ¶ 210. We credit Dr. Jagadish's testimony and evidence as to the meaning of the word "pointer" as it is understood by one of skill in the art because it is consistent with usage of the term "pointer" in the '775 patent. The '775 patent, although it does not give a specific definition, describes for example an OID used as a pointer to an object, where "the 'Employed By' column 126 is synchronized with the 'Employees' column by an OID pointer in the 'Synchronize With' column 144 to the 'Employees' column, represented by row 139." Ex. 1001, 10:8–12, *see also, Id.* at 12: 22–32.

Microsoft does not explain sufficiently or provide evidence that a cell reference for incorporating a variable stored in the cell into a formula in a spreadsheet would have been understood as a variable that stores an address to a location where an object resides in the database, at the time of the invention of the subject matter of the '775 patent.

We conclude that Microsoft has not shown by a preponderance of the evidence that claim 37 would have been obvious over Chang and Anderson.

3. Claim 42

For claim 42, Microsoft relies on the combination of Chang, Anderson, and Horn. Pet. 58. Microsoft contends that Horn discloses row-to-row pointers. Pet. 43. Claim 42, however, contains the same limitations as claim 37, therefore, Chang and Anderson do not meet the limitations of claim 42 for the same reasons discussed above in regard to claim 37. Accordingly, Microsoft has not shown by a preponderance of the evidence that claim 42 would have been obvious over Chang, Anderson, and Horn.

G. Obviousness over Chang and Covey

For the reasons given below, after consideration of Microsoft's Petition and Enfish's Preliminary Response, and the evidence cited therein, Microsoft has not shown, by a preponderance of the evidence, that claim 40 is unpatentable as obvious over the combination of Chang and Covey.

1. Covey

Covey is titled "Method for Creating and Maintaining a Database for a Dynamic Enterprise" and discloses a method of constructing a database which records a "token" to identify a database object, where a token is created for each event and includes a field corresponding to the event date. Ex. 1014. Abst. The database thus creates a record that preserves the historical state conditions of the database. *Id.* at 8:21–26.

2. Claim 40

Microsoft argues that dependent claim 40 is obvious in view of Chang and Covey. Microsoft concedes that Chang fails to disclose an OID having a session identification number and a timestamp. Pet. 55. Microsoft asserts that claim 40 is made obvious by Covey's disclosure of a relational database associating time values and session identifiers with database objects. *Id.* (citing Ex. 1014 at Abst., Figs. 12-13, 202). Microsoft argues that "[b]ecause Chang and Covey both address the same technical issues and disclose closely related subject matter, a person having ordinary skill in the art would be motivated to combine Chang and Covey." *Id.* at 55–56 (citing Ex. 1022 ¶¶ 36[6] –372. Dr. Hosking states that based on Chang's disclosure of variable length OID's and Patent Owner's contention that a text field, like a column name, can serve as an OID, it therefore "would be obvious, given this description, to add other types of identifying information

such as a session identifier and timestamp to each column." Ex. 1022 ¶ 370.

Enfish counters that Microsoft's statement that the references are analogous art is not sufficient to support obviousness. Prelim. Resp. 52. Microsoft does not, in the Petition, provide any reason for the combination of Chang and Covey apart from asserting the references are analogous art and address similar technical issues. Pet. 55–56. This is not a sufficient reason with rational evidentiary underpinnings to support the combination of Chang and Covey.

Microsoft cites to Dr. Hosking's testimony, apparently to provide the necessary reasoning and rational underpinnings. *Id.* at 56 (citing Ex. 1022 ¶ 36[6]–372). We are not persuaded by this testimony. Dr. Hosking's explanation of Chang's OID being variable length, and capable of being a text field, does not explain why one or ordinary skill would have looked to Covey to include a session identification and time stamp in an OID. At best, this reasoning explains that Chang's OID could accommodate the text and length of an OID including a session identification and time stamp. Dr. Hosking's statement, "I believe that it would be obvious, given [Chang's] description, to add other types of identifying information such as a session identifier and timestamp to each column," is hindsight. *See* Ex. 1022 ¶ 370. It is not, a sufficient reason with rational evidentiary underpinnings to support the combination of Chang and Covey.

We conclude that Microsoft has not shown by a preponderance of the evidence that claim 40 would have been obvious over Chang and Covey.

H. Secondary Considerations

The factual inquiries for obviousness include secondary considerations based on evaluation and crediting of objective evidence.

Graham v. John Deere Co., 383 U.S. 1, 17 (1966). However, to accord substantial weight to objective evidence requires the finding of a nexus between the evidence and the merits of the claimed invention. *In re GPAC Inc.*, 57 F.3d 1573, 1580 (Fed. Cir. 1995); *see also In re Huang*, 100 F.3d 135, 140 (Fed. Cir. 1996) ("success is relevant in the obviousness context only if there is proof that the sales were a direct result of the unique characteristics of the claimed invention.").

Enfish contends that the claimed invention received industry accolades, including praise from Microsoft, satisfied a long-felt need, resulted in success where others had failed, as well as commercial success and copying. PO Resp. 61–65. Enfish points to features of claim 31 that it contends resulted in the objective indicia of success to which Enfish refers. *Id*. at 61. We are not convinced by this argument. Claim 31 of the '775 patent is challenged as anticipated by Chang. Secondary considerations do not weigh into determinations regarding anticipation. *Cohesive Techs., Inc. v. Waters Corp.*, 543 F.3d 1351, 1364 (Fed. Cir. 2008).

In addition, we are not persuaded by secondary considerations here because Enfish has not shown a nexus between any of the accolades or successes it says occurred and the use of the pointer or pointer searching function.

Enfish asserts that Microsoft failed at developing a suitable search engine. PO Resp. 65–66. We are not persuaded by this argument. The statements of Bill Gates and others at Microsoft submitted relied on by Enfish in support of this assertion are not tied sufficiently to any claim at issue in this proceeding. Instead, the statements broadly refer to search engines. None of the statements reference two-way pointers, folder objects

or searching for pointers or OID's.

Enfish further submits evidence to show commercial success. PO Resp. 66. The evidence Enfish cites refers to how many users downloaded Enfish's software and to the planning of a collaborative effort as set forth in one paragraph of its business plan. *See* Ex. 2025, 2. Enfish's evidence, however, does not indicate that these users paid for or actually used the downloaded software. The evidence also does not indicate how the number of downloads indicates commercial acceptance, for example, as compared to downloads of other software at the time. Additionally, a planned collaborative effort does not indicate the results of the collaboration. Enfish's evidence does not establish commercial acceptance or financial success. *See In re Fielder*, 471 F.2d 640, 644 (CCPA 1973). Thus, we are not persuaded by Enfish's evidence of commercial success.

I. Motion to Correct Patent Owner Response

After institution of trial, Enfish timely filed a Patent Owner Response (Paper 24), along with the Jagadish Declaration (Ex. 2007). On September 16, 2014, Enfish filed an unopposed motion to file a second corrected Patent Owner Response and a corrected Jagadish Declaration, which Enfish contends correct only typographical errors and erroneous citations. Paper 40. We grant Enfish's September 16, 2014 motion.

J. Joint Stipulation

On November 14, 2014, the parties filed a joint stipulation requesting that we expunge confidential versions of exhibits 2049–2058 and 2060–2065. Paper 57. The parties contend that Microsoft withdraws its motion to seal (Paper 28) provided that we expunge the confidential versions. Paper 57. Microsoft agrees that the sealed version of Exhibit 2059 may be

unsealed. *Id*. We hereby grant the motion and expunge only confidential versions of exhibits 2049–2058 and 2060–2065.

K. Motion to Exclude

On November 3, 2014, Microsoft filed a motion to exclude Exhibit 2071, the Declaration of Dr. Sharad Mehrotra ("Mehrotra Declaration") and two paragraphs of the Declaration of Louise Wannier ("Wannier Declaration," Exhibit 2077 ¶¶ 32, 33). Paper 48.

Regarding the Mehrotra Declaration, we agree with Microsoft's assertion that Dr. Mehrotra provides only conclusory opinions and, therefore, we do not rely on it in this Decision. 37 C.F.R. § 42.65(a). Because Microsoft has not argued persuasively any other reason to exclude the Mehrotra Declaration, we deny Microsoft's request to exclude it.

Regarding the Wannier Declaration, we disagree with Microsoft that "Patent Owner has no basis to file the Wannier Declaration as supplemental evidence because Microsoft has not moved to exclude the Armon Declaration." Paper 48, 4–5. Patent Owner is entitled to submit supplemental evidence in response to Microsoft's objection. 37 C.F.R. § 42.64(b)(2). Microsoft further contends that the Wannier Declaration inserts untimely, conclusory, and improper technical opinions. Paper 48, 5. Patent Owner contends that paragraphs 32 and 33 do not exceed the scope because they are submitted to support admissibility. Paper 60, 3–4. We agree with Microsoft that the Wannier Declaration provides conclusory technical opinions, and, therefore, we do not rely upon it. Because Microsoft has not argued persuasively any other reason to exclude paragraphs 32 and 33 of the Wannier Declaration, we deny Microsoft's request to exclude it.

IV. CONCLUSION

We conclude that Microsoft has demonstrated by a preponderance of the evidence that (1) claims 31 and 41 of the '775 patent are anticipated by Chang, and (2) claim 45 of the '775 patent is obvious over the combination of Chang and Webb.

We further conclude that Microsoft has not shown that claims 32–40 and 42–44 of the '775 patent are unpatentable as obvious. In addition, we terminate this proceeding with respect to claims 1–15 under 37 C.F.R. § 42.72.

V. ORDER

For the reasons given, it is

ORDERED that claims 31, 41, and 45 of U.S. Patent No. 6,163,775 are determined by a preponderance of the evidence to be unpatentable;

FURTHER ORDERED that this proceeding is TERMINATED, under 37 C.F.R. § 42.72, with respect to claims 1–15;

FURTHER ORDERED Enfish's motion to file a second corrected Patent Owner Response and a corrected Jagadish Declaration (Paper 38) is GRANTED;

FURTHER ORDERED that Microsoft's motion to exclude (Paper 48) is DISMISSED;

FURTHER ORDERED that confidential versions of Exhibits 2049–2058 and 2060–2065 are EXPUNGED;

FURTHER ORDERED Microsoft's motion to seal is DISMISSED; and

FURTHER ORDERED that because this is a final written decision, parties to the proceeding seeking judicial review of the decision must comply with the notice and service requirements of 37 C.F.R. § 90.2.

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