

THIS OPINION WAS NOT WRITTEN FOR PUBLICATION

The opinion in support of the decision being entered today (1) was not written for publication in a law journal and (2) is not binding precedent of the Board.

Paper No. 34

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

Ex parte DAVID ORAN

Appeal No. 1996-1715
Application No. 08/068,592¹

ON BRIEF

Before HAIRSTON, BARRETT, and GROSS, Administrative Patent
Judges.

GROSS, Administrative Patent Judge.

¹ Application for patent filed May 27, 1993. According to appellant, this application is a continuation of Application No. 07/471,855, filed January 29, 1990, now abandoned.

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DECISION ON APPEAL

This is a decision on appeal from the examiner's final rejection of claims 6, 7, 39, 43, 44, and 46, which are all of the claims pending in this application.

The appellant's invention relates to a method of systematically updating information in a distributed network data processing system. Claim 39 is illustrative of the claimed invention, and it reads as follows:

39. A method of systematically updating information in a distributed network data processing system, said data network having at least one client node, at least one server node operating in conjunction with said client node, a plurality of directories, at least one clearinghouse replica of each of said directories, each of said clearinghouse replicas residing on said server node, and a synchronization attribute for each directory, said synchronization attribute having a synchronization attribute timestamp, said method comprising the steps of:

assigning a replica attribute having a replica attribute timestamp and a replica attribute value to each clearinghouse replica of each of said directories;

assigning a first directory attribute having a first directory attribute timestamp and a first directory attribute value indicative of an existing version of said directory to each of said directories;

assigning a second directory attribute having a second directory attribute timestamp and a second directory attribute value being indicative of an upgraded version of said directory to each of said directories;

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maintaining each said clearinghouse replica of each of said directories on said data processing system;

systematically comparing each said replica attribute value for each said clearinghouse replica with said second directory attribute value for each of said directories;

systematically comparing each said first directory attribute timestamp for each of said directories and said second directory attribute timestamp for each of said directories to said synchronization attribute timestamp;

systematically replacing each said clearinghouse replica of each of said directories with said upgraded version of said directory when said comparison of said replica attribute value and said second directory attribute value indicates that said second directory attribute value is a more recent version of said directory than said clearinghouse replica and said comparison of said first directory attribute timestamp and said second directory attribute timestamp to said synchronization attribute timestamp indicates that said synchronization attribute timestamp is more recent than said first directory attribute timestamp and said second directory attribute timestamp;

synchronizing each said clearinghouse replica on said data processing system by periodically propagating each said clearinghouse replica throughout said data processing system; and

modifying said synchronization attribute timestamp for each of said directories to represent a time at which said periodic propagation of said clearinghouse replica last occurred.

The prior art references of record relied upon by the examiner in rejecting the appealed claims are:

Lowry et al. (Lowry)	4,864,497	Sep. 05, 1989
Mathur	5,008,814	Apr. 16, 1991

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Schwartz et al. (Schwartz)	5,047,918	(filed Aug. 15, 1988) Sep. 10, 1991 (filed Dec. 19, 1988)
Miller	5,117,351	May 26, 1992 (filed Oct. 21, 1988)
Driscoll et al. (Driscoll)	5,142,681	Aug. 25, 1992 (effective filing date Jul. 7, 1986)

Claims 6, 7, 39, 43, 44, and 46 stand rejected under 35 U.S.C. § 103 as being unpatentable over Miller in view of Lowry and Mathur.

Claims 6, 7, 39, 43, 44, and 46 also stand rejected under 35 U.S.C. § 103 as being unpatentable over Driscoll in view of Lowry and Mathur.

Claims 6, 7, 39, 43, 44, and 46 further stand rejected under 35 U.S.C. § 103 as being unpatentable over Schwartz in view of Lowry and Mathur.

Reference is made to the Examiner's Answer (Paper No. 31, mailed July 20, 1995) and the Supplemental Examiner's Answer (Paper No. 33, mailed October 20, 1995) for the examiner's complete reasoning in support of the rejections, and to the appellant's Brief (Paper No. 30, filed May 1, 1995) and Reply Brief (Paper No. 32, filed August 16, 1995) for the appellant's arguments thereagainst.

OPINION

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As a preliminary matter, we note that appellant states on page 11 of the Brief that all of the claims stand or fall together with respect to each of the three rejections. We agree with appellant's grouping of the claims. Accordingly, we will consider claim 39 as representative and limit our discussion thereto. Claims 6, 7, 43, 44, and 46 will stand or fall with claim 39.

We have carefully considered the claims, the applied prior art references, and the respective positions articulated by the appellant and the examiner. As a consequence of our review, we will reverse the obviousness rejections of all of the claims.

In the rejections (Paper No. 21, pages 2-4), the examiner essentially asserts that for each rejection, since the references collectively teach updating of objects and using both a timestamp and a version number to identify an object, the method of claim 39 would have been obvious. The examiner, however, fails to show how each method step is disclosed in or would have been obvious in view of the references.

For the first rejection of the claims, the examiner relies on Miller, Lowry, and Mathur. Miller discloses (column

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3, lines 18-25 and 39-50) assigning to each node of a distributed computer network, an identifier which includes a version number and a time component. If two nodes obtain identifiers at the same time, the time component for one is adjusted so that each identifier is unique (see column 5, lines 18-40). Miller teaches (column 3, lines 65-68) that when software is updated, the version number is also updated. Miller does not describe a particular method for updating and therefore does not disclose any of the steps recited in claim 39, such as "systematically comparing each said replica attribute value for each said clearinghouse replica with said second directory attribute value for each of said directories" and "systematically comparing each said first directory attribute timestamp for each of said directories and said second directory attribute timestamp for each of said directories to said synchronization attribute timestamp."

Mathur also involves a network of computers. Mathur states (column 3, lines 48-53) that "[t]he network topological information is periodically maintained and updated to reflect changes in the configuration of the network" and that "the

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system software may be changed periodically to add new functions or enhancements." Mathur further discloses that:

When the system software is changed, it becomes desirable to perform a process . . . to update the non-volatile storage devices 103 in a predetermined subset of nodes in the network so that the new system software may be used to operate the CPU's 101 of the subset of nodes.

The process by which Mathur does the update involves loading the software into a source node and then distributing the new software to the other nodes. Mathur discloses neither the systematic comparisons of version numbers nor timestamps and systematic comparisons thereof.

Lowry relates to common databases for plural application programs. Lowry discloses tracking the various versions of data files as updates are made. The examiner contends (Answer, page 6) that the "synchronization timestamp of the claim is identical to the checkpoint of Lowry." The examiner further explains (Supplemental Answer, page 3) that:

[I]n Lowry, the snapshot file contains multiple versions of data and at checkpoint, the master data file must be synchronized to a specific version. . . . the contents of the master data file are replaced with a checkpoint version from the snapshot file In other words, a checkpoint version is a version at a **specific point in time**. Therefore,

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Lowry teaches a timestamp associated with the versions.

The examiner continues (Supplemental Answer, page 3),

A comparison of version numbers to locate a specific version is performed on column 33[,] lines 10-16. Although Lowry by itself teaches a timestamp associated with each version, when Lowry is combined for example with Miller, different versions of the macropages would be indicated with a version number **and** a timestamp, and one would locate the highest version having a specific timestamp which is less than the checkpoint timestamp.

As appellant (Reply Brief, page 3) explains, the "checkpoint disclosed in Lowry is a system for storing a version of a data structure with the purpose of restoring the data structure with the stored version should the data structure subsequently become corrupted. The checkpoint is therefore a type of **error recovery**." The checkpoint version replaces the master data structure when part or all of the data structure is lost or destroyed. Contrary to the examiner's assertion, Lowry does not disclose timestamps. The checkpoint occurs when needed and does not have a timestamp associated therewith. Lowry does not deal with propagating an update through a distributed network. Lowry does not disclose the method steps recited in claim 39 such as the systematic

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comparisons between the version numbers and the timestamps. Even if one were to interpret Lowry as the examiner has done and equate Lowry's checkpoint with appellant's synchronization timestamp, there is no suggestion in Lowry to compare the version numbers and the timestamps in a distributed network to systematically update the system. Lowry merely teaches replacing the master data structure when it is lost or damaged. Accordingly, Lowry does not cure the defects of Miller and Mathur.

In responding to appellant's arguments (Answer, page 5), the examiner states that Miller shows "associating timestamp and version number attributes with data objects, using these attributes to uniquely identify the objects and comparing these attributes to determine a version at a specific time." However, comparison in Miller is to determine if a particular identifier has been used before, so as not to assign the same identifier twice, not to determine whether or not an update should be performed on a specific node in a distributed network. Therefore, we cannot affirm the rejection of claim

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39 and all claims which stand or fall therewith (claims 6, 7, 43, 44, and 46) over Miller, Lowry, and Mathur.

For the second rejection, the examiner applies Driscoll in place of Miller. The examiner asserts that Driscoll teaches using a version number and a timestamp. Driscoll does not involve updating a network. Driscoll relates to translating computer programs from one language to another. At the end of a translation, a comment with a timestamp and identification of the particular version is added. As pointed out by appellant (Brief, page 21), a comment line in a program is merely to let the person using the program know what version he is using. The comment line is not used for determining whether or not an update should be performed on a specific node in a distributed network. As Driscoll discloses even less than Miller, and Lowry and Mathur are used the same as when combined with Miller, clearly the combination of Driscoll, Lowry, and Mathur, lacks disclosure of the claimed method steps even more than the first combination of references. Accordingly, we cannot sustain the rejection of claim 39 and all claims which stand or fall therewith (claims 6, 7, 43, 44, and 46) over Driscoll, Lowry, and Mathur.

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For the third rejection, the examiner substitutes Schwartz for Miller or Driscoll. Schwartz discloses a file management system, with various attributes assigned to each data file or node. Schwartz teaches (column 6, lines 20-25) that "the machine identifies a node according to the time (the 'version time') the node was created. When the machine modifies a node in response to user input, the version time identifying the node is updated to the current time." Further, "to access the contents of an existing node, the user may transmit a request to machine **14** to access ('check out') the node, identifying the node by its NodeIndex and Time parameters" (see column 10, lines 29-33). Thus, Schwartz discloses using the version number and version time as identifiers. Schwartz also states that "[t]he use of the Time parameter permits machine **14** to identify and resolve conflicts arising when different users attempt to modify the contents of the same node" (column 10, lines 39-42). "The log program 70 also synchronizes multi-user access to a graph" (column 17, lines 31-32).

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In response to appellant's argument that Schwartz does not disclose or suggest "any means for generating or modifying timestamps to synchronize the propagation of directory replicas throughout multiple nodes in a distributed system" (Brief, page 24), the examiner asserts (Answer, page 8) that "Schwartz shows the version number and timestamp attributes being compared and used for synchronization." The examiner, however, fails to explain how synchronizing multi-user access to a particular program renders obvious the steps of synchronizing an update in a distributed network. The mere use of the word "synchronization" does not render the processes the same. The comparisons in the claims differ from the comparisons done by Schwartz. For example, Schwartz does not disclose steps recited in claim 39 such as "systematically comparing each said replica attribute value for each said clearinghouse replica with said second directory attribute value for each of said directories" and "systematically comparing each said first directory attribute timestamp for each of said directories and said second directory attribute timestamp for each of said directories to said synchronization attribute timestamp." Since Lowry and Mathur fail to provide

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teachings for the claimed steps lacking in Schwartz (see above discussion of Lowry and Mathur), we cannot sustain the rejection of claim 39 and all claims which stand or fall therewith (claims 6, 7, 43, 44, and 46) over Schwartz, Lowry, and Mathur.

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CONCLUSION

In summary, the decision of the examiner rejecting claims 6, 7, 39, 43, 44, and 46 under 35 U.S.C. § 103 over each of Miller, Driscoll, and Schwartz, each in combination with Lowry and Mathur, is reversed.

REVERSED

KENNETH W. HAIRSTON)	
Administrative Patent Judge)	
)	
)	
)	
)	BOARD OF PATENT
LEE E. BARRETT)	APPEALS
Administrative Patent Judge)	AND
)	INTERFERENCES
)	
)	
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ANITA PELLMAN GROSS)	
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APG:clm

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