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opinion in support of the decision being entered today (1) was not written for publication in a law journal and (2) is not binding precedent of the Board.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. 19

UNITED STATES PATENT AND TRADEMARK OFFICE

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BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

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Ex parte AHMED H. ABDELMONEM and
ROBERT J.T. MORRIS

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Appeal No. 95-4609
Application 08/263,903[1]

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ON BRIEF

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Before JERRY SMITH, BARRETT and TORCZON, Administrative Patent Judges.

JERRY SMITH, Administrative Patent Judge.

DECISION ON APPEAL

[1] Application for patent filed June 20, 1994. According to the appellants, this application is a continuation of Application 07/810,072, filed December 19, 1991.

This is a decision on the appeal under 35 U.S.C. § 134 from the examiner's rejection of claims 1-7, which constitute all the claims in the application.

The disclosed invention pertains to a method and apparatus for predicting errors or failures in a communications network. Measurements of failures during different, non-uniform length intervals are determined by averaging the number of failures during multiple uniform intervals. A neural network is used to predict errors or failures based on these measurements.

Representative claim 1 is reproduced as follows:

1. A method for predicting errors or failures (i.e., “non-performances”) in a system for transmitting information across a communications channel in accordance with non-performances measured during periodic intervals, comprising the steps of:

determining the number of non-performances occurring during each of a plurality of non-uniform length, non-performance measurement intervals by computing the average of the non-performances over multiple uniform intervals;

selectively weighting the non-performance number for each non-uniform interval;

summing the selectively weighted non-performance numbers for the non-uniform intervals and applying a sigmoid function to yield a set of intermediate values;

selectively weighting the intermediate values;

summing the selectively weighted intermediate values and applying a sigmoid function to yield a set of predicted values and;

comparing the predicted values to threshold values and raising an alarm if any predicted value exceeds a corresponding threshold value.

The examiner relies on the following references:

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| Downes et al. (Downes) | 4,769,761 | Sep. 06, 1988 |
| Filkin | 5,046,020 | Sep. 03, 1991 |
| Chinnaswamy et al. (Chinnaswamy) | 5,062,055 | Oct. 29, 1991 |
| Bell et al. (Bell) | 5,223,827 | June 29, 1993 (filed May 23, 1991) |

Claims 1-7 stand rejected under 35 U.S.C. § 103. As evidence of obviousness the examiner offers Downes in view of Chinnaswamy, Filkin and Bell.

Rather than repeat the arguments of appellants or the examiner, we make reference to the brief and the answer for the respective details thereof.

OPINION

We have carefully considered the subject matter on appeal, the rejection advanced by the examiner and the evidence of obviousness relied upon by the examiner as support for the rejection. We have, likewise, reviewed and taken into consideration, in reaching our decision, the appellants' arguments set forth in the brief along with the examiner's rationale in support of the rejection and arguments in rebuttal set forth in the examiner's answer.

It is our view, after consideration of the record before us, that the evidence relied upon and the level of skill in the particular art would not have suggested to one of ordinary skill in the art the obviousness of the invention as set forth in claims 1-7. Accordingly, we reverse.

Appellants have indicated that for purposes of this appeal the claims will all stand or fall together as a single group [brief, page 2]. Consistent with this indication appellants have made no separate arguments with respect to any of the claims on appeal. Therefore, all the claims before us will stand or fall together. Note In re King, 801 F.2d 1324, 1325, 231 USPQ 136, 137 (Fed. Cir. 1986); In re Sernaker, 702 F.2d 989, 991, 217 USPQ 1, 3 (Fed. Cir. 1983). Accordingly, we will only consider the rejection against independent claim 1 as representative of all the claims on appeal.

In rejecting claims under 35 U.S.C. § 103, it is incumbent upon the examiner to establish a factual basis to support the legal conclusion of obviousness. See In re Fine, 837 F.2d 1071, 1073, 5 USPQ2d 1596, 1598 (Fed. Cir. 1988). In so doing, the examiner is expected to make the factual determinations set forth in Graham v. John Deere Co., 383 U.S. 1, 17, 148 USPQ 459, 467 (1966), and to provide a reason why one

having ordinary skill in the pertinent art would have been led to modify the prior art or to combine prior art references to arrive at the claimed invention. Such reason must stem from some teaching, suggestion or implication in the prior art as a whole or knowledge generally available to one having ordinary skill in the art. Uniroyal Inc. v. Rudkin-Wiley Corp., 837 F.2d 1044, 1051, 5 USPQ2d 1434, 1438 (Fed. Cir.), cert. denied, 488 U.S. 825 (1988); Ashland Oil, Inc. v. Delta Resins & Refractories, Inc., 776 F.2d 281, 293, 227 USPQ 657, 664 (Fed. Cir. 1985), cert. denied, 475 U.S. 1017 (1986); ACS Hospital Systems, Inc. v. Montefiore Hospital, 732 F.2d 1572, 1577, 221 USPQ 929, 933 (Fed. Cir. 1984). These showings by the examiner are an essential part of complying with the burden of presenting a prima facie case of obviousness. Note In re Oetiker, 977 F.2d 1443, 1445, 24 USPQ2d 1443, 1444 (Fed. Cir. 1992).

The examiner has made a reasonable effort to point out the teachings of the applied prior art references, to identify the differences between claim 1 and the applied prior art, and to explain why the invention of claim 1 would have resulted from an obvious modification of the applied prior art [final rejection, pages 2-5]. Appellants respond to the rejection by noting two

main deficiencies in the prior art combination applied by the examiner.

Appellants' first noted deficiency is that none of the applied prior art teaches the step of "determining the number of non-performances occurring during each of a plurality of non-uniform length, non-performance measurement intervals by computing the average of the non-performances over multiple uniform intervals" [brief, pages 5-7]. It would be useful to consider what this step means in relationship to the disclosed invention.

The specification uses the example of fifteen minutes, one hour, four hours and twenty-four hours as the plurality of non-uniform length, non-performance measurement intervals. The uniform interval in the disclosed example is fifteen minutes. The step quoted above means that the number of failures measured during a fifteen minute interval is used to compute an average number of failures over the one hour, four hour and twenty-four hour measurement intervals. Thus, the actual number of failures measured during one interval is used to compute the average number of failures over a plurality of different intervals. This technique is said to reduce the effects of noise when compared to

the technique of taking actual measurements of failures over each of the non-uniform length intervals [specification, page 4].

Downes teaches a method and apparatus for generally monitoring and predicting errors in a communications network. Chinnaswamy teaches a performance monitoring device in which measurements taken over a minor interval are averaged over a major interval. For example, Chinnaswamy teaches taking measurements every five seconds and maintaining a running average of these measurements over a two minute interval [column 8]. Chinnaswamy does not disclose using the five second measurements to compute a moving average over a plurality of different major intervals. Bell teaches an event monitoring system in which non-uniform measurement intervals are considered. Bell actually counts the number of events occurring during each of these non-uniform intervals. Filkin is cited only for the teachings related to the features of a neural network. The examiner's rejection basically relies on using a plurality of major intervals from Chinnaswamy, as suggested by Bell, in the Downes communications network. The examiner observes that this would provide greater versatility to the Downes device.

The critical point in considering the examiner's rejection is appellants' argument that even if the applied prior

art is combined exactly as proposed by the examiner, the invention of appellants' claim 1 does not result. Specifically, appellants argue that adding more major intervals in Chinnaswamy would not result in the determination of non-performances occurring during each of these different major intervals by averaging the non-performances over multiple minor intervals. In other words, Chinnaswamy would determine an average over a four minute interval, for example, by averaging all the measurements over the four minute interval rather than computing the average based on a smaller number of the measurements. Thus, each major interval in Chinnaswamy would have its own actual measurement as opposed to a computation based on a smaller number of measurements. We agree with appellants.

Although the language of the determining step of claim 1 is broad and is possibly subject to varying interpretations, the examiner has never indicated that this step is being interpreted in any manner other than what is intended by appellants. Thus, it appears that the examiner has correctly recognized that the determining step of claim 1 requires that a count of multiple uniform intervals (minor intervals) be used to compute an average of the counts over non-uniform intervals (major intervals). We

note that computing the average of the non-performances over multiple uniform intervals is not the same as counting the non-performances over the multiple uniform intervals.

It should first be observed that the portion of Chinnaswamy relied on does not deal with counting the number of non-performances at all. Chinnaswamy teaches computing the average value of a measured parameter over a longer interval. Thus, actual measurements must be made over every minor interval and a moving average of the measurement computed for each major interval. If this technique were applied to counting the number of non-performances rather than measuring parameter values, it would suggest counting the number of non-performances over each major interval as opposed to using a single count to determine the number of non-performances over all the non-uniform

intervals. Although the determining step of claim 1 is subject to broad interpretation, we agree with appellants that none of the applied prior art references teaches the thrust of appellants' invention which is to use a single number from a uniform interval to compute a plurality of average numbers over a plurality of non-uniform intervals.

Since we agree with appellants that the examiner's proposed combination of references still lacks the requisite teaching of the determining step of claim 1, we do not sustain the rejection of claim 1 as proposed by the examiner. Since all the claims stand or fall together, we do not sustain the rejection of any of claims 1-7. Therefore, the decision of the examiner rejecting claims 1-7 is reversed.

We note that the examiner has indicated that because appellants had proposed amendments to the claims to overcome the prior art rejection that they have admitted that "the prior art does read on the claimed invention" [answer, page 5]. We simply observe that an applicant is not estopped from changing his strategy during the course of good faith prosecution before the examiner. A willingness to amend the claims does not prevent appellants from challenging the rejection as they have done here.

REVERSED

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| JERRY SMITH<br>Administrative Patent Judge | ) |
| LEE E. BARRETT<br>Administrative Patent Judge | ) BOARD OF PATENT<br>) APPEALS AND<br>) INTERFERENCES |
| RICHARD TORCZON<br>Administrative Patent Judge | ) |

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