

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(2) is not binding precedent of the Board.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. 22

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

Ex parte MARK A. ESSLINGER and ALLAN D. CLARKE and
ROBERT M. HOWARD and DOUGLAS K. MATCHETT and
DOUGLAS M. NEUSE and JAMES R. PALMER and
CAROLYN W. WEST

Appeal No. 95-5061
Application 07/825,979¹

HEARD: December 09, 1997

Before FLEMING, LEE and TORCZON, **Administrative Patent Judges.**
FLEMING, **Administrative Patent Judge.**

DECISION ON APPEAL

This is a decision on appeal from the final rejection of
claims 1 through 5, 7 and 8. Claim 6 has been canceled.

The invention pertains to computer-based debugging of

¹Application for patent filed January 27, 1992.

parallel computer processes and computer simulation models of parallel process systems, particularly to dynamically animating a computer-based simulation model on a display for purposes of controlling, observing and debugging the executing simulation model or the parallel process system itself.

Independent claims 1 is reproduced as follows:

1. A method of animating a system having parallel processes for the purpose of debugging the system, the system being modeled as a hierarchical collection of directed process execution graphs, said graphs representing sub-models of the system and having collections of nodes and arcs, and the parallel processes as transactions, the nodes indicating manipulation of physical or logic resources or other process steps in a transaction's life, and the arcs indicating paths along which transactions may flow from one node to another; the method comprising the steps of:

(a) executing a computer process having parallel execution threads representing parallel processes in a system;

(b) selecting one of the execution threads for animation of preselected events during the execution thread, the execution thread being represented by a transaction in a model of the system, the model including one or more hierarchial directed process execution graphs representing one or more sub-models of the system;

(c) animating the selected execution thread on a user's display screen by displaying a graph in which the transaction is located, moving a symbol on the displayed graph representing the single transaction along arcs connecting nodes to which the transaction flows, and terminating animation of the selected execution thread when the transaction is blocked by the occurrence of a predefined event;

(d) displaying user-defined inspection data on said

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user's display screen, wherein said inspection data comprises user-selected program operating parameters from user-selected nodes and;

(e) selecting a next transaction representing another of the parallel execution threads for animation and animating the next transaction until it blocks.

The references relied on by the Examiner are as follows:

Luke 5,168,554 Dec. 1, 1992

Georg Raeder, "A Survey of Current Graphical Programming Techniques", Computer (published 1985 by IEEE Press).

Claims 1 through 5, 7 and 8 stand rejected under 35 U.S.C. § 103 as being unpatentable over Luke and Raeder.

Rather than repeat the arguments of Appellants or the Examiner, we make reference to the briefs² and the answer for the details thereof.

OPINION

After a careful review of the evidence before us, we do not agree with the Examiner that claims 1 through 5, 7 and 8 are properly rejected under 35 U.S.C. § 103 as being unpatentable over Luke and Raeder.

²Appellants filed an appeal brief on February 17, 1995. We will refer to this appeal brief as simply the brief. Appellants filed a reply appeal brief on July 24, 1995. We will refer to this reply appeal brief as the reply brief. The Examiner stated in the Examiner's letter, mailed August 28, 1995 that the reply brief has been entered and considered but no further response by the Examiner is deemed necessary.

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The Examiner has failed to set forth a *prima facie* case. It is the burden of the Examiner to establish why one having ordinary skill in the art would have been led to the claimed invention by the express teachings or suggestions found in the prior art, or by implications contained in such teachings or suggestions. *In re Sernaker*, 702 F.2d 989, 995, 217 USPQ 1, 6 (Fed. Cir. 1983). "Additionally, when determining obviousness, the claimed invention should be considered as a whole; there is no legally recognizable 'heart' of the invention." *Para-Ordnance Mfg. v. SGS Importers Int'l, Inc.*, 73 F.3d 1085, 1087, 37 USPQ2d 1237, 1239 (Fed. Cir. 1995), *citing W. L. Gore & Assocs., Inc. v. Garlock, Inc.*, 721 F.2d 1540, 1548, 220 USPQ 303, 309 (Fed. Cir. 1983), *cert. denied*, 469 U.S. 851 (1984).

Appellants argue on pages 6-10 of the brief and pages 2-6 of the reply brief that neither Luke nor Raeder teaches or suggests steps (a), (b) or (c) as recited in Appellants' claim 1. In particular, Appellants' argue that the references fail to teach that the executing threads be represented by a model of the system or that a method step of animating the selected executing thread by moving a symbol for a transaction along arcs connecting nodes until blocked by the occurrence of an event.

In the answer, the Examiner argues that Luke teaches

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modeling to the extent claimed. The Examiner argues that Appellants' specification on page 11, lines 9-10, defines a computer system model as a "software module, a subprogram." The Examiner argues that by this definition Luke teach tasks and subtasks which meets Appellants' claimed "model".

Our reviewing court states in *In re Zletz*, 893 F.2d 319, 321, 13 USPQ2d 1320, 1322 (Fed. Cir. 1989) that "claims must be interpreted as broadly as their terms reasonably allow." Moreover, when interpreting a claim, words of the claim are generally given their ordinary and accustomed meaning, unless it appears from the specification or the file history that they were used differently by the inventor. *Carroll Touch, Inc. v. Electro Mechanical Sys., Inc.* 15 F.3d 1573, 1577, 27 USPQ2d 1836, 1840 (Fed. Cir. 1993). Although an inventor is indeed free to define the specific terms used to describe his or her invention, this must be done with reasonable clarity, deliberateness, and precision. *In re Paulsen* 30 F.3d 1475, 1480, 31 USPQ2d 1671, 1674 (Fed. Cir. 1994).

Appellants argue on pages 3 and of the reply brief that Appellants' specification on page 11, lines 9 and 10 does not define a model but defines a node which is part of a larger

software program that makes up the model. Appellants do not argue that a model is defined differently by the inventors.

We note that the ordinary usage of the term "model" in the software field is a "mathematical or graphical representation of a real-world situation or object."³ We fail to find that the Examiner has established that Luke teaches executing a computer process having parallel execution threads representing parallel processes in a system or selects one of the execution threads for animation of preselected events during the execution thread, the execution thread being represented by a transaction and a model of the system, the model including one or more hierarchical-directed process execution graphs representing one or more sub-models of the system as recited in Appellants' claim 1.

Appellants further argue that neither Luke nor Raeder teaches animating and blocking of a specific transaction as recited in method step (c) as recited in Appellants' claim 1. The Examiner has pointed to Raeder, page 20, column 2, lines 18 for this teaching.

Upon a closer reading of the Raeder, we fail to find that the prior art provides any evidence that suggests the limitation of "animating the selected execution thread on a user's display

³Computer Dictionary, Microsoft press, second edition, 1994.

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screen by displaying a graph in which the transaction is located, moving a symbol on the displayed graph representing the single transaction along arcs connecting nodes to which the transaction flows, and terminating animation of the selected execution thread when the transaction is blocked by the occurrence of a pre-defined event" as recited in Appellants' claim 1. On page 20, Raeder discloses program visualization in which the system displays graphics that represent code and data structures. Raeder fails to teach or suggest animating a selected execution thread by moving a symbol on along an arc connecting nodes to which the transaction flows and terminating the animation when the transaction is blocked by an event.

The Federal Circuit states that "[t]he mere fact that the prior art may be modified in the manner suggested by the Examiner does not make the modification obvious unless the prior art suggested the desirability of the modification." ***In re Fritch***, 972 F.2d 1260, 1266 n.14, 23 USPQ2d 1780, 1783-84 n.14 (Fed. Cir. 1992), ***citing In re Gordon***, 733 F.2d 900, 902, 221 USPQ 1125, 1127 (Fed. Cir. 1984). "Obviousness may not be established using hindsight or in view of the teachings or suggestions of the inventor." ***Para-Ordnance Mfg. v. SGS Importers Int'l***, 73 F.3d at 1087, 37 USPQ2d at 1239, ***citing W. L. Gore & Assocs., Inc. v.***

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Garlock, Inc., 721 F.2d at 1551, 1553, 220 USPQ at 311, 312-13.

We further note that the remaining independent claim, claim 5, recites the following limitation:

means for carrying out a discrete event simulation process have multiple parallel transactions by execution of one transaction at a time until the transaction is blocked by an occurrence of a blocking event, the means for carrying out the discrete event simulation process including means for generating a stream of trace messages, the trace messages describing occurrences of pre-select events during execution of a first transaction and the switching of the discrete event simulation process to a next transaction upon occurrence of a blocking event to the first transaction, wherein the means for carrying out a discrete event simulation includes means for controlling and execution of, and changing a state of and displaying the state of the simulation process in response to commands received from graphical user interface means.

For the same reasons above, we find that the Examiner has not carried the burden of establishing that either Luke or Raeder, independently or together, teaches the above limitations.

Therefore, we have not sustained the Examiner's rejection of Appellants' claims.

In view of the foregoing, the decision of the Examiner rejecting claims 1 through 5, 7 and 8 is reversed.

REVERSED

MICHAEL R. FLEMING)

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