Exhibit 20

LEXSEE 2002 US DIST LEXIS 27577

Caution
As of: May 21, 2007
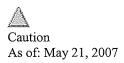
NATIONAL INSTRUMENTS CORP. vs. THE MATHWORKS, INC,

CIVIL ACTION NO. 2:01CV11

UNITED STATES DISTRICT COURT FOR THE EASTERN DISTRICT OF
TEXAS, MARSHALL DIVISION

2002 U.S. Dist. LEXIS 27577

May 24, 2002, Decided
May 29, 2002, Filed

SUBSEQUENT HISTORY: Related proceeding at *Nat'l Instruments Corp. v. SoftWire Tech., LLC, 2003 U.S. Dist. LEXIS 26952 (E.D. Tex., May 9, 2003)*
Judgment entered by, Injunction granted at *Nat'l Instruments Corp. v. Mathworks, Inc., 2003 U.S. Dist. LEXIS 25863 (E.D. Tex., June 23, 2003)*

DISPOSITION: Court construed Plaintiff's patents.

CASE SUMMARY:

PROCEDURAL POSTURE: Plaintiff patent holder filed suit against defendant alleged infringer for infringement of 81 claims in four United States patents. At issue was the proper construction of a number of common or similar claim terms contained in the four patents.

OVERVIEW: The patent holder sought a broad construction of the claim terms and insisted that the court should not limit the claim terms with features of the preferred embodiment. The infringers urged that the specifications in the patents revealed only a single embodiment of the invention and that the patent holder's failure to disclose other embodiments restricted the meanings of the disputed claim terms to those found in the specifications. The parties' single biggest dispute was over the meaning of the term "data flow diagram." The court concluded that "data flow diagram" as used in the patents in suit, incorporated the following four semantic limitations: the order of operations was not completely specified by the user; the order of operations was implied by data interdependencies; a node may only execute after all necessary

inputs have become available; and outputs were generated after a node completes execution. Next, the court construed "front panel" as a graphical user interface that is separate and apart from the associated data flow diagram and that displays inputs and output controls, where there is at least one input control and at least one output control in the front panel.

OUTCOME: The court construed the disputed terms.

CORE TERMS: flow diagram, specification, front, embodiment, display, inventors, output, input, patent, invention, graphical, diagram, patentee, examiner, construe, node, semantic, variable, means-plus-function, corresponding, user, variable-icon, iteration, drafted, window, appended, iteration-icon, programming, scheduling, icon

LexisNexis(R) Headnotes

Civil Procedure > Trials > Jury Trials > Province of Court & Jury
Patent Law > Claims & Specifications > Claim Language > General Overview
Patent Law > Infringement Actions > Exclusive Rights > Manufacture, Sale & Use
[HN1] A claim in a patent provides the metes and bounds of the right which the patent confers on the patentee to exclude others from making, using or selling the protected invention. Claim construction is an issue of law for the court to decide.

Patent Law > Claims & Specifications > Claim Language > General Overview
Patent Law > Claims & Specifications > Enablement Requirement > Standards & Tests
Patent Law > Infringement Actions > Claim Interpretation > General Overview
[HN2] To ascertain the meaning of patent claims, a court looks to three primary sources: the claims, the specification, and the prosecution history. Under the patent law, the specification must contain a written description of the invention that enables one of ordinary skill in the art to make and use the invention. A patent's claims must be read in view of the specification, of which they are a part. For claim construction purposes, the description may act as a sort of dictionary, which explains the invention and may define terms used in the claims. One purpose for examining the specification is to determine if the patentee has limited the scope of the claims.

Patent Law > Claims & Specifications > Description Requirement > General Overview
Patent Law > Infringement Actions > Claim Interpretation > General Overview
Patent Law > U.S. Patent & Trademark Office Proceedings > Reissues > General Overview
[HN3] In the context of patent claim construction, it is the function of the claims, not the specifications, to set forth the limits of the patentee's claims. Otherwise, there would be no need for claims. The patentee is free to be his own lexicographer, but any special definition given to a word must be clearly set forth in the specification. And, although the specifications may indicate that certain embodiments are preferred, particular embodiments described in the specification will not be read into the claims when the claim language is broader than the embodiments.

Patent Law > Claims & Specifications > Claim Language > General Overview
Patent Law > Infringement Actions > Claim Interpretation > General Overview
[HN4] In the context of patent claim construction, case law is clear that an applicant is not required to describe in the specification every conceivable and possible future embodiment of his invention. In short, it is the claims that measure the invention, as informed by the specification.

Patent Law > Claims & Specifications > Claim Language > General Overview

Patent Law > Infringement Actions > Claim Interpretation > General Overview
[HN5] In the context of patent claim construction, when a patentee uses a claim term throughout the entire specification, in a manner consistent with only one meaning, he has defined that term by implication.

Patent Law > Claims & Specifications > Claim Language > General Overview
Patent Law > Claims & Specifications > Enablement Requirement > General Overview
Patent Law > Infringement Actions > Claim Interpretation > General Overview
[HN6] In the context of patent claim construction, the construction given to claim terms depends on the record in a particular case. A patentee is free to be his own lexicographer and may explicitly or implicitly define a claim term in a manner at odds with or more narrowly than the term's ordinary meaning to one skilled in the art. But that is simply another canon of claim construction. It is not a hard and fast rule that requires a court to limit claim language to the single embodiment disclosed in the patent. In short, it is no absolute answer to any claim construction question that the patent discloses only a single embodiment. But neither will it do to ignore the intrinsic record in favor of extrinsic dictionary definitions. The issues can be close, but in the end the answer depends on an assessment of the intrinsic (and, if necessary, the extrinsic) evidence in each case, in light of the canons of construction. The United States Court of Appeals for the Federal Circuit stated it nicely when it noted there is sometimes a fine line between reading a claim in light of the specification, and reading a limitation into the claim from the specification.

Patent Law > Claims & Specifications > Claim Language > General Overview
Patent Law > Infringement Actions > Claim Interpretation > General Overview
Patent Law > Jurisdiction & Review > Subject Matter Jurisdiction > Appeals
[HN7] In the context of patent claim construction, the United States Court of Appeals for the Federal Circuit has held that the written description of the preferred embodiments can provide guidance as to the meaning of the claims, thereby dictating the manner in which the claims are to be construed, even if the guidance is not provided in explicit definitional format.

Evidence > Inferences & Presumptions > General Overview
Patent Law > Claims & Specifications > Description Requirement > General Overview

Patent Law > Claims & Specifications > Enablement Requirement > General Overview
[HN8] In the context of patent claim construction, where a claim does not use the word "means," it is presumed not to be drafted in means-plus-function form.

Civil Procedure > Appeals > Standards of Review > De Novo Review
Patent Law > Claims & Specifications > Description Requirement > General Overview
Patent Law > Jurisdiction & Review > Subject Matter Jurisdiction > Appeals
[HN9] In the context of patent claim construction, the rule in the United States Court of Appeals for the Federal Circuit is that each claim must be independently reviewed to determine whether it is subject to *35 U.S.C.S. § 112,* para. 6. There is no per se rule that prohibits a claim drafter from using means-plus-function format when drafting elements of methods claims, although means-plus-function elements are generally found in apparatus claims. Moreover, use of the word "means" creates a presumption that § 112, para. 6 applies.

COUNSEL: [*1]   For Robert M Parker, Mediator: Robert M Parker, Parker Clayton, Tyler, TX.

For National Instruments Corporation, Plaintiff: Samuel Franklin Baxter, Attorney at Law, Marshall, TX. Lewis T LeClair, McKool Smith, Dallas, TX. Mike McKool, Jr, McKool Smith -- Dallas, Dallas, TX.

For Math Works Inc, The, Defendant: Kenneth Robert Adamo, Jones Day, Dallas, TX. Carl R Roth, Law Office of Carl R Roth, Marshall, Tx. Hilda Contreras Galvan, Jones Day -- Dallas, Dallas, TX. Mark Nolan Reiter, Jones Day, Dallas, TX.

For Hugh Kress, Movant: Hugh Kress, Pro Se, Winstead Sechrest & Minick, Houston, TX.

For Math Works Inc, The, Counter Claimant: Kenneth Robert Adamo, Jones Day, Dallas, TX. Carl R Roth, Carl R Roth, Law Office of Carl R Roth, Marshall, Tx. Hilda Contreras Galvan, Jones Day -- Dallas, Dallas, TX. Mark Nolan Reiter, Jones Day, Dallas, TX.

For National Instruments Corporation, Counter Defendant: Samuel Franklin Baxter, Attorney at Law, Marshall, TX. Lewis T LeClair, McKool Smith, Dallas, TX. Mike McKool, Jr, McKool Smith -- Dallas, Dallas, TX.

JUDGES: T. JOHN WARD, UNITED STATES DISTRICT JUDGE.

OPINION BY: T. JOHN WARD

OPINION:

MEMORANDUM OPINION AND ORDER

On April 4, 2002, the [*2] court held a claim construction hearing in this matter. After considering the claim construction memoranda, the law, the intrinsic and extrinsic evidence, together with the arguments of counsel, the court is of the opinion that the following order should issue.

1. Introduction.

The plaintiff in this case is National Instruments Corporation ("National"). National accuses The Mathworks, Inc. ("Mathworks") of infringing eighty-one (81) claims contained in four United States Patents. At issue is the proper construction of a number of common or similar claim terms contained in the four patents. n1 The parties have attempted to group those terms into certain categories and have represented that the court's resolution of certain specific terms will resolve the claim construction disputes in this case. The court's claim construction, set forth below, will address the claims to correspond roughly with the groupings contained in National's opening brief on claim construction.

> n1 The four patents-in-suit are *U.S. Patent No. 4,901,221* ("*'221 Patent*"); *U.S. Patent No. 4,914,568* ("*'568 Patent*"); *U.S. Patent No. 5,291,587* ("*'587 Patent*"); and *U.S. Patent No. 5,301,336* ("*'336 Patent*").

[*3]

2. Legal principles relevant to claim construction.

[HN1] "A claim in a patent provides the metes and bounds of the right which the patent confers on the patentee to exclude others from making, using or selling the protected invention." *Burke, Inc. v. Bruno Indep. Living Aids, Inc., 183 F.3d 1334, 1340 (Fed. Cir. 1999).* Claim construction is an issue of law for the court to decide. *Markman v. Westview Instruments, Inc., 52 F.3d 967,970-71 (Fed. Cir. 1995)*(en banc), *aff'd, 517 U.S. 370, 134 L. Ed. 2d 577, 116 S. Ct. 1384 (1996).*

[HN2] To ascertain the meaning of claims, the court looks to three primary sources: the claims, the specification, and the prosecution history. *Markman, 52 F.3d at 979.* Under the patent law, the specification must contain a written description of the invention that enables one of ordinary skill in the art to make and use the invention. A patent's claims must be read in view of the specification, of which they are a part. *Markman, 52 F.3d at 979.* For

claim construction purposes, the description may act as a sort of dictionary, which explains the invention and may define terms used in the claims. [*4] *Id.* "One purpose for examining the specification is to determine if the patentee has limited the scope of the claims." *Watts v. XL Sys., Inc., 232 F.3d 877, 882 (Fed. Cir. 2000).*

Nonetheless,[HN3] it is the function of the claims, not the specifications, to set forth the limits of the patentee's claims. Otherwise, there would be no need for claims. *SRI Int'l, v. Matsushita Elec. Corp., 775 F.2d 1107, 1121 (Fed. Cir. 1985)*(en banc). The patentee is free to be his own lexicographer, but any special definition given to a word must be clearly set forth in the specification. *Intellicall, Inc. v. Phonometrics, 952 F.2d 1384, 1388 (Fed. Cir. 1992).* And, although the specifications may indicate that certain embodiments are *preferred,* particular embodiments described in the specification will not be read into the claims when the claim language is broader than the embodiments. *Electro Med. Sys., S.A. v. Cooper Life Sciences, Inc., 34 F.3d 1048, 1054 (Fed. Cir. 1994).*

The parties to this case sit at opposite poles of a legal dispute that they say pervades the court's claim construction approach. They argue over the applicability [*5] of the so-called "single embodiment" rule-a rule that counsels the court to limit construction of disputed claim terms to the single embodiment set forth in the specification. The plaintiff seeks a broad construction of the claim terms and insists that the court should not limit the claim terms with features of the preferred embodiment. The defendant, by contrast, urges that the specifications in the patents reveal only a single embodiment of the invention and that the patentee's failure to disclose other embodiments restricts the meanings of the disputed claim terms to those found in the specifications.

Federal Circuit cases provide support for both positions. The plaintiff's position finds support in cases such as *Rexnord Corp. v. Laitram Corp., 274 F.3d 1336, 1344 (Fed. Cir. 2001).* In *Rexnord,* the court said that [HN4] "our case law is clear that an applicant is not required to describe in the specification every conceivable and possible future embodiment of his invention. . . . In short, it is the claims that measure the invention, as informed by the specification." *Id.; see also SRI, Int'l, 775 F.2d at 1121 n. 14* (noting "that a specification describes [*6] only one embodiment does not require that each claim be limited to that one embodiment").

Federal Circuit cases also provide some support for the defendant's argument. Mathworks relies heavily on *Bell Atlantic Network Services, Inc. v. Covad Communications Group, Inc., 262 F.3d 1258 (Fed. Cir. 2001).* In *Bell Atlantic,* the court very carefully considered a patentee's use of specific terms throughout the only em-

bodiment contained in the patent's specification. That court applied a canon of claim construction that provides [HN5] "when a patentee uses a claim term throughout the entire specification, in a manner consistent with only one meaning, he has defined that term by implication." *Id. at 1271.* The court concluded, after a thorough review of the intrinsic record, that the patentee had implicitly restricted claim terms that admitted a broader construction to one of skill in the art. n2

> n2 Mathworks also relies on cases such as *Watts v. XL Systems, Inc., 232 F.3d 877 (Fed. Cir. 2000)*; *Toro Co. v. White Consolidated Industries, Inc., 199 F.3d 1295 (Fed. Cir. 1999)*; and *Wang Laboratories v. America Online, Inc., 197 F.3d 1377 (Fed. Cir. 1999).*

[*7]

Neither the plaintiff's nor the defendant's brief accurately sums up the law in this area. Under the plaintiff's reading of *Rexnord,* limiting the scope of claim terms to the sole or preferred embodiment would be improper any time a patentee could locate a broader dictionary definition to append to the relevant claim terms. Conversely, a single embodiment rule, if it existed, would compel the court to limit unnecessarily claim terms any time a specification disclosed only one embodiment. The law does not go so far in either direction.

Rexnord and *Bell Atlantic* are important not because they confirm or reject any "single embodiment rule," but because they illustrate plainly that [HN6] the construction given to claim terms depends on the record in a particular case. *Rexnord* collects the general rules and applies them based on the specific intrinsic record. *Bell Atlantic* does the same when it illustrates one rule of claim construction: A patentee is free to be his own lexicographer and may explicitly or *implicitly* define a claim term in a manner at odds with or more narrowly than the term's ordinary meaning to one skilled in the art. n3 But that is simply another canon [*8] of claim construction. It is not a hard and fast rule that requires a court to limit claim language to the single embodiment disclosed in the patent. In short, it is no absolute answer to any claim construction question that the patent discloses only a single embodiment. But neither will it do to ignore the intrinsic record in favor of extrinsic dictionary definitions. The issues can be close, but in the end the answer depends on an assessment of the intrinsic (and, if necessary, the extrinsic) evidence in each case, in light of the canons of construction. The Federal Circuit stated it nicely when it noted "there is sometimes a fine line between reading a claim in light of the specification, and reading a limitation into the claim from the specification." *Comark Communications, Inc. v. Harris Corp., 156 F.3d at 1186-87 (Fed. Cir. 1998).* The court

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now turns to the disputed terms contained in the patents-in-suit.

> n3 [HN7] The Federal Circuit has held that the written description of the preferred embodiments "can provide guidance as to the meaning of the claims, thereby dictating the manner in which the claims are to be construed, even if the guidance is not provided in explicit definitional format." *SciMed Life Sys., Inc. v. Advanced Cardiovascular Sys., Inc., 242 F.3d 1337, 1344 (Fed. Cir.2001).*

[*9]

3. Terms in Dispute.

A. Data Flow Diagram.

The parties' single biggest dispute is over the meaning of the term "data flow diagram." n4 The parties now agree that the term "data flow diagram" means more than simply a graphical construct that displays a procedure. n5 The parties also agree that the term "data flow diagram" incorporates certain semantic principles. n6 The claim language does not specifically contain the semantic principles but the specifications are replete with references to these concepts.

> n4 The parties agree that "data flow diagram" is used interchangeably throughout the four patents-in-suit with "block diagram," "diagram," "diagram display . . . graphically displays data flow," "user defined data flow diagram," and "diagram display which displays . . . graphical representation and . . . data flow structure representation."

> n5 Although National initially asserted that "data flow diagram" meant "a block diagram that displays lines that connect function blocks and indicates that data produced by one block is used by another block," in its reply brief and at the claim construction hearing, National abandoned that construction in favor of one that contained certain semantic limitations. Mathworks, as the briefing evolved, settled on a definition similar to the one National proposed in its reply brief.

[*10]

> n6 There are two aspects to any computer programming language: syntax and semantics. The syntax defines how the program is expressed

and the semantics define what those expressions mean.

The parties' proposed definitions vary slightly. National proposes that the court's construction of data flow diagram should incorporate four semantic principles:

> 1. Nodes are connected by lines indicating data dependency;
>
> 2. Nodes execute after data is available;
>
> 3. The complete order of execution is not necessarily specified by the user; and
>
> 4. Nodes which do not depend on each other for data could be executed in any order, or in parallel on parallel-processing hardware.

Mathworks urges the court to construe data flow diagram as incorporating the following four semantic principles:

> 1. The order of operations is not specifically specified by the user;
>
> 2. The order of operations is implied by data interdependencies;
>
> 3. A node may only execute once it has received all necessary inputs; and
>
> 4. All outputs are generated after a node executes.

The question is [*11] how one skilled in the art would construe "data flow diagram" in the context of these patents in light of the intrinsic evidence. In this case, the inventors used the terms "data flow" and "data flow diagram," throughout the specifications, the claims, and in the descriptions of the inventions in a manner that incorporates very specific characteristics. The court adopts these characteristics and concludes that "data flow diagram" as used in the patents in suit, incorporates the following four semantic limitations:

> 1. the order of operations is not completely specified by the user;
>
> 2. the order of operations is implied by data interdependencies;

3. a node may only execute after all necessary inputs have become available; and

4. outputs are generated after a node completes execution.

The intrinsic record supports this approach. First, the court is mindful that it is not addressing data flow diagramming in the abstract. The inventors made it plain that their inventions sought to make data flow programming friendlier while recognizing that conventional data flow diagramming had certain shortcomings. Meanwhile, these inventors sought to preserve certain advantages [*12] -- namely speed -- that resulted from data flow programming's parallel data processing method. In the Background of the Invention portion of the patents, the inventors state that "[a] *general* type of program design technique involves data flow diagramming." (*'221 Patent,* Col. 3, 11. 18-19)(emphasis added). The inventors noted advantages of data flow programming -- namely speed -- but recognized that data flow diagramming had difficulty representing certain functions and was difficult to implement. *Id.* at Col. 3, 11. 22-37. The inventors recognized a need for a system which employed data flow techniques and overcame the difficulties in representing conditional and iterative functions. They urged that "the present *invention* meets these needs." Id. at Col. 3, 11. 41-47 (emphasis added). In these passages, the inventors are not referring to the preferred or sole embodiment of the invention but to the invention itself.

The written description of the invention sets forth the appropriate semantic principles. To be sure, the written description provides no explicit definition of the terms "data flow" and "data flow diagram;" however, these terms are used throughout the description [*13] in a consistent way and they have but one meaning in the context of these patents. The inventors taught that "data flow programming typically involves an ordering of operations which is not specifically specified by a user but which is implied by data interdependencies." *Id.* at Col. 3, 11. 19-22. Moreover, the inventors made repeated statements to the effect that the concept of "data flow" means that a node may only execute after all necessary inputs have become available and outputs are generated after a node completes execution. *See, e.g., 221 Patent,* Col. 10, 11. 13-18 ("in accordance with data-flow principles, used in the preferred embodiments of the present invention, *the sequence structure does not begin execution until all incoming signal paths have data available, and none of the outgoing signal paths produce data until all diagrams have completed execution.*")(emphasis added). The description goes on to illustrate that "in accordance with data flow principles, *all inputs must be available* to start execution of an iteration loop. Furthermore, *all outputs are generated after execution completes." 221 Patent,* Col.

11, 11. 15-18 (emphasis added). At least [*14] three other portions of the specifications provide like limitations. *E.g., 221 Patent,* Col. 11, 11. 43-46; Col. 12, 11. 18-22; Col. 13, 11. 17-30. The specifications demonstrate that the inventors used the term data flow diagram to include the various semantic principles included in the court's construction. A review of the claim language together with the intrinsic evidence discloses no ambiguity; accordingly, the court need not consult any extrinsic definitions.

B. Front Panel.

The parties next dispute the meaning of the term "front panel." National contends that the term "front panel" has an ordinary and accepted meaning in the instrumentation and test measurement fields. According to National, the term "front panel" means "a graphical user interface that is accessible during execution and comprised of at least one interface element to interactively assign and display values of an input variable and at least one interface element to display values of a resulting output variable." Mathworks urges a more narrow construction. According to Mathworks, the term "front panel" means "a graphical representation of the faceplate of an instrument that is displayed in a window [*15] that is separate and distinct from the window containing the associated data flow diagram, and that can only display input and output controls, where there is at least one input control and at least one output control in the front panel, each of which has a corresponding representation in the data flow diagram."

The court adopts neither party's construction. The problem with National's construction is that the definition derives largely from the instrumentation and test measurement fields, and that is not the relevant art. Furthermore, National's construction ignores certain statements made by during prosecution by the prosecuting attorney to the examiner. The problem with Mathworks' definition is that it is divorced from certain claim terms and aspects of the preferred embodiment. In addition, Mathworks makes too much out of the statements made to the examiner.

The claim language refers to the front panel and the data flow diagram as different concepts. The language of the claims implies, but does not necessarily require, the front panel to be separate from the data flow diagram. For instance, dependent claim 2 in the *221 patent* claims the method of claim 1 and, in addition, the [*16] step of "assembling on the screen a first front panel including the at least one first input variable-icon and the at least one first output variable-icon." If the front panel and the data flow diagram were the same, then dependent claim 2 would be redundant.

To the extent there was any doubt, the inventors confirmed a separateness requirement in the prosecution history of two of the patents. During the prosecution of the

587 patent, the examiner confronted the inventors with various prior art which, according to the examiner, compelled rejection of the then-pending claims.

During prosecution, the inventors were confronted with the Kossiakoff patent as prior art. The examiner rejected all of the pending claims of the *587 patent* in part because of Kossiakoff. In doing so, the examiner found that one of ordinary skill in the art would have recognized that the procedure display in the Kossiakoff patent (i.e. the counterpart to the data flow diagram contained in the patents-in-suit) could be used as a display means "responsive to user inputs for displaying at least one input variable . . . and . . . at least one output variable."

In response to the examiner's determination, the inventors' [*17] prosecuting attorney distinguished the claims of the *587 patent* by asserting, *inter alia*:

> The display the Examiner refers to is the *procedure display* of the Kossiakoff reference. As mentioned above, it has no input and output variable icon which are displayed on *a panel apart from the procedure display*. Kossiakoff would have no need for *such panel* as he was not concerned with emulating an instrument or doing other real time data processing.

(emphasis added).

By this passage, the attorney argued that the claims of the *587 patent* were patentable over Kossiakoff on the grounds that the invention set forth in the *587 patent* contained a panel that displayed input and output variable icons and that such panel was something apart from the procedure display. This distinction is important. The inventors touted this invention, including its front panel, on the grounds that the system and method of the invention permitted the computer-aided modeling of a process using graphical techniques. This led to easier comprehension by the target group--persons who did not possess specialized skills in computer programming techniques. The inventors noted that "the use [*18] of a computer-generated image of a front panel display permits a user to easily understand how data is provided to a system being modeled and how data is provided by the system." The front panel concept was important because it allowed unskilled persons to interface with the virtual instrument through familiar means -- the front panel.

In addition, during prosecution of the *336* application, the examiner rejected all of the pending claims on the grounds that a second piece of prior art, the Dunn patent, showed the step of assembling a panel on the display.

National's attorney urged reconsideration of the examiner's rejection and asserted that the chart area noted by the examiner was "used for assembling flow diagrams" and that "*it is unrelated* to the panel recited in all independent claims in the present application." The court requires that the front panel be separate and apart from the associated data flow diagram. National concedes as much in its reply brief, by urging that the front panel must be "an entity apart from (i.e. other than' or besides') the data flow diagram and that it comprises an input variable-icon and an output variable-icon." (National's Reply Brief, p. [*19] 34).

Mathworks further urges that the attorney's statements and the specifications compel the conclusion that the front panel and the data flow diagram must be contained in separate windows. The court disagrees. The attorney's remarks made no mention of the term "window." National cannot re-capture what it has disclaimed; however, the court will not hold that National disclaimed more than what its attorneys actually represented to the examiner.

Neither do the specifications require a more restricted construction of the term "front panel." It is true the two do not coexist in the same window in the preferred embodiment set forth in the application. The specifications plainly indicate that, in the embodiment disclosed, the front panel and the data flow diagram reside in separate windows. But the inventors knew how to use the term "window," and used it repeatedly throughout the specifications. The claim language, though, makes no use of the term. Unlike in the case of the inventors' repeated use of very specific data flow semantics, the court is not convinced that the inventors explicitly or implicitly required the front panel to reside in a separate window from the data flow diagram. [*20]

Finally, for the same reasons, the claim language does not support, and the court rejects, the additional limitations to the term proposed by Mathworks, namely, that the front panel can *only* display input and output controls and that it *must* be a graphical representation of the faceplate of an instrument. The court defines "front panel" as a graphical user interface that is separate and apart from the associated data flow diagram and that displays inputs and output controls, where there is at least one input control and at least one output control in the front panel.

C. Input Variable-Icon/Output Variable-Icon.

The court defines "input variable-icon" to mean a graphical image that represents a symbol whose value is entered into the system by the user for processing. The court construes "output variable-icon to mean a graphical image that represents a symbol whose value is the product of processing by the system. The court declines to define

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these terms to require that they appear in both the front panel and the data flow diagrams. While some of the claims expressly require this, see *221 Patent*, Claim 2 (requiring assembly of first front panel including . . . "the [*21] at least one first input variable-icon and the at least one first output variable-icon"), the requirement that these icons appear in both the front panel and the data flow diagram is not imposed by the terms in dispute. Instead, the requirement is imposed by Claim 2 itself, which expressly incorporates the limitations of Claim 1, while simultaneously requiring *the* at least one first input (or output) variable-icon to be included in the front panel.

D. Claim Terms Concerning Graphical Components of Data Flow Diagrams.

1. Function icons.

The court construes "function-icon" to mean a graphical representation of a function.

2. Iteration-icon, sequence-icon, conditional-icon and scheduling icon.

The court construes these terms as follows: "iteration-icon": a graphical image that represents an iteration function; "sequence-icon": a graphical image that represents a sequence function; "conditional-icon": a graphical image that represents a conditional function; and "scheduling-icon": a graphical image that represents a scheduling function.

Mathworks suggests that the court's construction of these terms should require that they be found only in the data flow diagram. [*22] This argument is ultimately defeated by the language of the claims themselves. For instance, Claim 1 of the *221 patent* requires, by the use of other language, that the iteration-icon be included in the data flow diagram and that the "one iteration-icon *in the diagram*" indicates multiple iterations of the at least one first function in the course of the first procedure. Use of the terms "including" and "in" restrict the location of the iteration-icon, not the term "iteration-icon" itself. As such, the court rejects Mathworks' proposed limitation.

3. Arcs.

The court construes "arcs" to be lines that connect the nodes in a data flow diagram and represent that data produced by one node is used by another.

4. Indicates.

The court construes the term "indicates" to mean "signifies."

E. Claim Terms Concerning Special Functions for Controlling Processes Represented by Data Flow Diagrams.

The parties' primary dispute over the proper construction of the special functions terms (i.e., "conditional branch function," "iteration function," sequencing function," and scheduling function") is whether the claims require the icons representing the functions affected by the [*23] special functions to appear *inside* of the special functions' icons. While it is true that the embodiment disclosed by the inventors incorporates that limitation, Mathworks has not pointed to specific claim language that requires the limitations it proposes to graft onto these functional terms. It is the case that the structures represented by Figs. 8-12 in the *221 Patent* "substantially facilitate the application of data flow programming techniques," Col. 9, 11. 33-36, but that is not to say that the methods disclosed are or can be the only way of facilitating such applications. The claim terms are not limited as Mathworks proposes, and the court rejects that argument.

F. Assembling Front Panels and Data Flow Diagrams.

The parties appear to agree on the meaning of the term "assembling." The court construes "assembling" as follows: For front panel: creating a panel by selecting representations of at least one input and at least one output. For data flow diagram: creating a data flow diagram by selecting representations of at least one function and using lines to interconnect graphical representations of a least one input, one output, and one function.

G. Means-Plus-Function [*24] Issues.

The parties have several dispute over whether certain claims, or claim elements, are drafted in means-plus-function form. The court sets forth its holdings on these disputed claims below.

First, the court holds that the term "means, coupled with the front panel display and diagram display, for constructing execution instructions in response to said diagram" is a means-plus-function limitation.*" 587 Patent*, Claim 1. The claimed function is "constructing execution instructions in response to said diagram." The court construes the corresponding structure to be that disclosed in the appended source code as the block diagram editor that constructs a set of execution instructions and equivalents thereof.

Mathworks asserts that the claim should be construed to read: "The diagram editor constructs a set of execution instructions that substantially correspond to both the data flow diagram and the front panel." Mathworks asserts that this language is compelled by the terms in the claim "coupled with the front panel display and diagram display." There is no need, however, for the court to limit the claim further by use of the language proposed by Mathworks, as the terms "coupled [*25] with the front panel

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display and diagram display" appear in the claim language itself and need no construction.

The parties next dispute whether the term "program . . . that constructs execution instructions" is drafted according to *§ 112 P 6*. n7 The court holds it is not. [HN8] The claim does not use the word "means;" therefore, it is presumed not to be drafted in means-plus-function form. The court holds that one skilled in the art reading these patents would recognize that "program" recites sufficient structure to perform the task of constructing execution instructions. The patentees are entitled to the full breadth of the term, and the court adopts National's proposed construction.

> n7 The term "program . . . that constructs execution instructions" is found in the following independent asserted claims: *587 Patent*, Claims 2, 8; *336 Patent*, Claims 1, 3, 5, 8, 12, 17, 30, 31.

The term "execution means, responsive to the value shown for said at least one input variable, for executing said execution [*26] instructions" is also drafted in means-plus-function form. The function is "executing said execution instructions." The corresponding structure is that disclosed in the appended software and in the specifications as the execution subsystem and equivalents thereof.

The parties next dispute whether elements of a methods claim are subject to being drafted in means-plus-function format. The court holds that they may. [HN9] The rule in the Federal Circuit is that each claim must be independently reviewed to determine whether it is subject to *§ 112 P 6*. *O.I. Corp. v. Tekmar Co., Inc., 115 F.3d 1576, 1583 (Fed. Cir. 1997)*. There is no *per se* rule that prohibits a claim drafter from using means-plus-function format when drafting elements of methods claims, although means-plus-function elements are generally found in apparatus claims. *E.g., Epcon Gas Systems, Inc. v. Bauer Compressors, Inc., 279 F.3d 1022 (Fed. Cir. 2002)*; *Seal-Flex Inc. v. Athletic Track & Court Constr., 172 F.3d 836, 850 (Fed. Cir. 1999)*. The question is whether the claim element recites a function without sufficiently described corresponding structure. Moreover, [*27] use of the word "means" creates a presumption that *§ 112 P 6* applies.

Claim 1 of the *221 Patent* recites, as element 1, the step of "displaying on the screen at least one first function-icon that references *at least one first control means for controlling at least one first junction*." (emphasis added). Use of the word "means" in the final clause of this element creates a presumption that the portion of the claim is drafted according to *§ 112 P 6*. That presumption has not been overcome. The claimed function is "con-

trolling at least one first function." The corresponding structure are various control or software modules. n8

> n8 The parties do not appear to dispute what structure corresponds to this function. Instead, their dispute is over whether this element is drafted in means-plus-function language at all.

Claim 1 of the *221 Patent* also includes the element of "displaying on the screen at least one iteration-icon that references *iteration control means for controlling multiple* [*28] *iterations; of data flow*." (emphasis added). A portion of this element is also drafted according to *§ 112 P 6*. The function is "controlling multiple iterations of data flow." The corresponding structure is shown in Figs. 14, 16 and 17. Moreover, the inventors made the source code a part of the specification and appended it to the patent. The court holds that the structure corresponding to the function "controlling multiple iterations of data flow" are those structures disclosed in Figs. 14, 16 and 17 of the *221 Patent*, the relevant portions of the source code appended to the patent, and equivalents thereof. The court rejects Mathworks's proposed additional limitations set forth in its brief at p. 70.

The court also construes the term "sequence control means for controlling sequencing of data flow" according to *§ 112 P 6*. The term uses the word "means" and is therefore presumed to invoke means-plus-function limitations. The recited function is "controlling sequencing of data flow." The only structure in the specification that correspond to this function is Figure 13. Figure 13 depicts a sequence structure that operates in accordance with data flow principles. [*29] Accordingly, the court limits the construction of this term to the structure disclosed in Figure 13, the appended source code and equivalents thereof.

The court construes the term "scheduling control means for scheduling of data flow" according to *§ 112 P 6*. The term uses the word "means" and the plaintiff has not overcome the presumption that means-plus-functions limitations apply. The recited function is "scheduling of data flow." The corresponding structures are those that correspond to the scheduling of data flow function depicted in Figures 13-17 of the patents, the appended source code, and equivalents thereof.

The court construes the term "strip chart control means for storing past and present values for a variable" according to *§ 112 P 6*. The function at issue is "storing past and present values for a variable." Mathworks contends, and National does not challenge, that the corresponding structure in the specification are software modules that create a scrolling plot of output variable values versus time, where new output variables are appended at a

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fixed horizontal or vertical position and that such is re-flected in the source code at NI 104036-39. Therefore, [*30] the court adopts this as the corresponding structure, along with equivalents thereof.

H. Virtual Instrument.

The parties dispute whether, by statements made in the prosecution and amendments, the inventors limited the claims by incorporating the term "virtual instrument" into the preamble of certain claims. The court has canvassed the prosecution history cited by both parties and is not persuaded that the inclusion of the term "virtual instru-ment" in the preamble during prosecution was done with an eye toward elevating these inventions over the prior art. Instead, the court is convinced that the use of the term "virtual instrument" was descriptive in nature and is not a limitation to the claims. The structure of the claims themselves support this conclusion, as a number of claims would be rendered superfluous by reading the require-ment of "virtual instrument" into all of the claims. The defendant's citation at the claim construction hearing to this court's recent opinion in the *Texas Instruments, Inc. v. Linear Technology Corp.* case, while noted, misses the mark because the prosecution history in that case revealed that the patentee distinguished the prior art on certain [*31] grounds while simultaneously adding relevant preamble language. The court held there that the inventors limited the claims accordingly. Here, the history is oth-erwise.

4. Conclusion.

The terms set forth in this order are those that the court determines need construction. The court has sifted through these briefs in an attempt to separate the venom from the substance. The purpose of a brief is persuasion, not vituperation. The papers from both sides of this case use sharp adjectives to mask dull points to a degree that this court has not encountered. That is surprising given the quality of counsel in this case. The court will keep in mind that less rhetoric means shorter briefs when it considers page limit waiver requests in the future.

So Ordered and Signed this 24th day of May, 2002.

T. JOHN WARD

UNITED STATES DISTRICT JUDGE