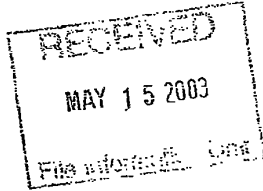


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REQUEST FOR ACCESS TO AN APPLICATION UNDER 37 CFR 1.14(e)



In re Application of	
Application Number 60/186,322	Filed MAR. 2, 2000
Art Unit	Examiner

Paper No. #2

Assistant Commissioner for Patents  
Washington, DC 20231

1.  I hereby request access under 37 CFR 1.14(e)(2) to the application file record of the above-identified ABANDONED Application, which is not within the file jacket of a pending Continued Prosecution Application (CPA) (37 CFR 1.53(d)) and is: (CHECK ONE)

(A) referred to in:

United States Patent Application Publication No. \_\_\_\_\_, page \_\_\_\_\_, line \_\_\_\_\_,  
United States Patent Number 2002/0099,644 column \_\_\_\_\_, line \_\_\_\_\_, or  
an International Application which was filed on or after November 29, 2000 and which  
designates the United States, WIPO Pub. No. \_\_\_\_\_, page \_\_\_\_\_, line \_\_\_\_\_.

(B) referred to in an application that is open to public inspection as set forth in 37 CFR 1.11(b) or 1.14(e)(2)(i), i.e., Application No. \_\_\_\_\_, paper No. \_\_\_\_\_, page \_\_\_\_\_, line \_\_\_\_\_.

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	Application Number: 60/186,322	Filed: 3/2/00
Paper No. #3		

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United States Patent Application Publication No. 6,766,304, page \_\_\_\_\_, line \_\_\_\_\_  
 United States Patent Number \_\_\_\_\_, column \_\_\_\_\_, line \_\_\_\_\_, or  
 WIPO Pub. No. \_\_\_\_\_, page \_\_\_\_\_, line \_\_\_\_\_

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Ariel Tefip  
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In re Application of <i>Kemp, Gary Allan</i>	
Application Number <i>60/186322</i>	Filed <i>Mar 2, 2000</i>
Paper No. <i>#4</i>	

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United States Patent Application Publication No. \_\_\_\_\_, page \_\_\_\_\_, line \_\_\_\_\_  
 United States Patent Number *6766304*, column \_\_\_\_\_, line \_\_\_\_\_ or  
 WIPO Pub. No. \_\_\_\_\_, page \_\_\_\_\_, line \_\_\_\_\_

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*Chris Agrawal*  
 Signature

*Aug 9, 2004*  
 Date

*Chris Agrawal*  
 Typed or printed name

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Unit: <i>FEU</i>	

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*703-415-1250*  
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In re Application of  
**KEMP II et al.**  
 Application Number: **60/186322** File: **3-2-00**

Paper No. **5**

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United States Patent Application Publication No. \_\_\_\_\_, page \_\_\_\_\_, line \_\_\_\_\_  
 United States Patent Number **6772132**, column **PP**, line \_\_\_\_\_ or  
 WIPO Pub. No. \_\_\_\_\_, page \_\_\_\_\_, line \_\_\_\_\_

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  - the pending application as originally filed; or
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- (2) If the application is **incorporated by reference or otherwise identified** in a U.S. patent, a statutory invention registration, a U.S. patent application publication, or an international patent application publication in accordance with PCT Article 21(2), a member of the public may obtain a copy of:
  - the pending application as originally filed.

*Yacob Asghedom*  
 Signature

**Yacob Asghedom**  
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**703 625 6651**  
 Telephone Number

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eS0000065569



US006772132B1

(12) **United States Patent**  
**Kemp, II et al.**

(10) Patent No.: **US 6,772,132 B1**  
(45) Date of Patent: **Aug. 3, 2004**

(54) **CLICK BASED TRADING WITH INTUITIVE GRID DISPLAY OF MARKET DEPTH**

5,845,266 A 12/1998 Lupien et al. .... 705/37  
5,915,245 A 6/1999 Patterson, Jr. et al. .... 705/35  
5,924,082 A 7/1999 Silverman et al. .... 705/37

(75) Inventors: **Gary Alan Kemp, II, Winnetka, IL (US); Jens-Uwe Schluetter, Evanston, IL (US); Harris Brumfield, Chicago, IL (US)**

(List continued on next page.)

**FOREIGN PATENT DOCUMENTS**

(73) Assignee: **Trading Technologies International, Inc., Chicago, IL (US)**

JP WO 99/30259 \* 6/1999  
WO WO 95/26005 A1 9/1995  
WO WO 98/49639 11/1998  
WO WO 99/19821 4/1999  
WO WO 99/30259 A1 6/1999  
WO WO 99/53424 10/1999  
WO WO 00/52619 9/2000  
WO WO 00/62187 10/2000  
WO WO 00/65510 11/2000  
WO WO 01/16830 3/2001  
WO WO 01/16852 3/2001  
WO WO 01/22315 3/2001  
WO WO 01/88808 11/2001

(\*) Notice: Subject to any disclaimer, the term of this patent is extended or adjusted under 35 U.S.C. 154(b) by 245 days.

(21) Appl. No.: 09/590,692

(22) Filed: Jun. 9, 2000

**Related U.S. Application Data**

(60) Provisional application No. 60/186,322, filed on Mar. 2, 2000.

**OTHER PUBLICATIONS**

(51) Int. Cl.<sup>7</sup> ..... G06F 17/60

www.tradingtechnologies.com/products/xtrade\_full.html (viewed May 22, 2001), <Jun. 9, 2000.\*

(52) U.S. Cl. .... 705/37; 705/35; 705/36; 705/37; 705/10; 705/14; 345/814

Kharouf, A trading room with a view, Futures, 27,11, Nov. 1998.\*

(58) Field of Search ..... 705/35, 36, 37, 705/10, 14; 345/814

USPTO Presentation, NASDAQ, Nov. 8, 2001, enclosed pp. 1-13.

(56) **References Cited**

**U.S. PATENT DOCUMENTS**

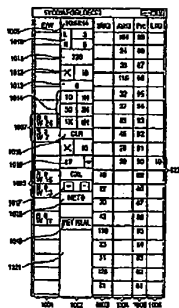
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5,297,032 A 3/1994 Trojan et al. .... 364/408  
5,689,651 A 11/1997 Lozman ..... 395/237  
5,774,877 A 6/1998 Patterson, Jr. et al. .... 705/35  
5,793,301 A 8/1998 Patterson, Jr. et al. .. 340/825.26  
5,797,002 A 8/1998 Patterson, Jr. et al. .... 395/611

Primary Examiner—Richard Weisberger  
(74) Attorney, Agent, or Firm—Foley & Lardner

(57) **ABSTRACT**

A method and system for reducing the time it takes for a trader to place a trade when electronically trading on an exchange, thus increasing the likelihood that the trader will have orders filled at desirable prices and quantities. The "Mercury" display and trading method of the present invention ensure fast and accurate execution of trades by displaying market depth on a vertical or horizontal plane, which fluctuates logically up or down, left or right across the plane as the market prices fluctuates. This allows the trader to trade quickly and efficiently.

56 Claims, 6 Drawing Sheets



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		Application Number <i>60/186322</i>	Filed <i>MAR 2, 2000</i>
		Paper No. <i>#6</i>	

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United States Patent Application Publication No. *60/186322*, page, \_\_\_\_\_ line \_\_\_\_\_,  
 United States Patent Number *6772132*, column \_\_\_\_\_, line, \_\_\_\_\_ or  
 WIPO Pub. No., \_\_\_\_\_, page \_\_\_\_\_, line \_\_\_\_\_.

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eS0000065571



(12) **United States Patent**  
Kemp, II et al.

(10) Patent No.: **US 6,772,132 B1**  
(45) Date of Patent: **Aug. 3, 2004**

(54) **CLICK BASED TRADING WITH INTUITIVE GRID DISPLAY OF MARKET DEPTH**

5,845,266 A 12/1998 Lupien et al. .... 705/37  
5,915,245 A 6/1999 Patterson, Jr. et al. .... 705/35  
5,924,082 A 7/1999 Silverman et al. .... 705/37

(75) Inventors: **Gary Allan Kemp, II, Winnetka, IL (US); Jens-Uwe Schluetter, Evanston, IL (US); Harris Brumfield, Chicago, IL (US)**

(List continued on next page.)

(73) Assignee: **Trading Technologies International, Inc., Chicago, IL (US)**

**FOREIGN PATENT DOCUMENTS**

(\*) Notice: Subject to any disclaimer, the term of this patent is extended or adjusted under 35 U.S.C. 154(b) by 245 days.

JP	WO 99/30259	6/1999
WO	WO 95/26005 A1	9/1995
WO	WO 98/49639	11/1998
WO	WO 99/19821	4/1999
WO	WO 99/30259 A1	6/1999
WO	WO 99/53424	10/1999
WO	WO 00/52619	9/2000
WO	WO 00/62187	10/2000
WO	WO 00/65510	11/2000
WO	WO 01/16830	3/2001
WO	WO 01/16852	3/2001
WO	WO 01/22315	3/2001
WO	WO 01/88808	11/2001

(21) Appl. No.: **09/590,692**

(22) Filed: **Jun. 9, 2000**

**Related U.S. Application Data**

(60) Provisional application No. 60/186,322, filed on Mar. 2, 2000.

**OTHER PUBLICATIONS**

(51) Int. Cl.<sup>7</sup> ..... **G06F 17/00**

[www.tradingtechnologies.com/products/xtrade\\_full.html](http://www.tradingtechnologies.com/products/xtrade_full.html) (viewed May 22, 2001), <Jun. 9, 2000.\*

(52) U.S. Cl. .... **705/37; 705/35; 705/36; 705/37; 705/10; 705/14; 345/814**

Kharouf, A trading room with a view, *Futures*, 27,11, Nov. 1998.\*

(58) Field of Search ..... **705/35, 36, 37, 705/10, 14; 345/814**

USPTO Presentation, NASDAQ, Nov. 8, 2001, enclosed pp. 1-13.

(56) **References Cited**

*Primary Examiner*—Richard Weisberger  
(74) *Attorney, Agent, or Firm*—Foley & Lardner

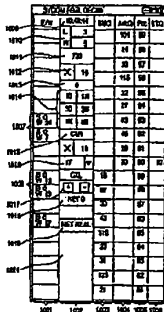
**U.S. PATENT DOCUMENTS**

(57) **ABSTRACT**

4,674,044 A	6/1987	Kalmus et al. ....	364/408
4,750,135 A	6/1988	Boilen .....	364/514
4,903,201 A	2/1990	Wagner .....	
5,038,284 A	8/1991	Kramer .....	364/408
5,077,665 A	12/1991	Silverman et al. ....	
5,101,353 A	3/1992	Lupien et al. ....	
5,136,501 A	8/1992	Silverman et al. ....	
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5,689,651 A	11/1997	Lozman .....	395/237
5,774,877 A	6/1998	Patterson, Jr. et al. ....	705/35
5,793,301 A	8/1998	Patterson, Jr. et al. ..	340/825.26
5,797,002 A	8/1998	Patterson, Jr. et al. ....	395/611

A method and system for reducing the time it takes for a trader to place a trade when electronically trading on an exchange, thus increasing the likelihood that the trader will have orders filled at desirable prices and quantities. The "Mercury" display and trading method of the present invention ensure fast and accurate execution of trades by displaying market depth on a vertical or horizontal plane, which fluctuates logically up or down, left or right across the plane as the market prices fluctuates. This allows the trader to trade quickly and efficiently.

56 Claims, 6 Drawing Sheets



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Application Number: 60/186322	Filed: 3/2/00
Paper No. #7	

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United States Patent Application Publication No. \_\_\_\_\_, page \_\_\_\_\_, line \_\_\_\_\_  
 United States Patent Number 6772132, column \_\_\_\_\_, line \_\_\_\_\_ or  
 WIPO Pub. No. \_\_\_\_\_, page \_\_\_\_\_, line \_\_\_\_\_

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Steve Dley  
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703-416-0366  
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eS000065573





(12) **United States Patent**  
Kemp, II et al.

(10) Patent No.: **US 6,772,132 B1**  
(45) Date of Patent: **Aug. 3, 2004**

- (54) **CLICK BASED TRADING WITH INTUITIVE GRID DISPLAY OF MARKET DEPTH**
- (75) Inventors: Gary Allan Kemp, II, Winnetka, IL (US); Jens-Uwe Schlueter, Evanston, IL (US); Harris Brumfield, Chicago, IL (US)
- (73) Assignee: Trading Technologies International, Inc., Chicago, IL (US)
- (\*) Notice: Subject to any disclaimer, the term of this patent is extended or adjusted under 35 U.S.C. 154(b) by 245 days.

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WO	WO 01/88808	11/2001

- (21) Appl. No.: 09/590,692
- (22) Filed: Jun. 9, 2000

**Related U.S. Application Data**

- (60) Provisional application No. 60/186,322, filed on Mar. 2, 2000.

- (51) Int. Cl.<sup>7</sup> ..... **G06F 17/60**
- (52) U.S. Cl. .... **705/37; 705/35; 705/36; 705/37; 705/10; 705/14; 345/814**
- (58) Field of Search ..... **705/35, 36, 37, 705/10, 14; 345/814**

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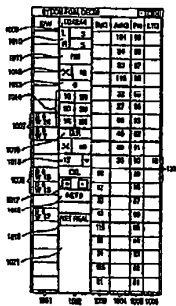
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Primary Examiner—Richard Weisberger  
(74) Attorney, Agent, or Firm—Foley & Lardner

(57) **ABSTRACT**

A method and system for reducing the time it takes for a trader to place a trade when electronically trading on an exchange, thus increasing the likelihood that the trader will have orders filled at desirable prices and quantities. The "Mercury" display and trading method of the present invention ensure fast and accurate execution of trades by displaying market depth on a vertical or horizontal plane, which fluctuates logically up or down, left or right across the plane as the market prices fluctuates. This allows the trader to trade quickly and efficiently.

56 Claims, 6 Drawing Sheets



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US 20040117292A1

(19) **United States**

(12) **Patent Application Publication** (10) Pub. No.: **US 2004/0117292 A1**  
Brumfield et al. (43) Pub. Date: **Jun. 17, 2004**

(54) **SYSTEM AND METHOD FOR TRADING AND DISPLAYING MARKET INFORMATION IN AN ELECTRONIC TRADING ENVIRONMENT**

(76) Inventors: Harris Brumfield, Chicago, IL (US); Steven F. Borsand, Deerfield, IL (US); Mark W. Triplett, Chicago, IL (US)

Correspondence Address:  
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SUITE 3200  
CHICAGO, IL 60606 (US)

(21) Appl. No.: 10/376,417

(22) Filed: Feb. 28, 2003

**Related U.S. Application Data**

(63) Continuation-in-part of application No. 09/590,692, filed on Jun. 9, 2000.  
Continuation-in-part of application No. 09/589,751, filed on Jun. 9, 2000.  
Continuation-in-part of application No. 09/971,087, filed on Oct. 5, 2001.  
Continuation-in-part of application No. 10/125,894, filed on Apr. 19, 2002, which is a continuation-in-part of application No. 09/590,692, filed on Jun. 9, 2000.  
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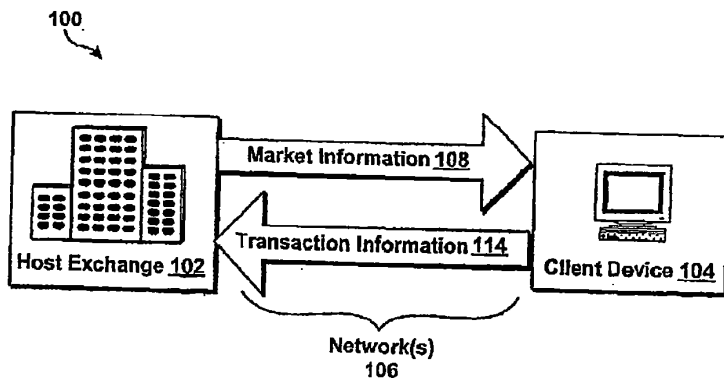
(60) Provisional application No. 60/186,322, filed on Mar. 2, 2000. Provisional application No. 60/186,322, filed on Mar. 2, 2000. Provisional application No. 60/238,001, filed on Oct. 6, 2000. Provisional application No. 60/186,322, filed on Mar. 2, 2000. Provisional application No. 60/238,001, filed on Oct. 6, 2000.

**Publication Classification**

(51) Int. Cl.<sup>7</sup> ..... G06F 17/60  
(52) U.S. Cl. .... 705/37

(57) **ABSTRACT**

A system and method for trading and displaying market information along a static axis are described to ensure fast and accurate execution of trades. The static axis, whether is a straight axis or a curved one, can be oriented in any direction. Regardless of how the axis is oriented, a first region may display price levels that are arranged along the static axis. A second region, which overlaps the first region, may display one or more indicators for highlighting one of the price levels associated with the lowest offer and one of the price levels associated with the highest bid. Moreover, a third region, which overlaps the first region, may be included for initiating placement of an order to buy or an order to sell the tradeable object through an action of a user input device. Other overlapping regions may also be displayed so that additional market information may be viewed by a trader.



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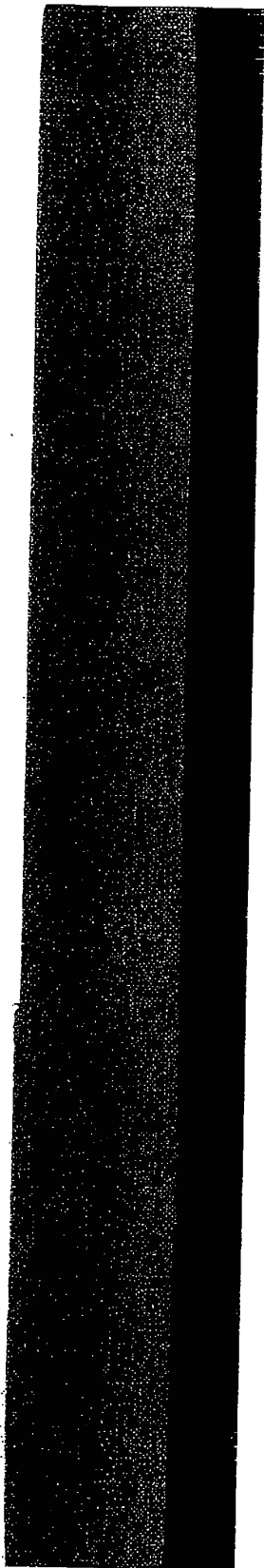
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<b>SERIAL NUMBER</b> 60/186,322	<b>FILING DATE</b> 03/02/2000	<b>CLASS</b> -	<b>GROUP ART UNIT</b> -	<b>ATTORNEY DOCKET NO.</b> 024051/0105
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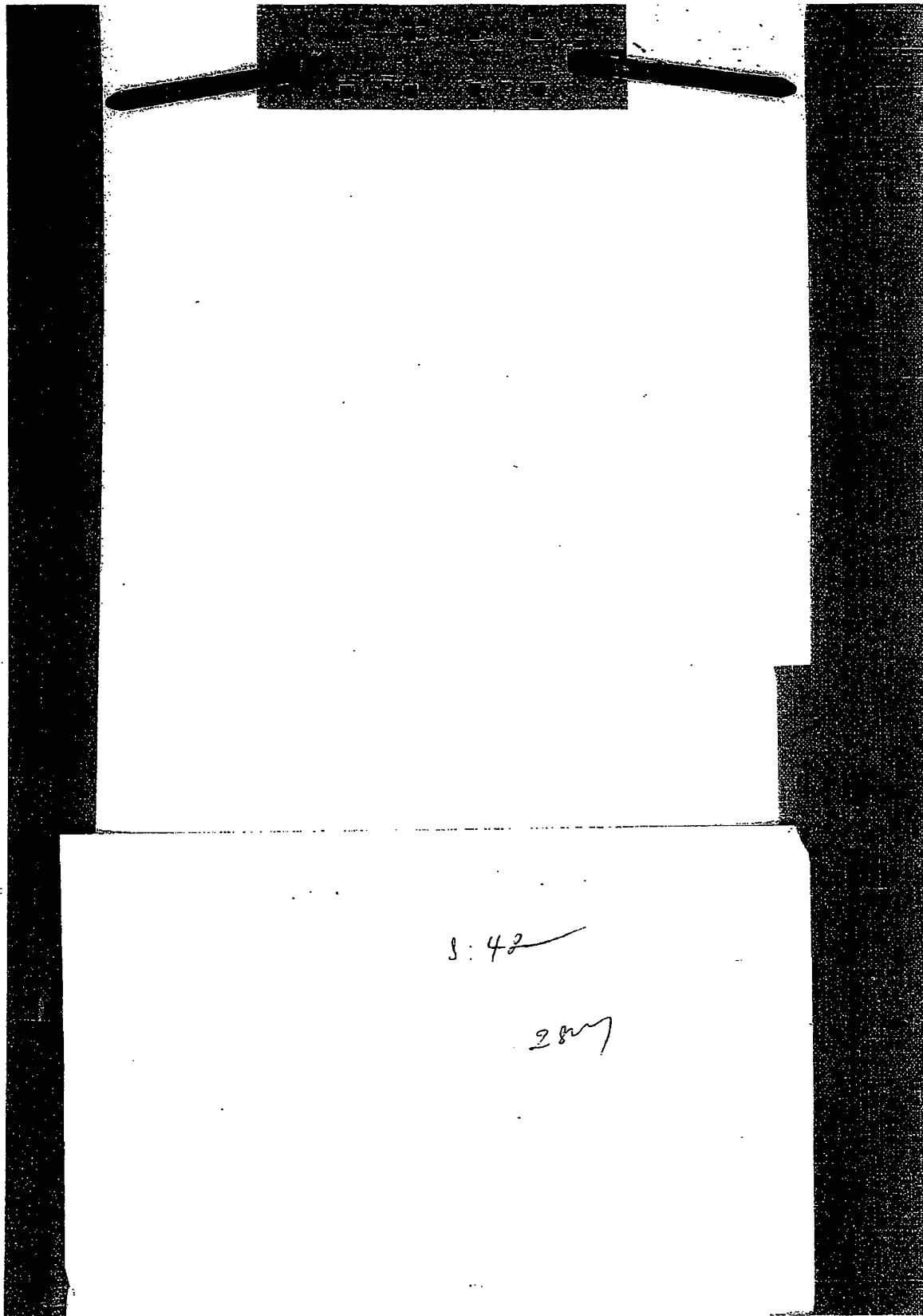
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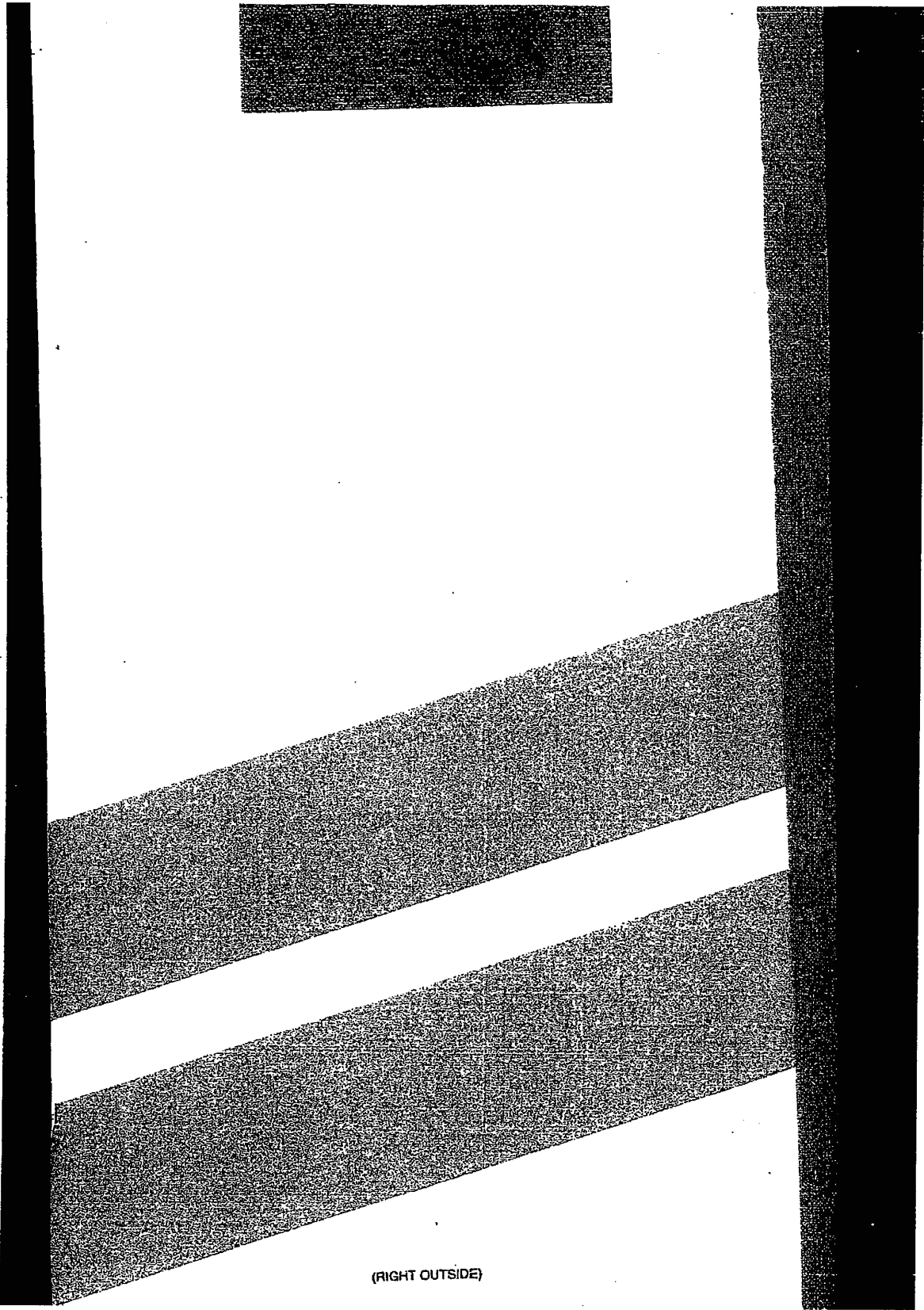
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PATENT APPLICATION



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APPROVED FOR LICENSE

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CONTENTS

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Applicant

*Request for access*

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# EXHIBIT 4

**IN THE UNITED STATES DISTRICT COURT  
FOR THE NORTHERN DISTRICT OF ILLINOIS  
EASTERN DIVISION**

Trading Technologies International, Inc., )  
Plaintiff, )  
vs. ) **No. 04 C 5312**  
eSpeed, Inc., eSpeed International, Ltd., ) **Judge Moran**  
Ecco LLC, and Ecco Ware Ltd., )  
Defendants. )

Trading Technologies International, Inc., )  
Plaintiff, )  
vs. ) **No. 05 C 1079**  
Refco Group Ltd., LLC, et al., ) **Judge Andersen**  
Defendants. )

Rosenthal Collins Group, LLC, )  
Plaintiff-Counterclaim Defendant, )  
vs. ) **No. 05 C 4088**  
Trading Technologies International, Inc., ) **Judge Moran**  
Defendant-Counterclaimant, )

Trading Technologies International, Inc., )  
Plaintiff, )  
vs. ) **No. 05 C 4120**  
GL Consultants, Inc. and GL Trade SA, ) **Judge Gottschall**  
Defendants. )

Trading Technologies International, Inc., )  
Plaintiff, )  
vs. ) **No. 05 C 4811**  
CQGT, LLC and CQG, Inc., ) **Judge Moran**  
Defendants. )

Trading Technologies International, Inc., )  
Plaintiff, )  
vs. ) **No. 05 C 5164**  
FuturePath Trading, LLC, ) **Judge Shadur**  
Defendant. )

**All Cases Assigned to Judge  
Moran For Common Issues**

**MEMORANDUM OPINION AND ORDER**

**Plaintiff Trading Technologies International, Inc. ("TT") brought separate actions against defendants eSpeed, Inc., ITSEcco Holdings Limited, Ecco LLC, and Ecco Ware Limited (collectively "eSpeed"); GL Consultants Inc. ("GL"); CGQT, LLC and CQG, Inc. (collectively "CQG"); and FuturePath Trading, LLC ("FuturePath"), alleging infringement**

of U.S. Patent nos. 6,772,132 ('132 patent) and 6,766,304 ('304 patent). In anticipation of a similar suit, Rosenthal Collins Group, Inc. ("RCG") brought a declaratory judgment suit against TT.<sup>1</sup> For the purposes of discovery and claim construction, the cases were assigned to this court for all common issues. A Markman hearing<sup>2</sup> was held, and we now construe the claims in dispute.

### BACKGROUND

The two patents-in-suit are nearly identical, and both relate to computer software used for electronic trading in the futures market. According to plaintiff, the software revolutionized the futures trading industry, allowing the trader to track the market depth of a commodity and visualize the changes in the inside market. In electronic trading art used prior to plaintiff's patented invention, the computer trading screen showed the changes in the inside market, but a rapidly fluctuating market often caused traders to miss their prices when entering an order at the exact time the inside market was moving. According to plaintiff's patents, "[i]f a trader intends to enter an order at a particular price, but misses the price because the market prices moved before he could enter the order, he may lose hundreds, thousands, even millions of dollars" ('132, 2:57-61; '304, 2:61-65). Prior art also lacked speed, requiring the trader to enter multiple elements of his or her trade before the order could be sent to the market.<sup>3</sup> Plaintiff's technology changed the electronic futures trading industry by

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<sup>1</sup>For the purposes of this motion, we will refer to all defendants and RCG, collectively, as "defendants."

<sup>2</sup>Markman v. Westview Instruments, Inc., 52 F.3d 967 (Fed.Cir.1995), *aff'd*, 517 U.S. 370 (1996).

<sup>3</sup>Defendants emphatically argue that plaintiff's technology is not novel and had been anticipated by prior art, thus suggesting that plaintiff's examples of prior art do not represent the entire field of prior art. We make no decision with regard to anticipation or invalidity at this stage in the construction. We only refer to plaintiff's examples of prior art to set up the major disputes regarding claim construction. Invalidity analysis is saved for another time.



allowing traders to quickly place an order without sacrificing accuracy. In order to do this, the software pairs a "static display of prices" ('132) or "common static price axis" ('304) with "dynamic displays" of "bid" and "ask" columns. The combination allows the trader to track the changing market prices without the prices shifting from under him or her. The user then places a bid or ask order in the "order entry region" through a "single action of a user input device," which allows for quicker transmission of the trade to the market.

Along with a number of additional claim terms, the terms indicated above constitute the primary disputes in claim construction. Claim 1 of each patent is a representative claim, and contains the major disputed terms for construction:

**'132 Claim 1: A method of placing a trade order for a commodity on an electronic exchange having an inside market with a highest bid price and a lowest ask price, using a graphical user interface and a user input device, said method comprising:**

- [1] setting a preset parameter for the trade order**
- [2] displaying market depth of the commodity, through a dynamic display of a plurality of bids and a plurality of asks in the market for the commodity, including at least a portion of the bid and ask quantities of the commodity, the dynamic display being aligned with a static display of prices corresponding thereto, wherein the static display of prices does not move in response to a change in the inside market;**
- [3] displaying an order entry region aligned with the static display prices comprising a plurality of areas for receiving commands from the user input devices to send trade orders, each area corresponding to a price of the static display of prices; and**
- [4] selecting a particular area in the order entry region through a single action of the user input device with a pointer of the user input device positioned over the particular area to set a plurality of additional parameters for the trade order and send the trade order to the electronic exchange.**

**'304 Claim 1: A method for displaying market information relating to and facilitating trading of a commodity being traded in an electronic exchange having an inside market with a highest bid price and a lowest ask price on a graphical user interface, the method comprising:**

[1] dynamically displaying a first indicator in one of a plurality of locations in a bid display region, each location in the bid display region corresponding to a price level along a common static price axis, the first indicator representing quantity associated with at least one order to buy the commodity at the highest bid price currently available in the market;

[2] dynamically displaying a second indicator in one of a plurality of locations in an ask display region, each location in the ask display region corresponding to a price level along the common static price axis, the second indicator representing quantity associated with at least one order to sell the commodity at the lowest ask price currently available in the market;

[3] displaying the bid and ask display regions in relation to fixed price levels positioned along the common static price axis such that when the inside market changes, the price levels along the common static price axis do not move and at least one of the first and second indicators moves in the bid or ask display regions relative to the common static price axis;

[4] displaying an order entry region comprising a plurality of locations for receiving commands to send trade orders, each location corresponding to a price level along the common static price axis; and

[5] in response to a selection of a particular location of the order entry region by a single action of a user input device, setting a plurality of parameters for a trade order relating to the commodity and sending the trade order to the electronic exchange.

### DISCUSSION

Both parties agree that our claim construction should be guided by the Federal Circuit's *en banc* decision in Phillips v. AWH Corp., 415 F.3d 1303 (Fed.Cir.2005). In Phillips, the court addressed "the principal question...[of] the extent to which we should resort to and rely on a patent's specification in seeking to ascertain the proper scope of its claims." *Id.* at 1312. The Phillips court essentially held that while "[i]t is a 'bedrock principle' of patent law that 'the claims of a patent define the invention to which the patentee is entitled the right to exclude,' (*id.* at 1312; Nystrom v. Trex Co., Inc., 424 F.3d 1136, 1142 (Fed.Cir.2005)), ... [t]he construction that stays true to the claim language and most naturally aligns with the patent's

description of the invention will be, in the end, the correct construction.” Phillips, 415 F.3d at 1316.

We take the following from Phillips. In construing the claims of a patent we should look first to the claims themselves, which “provide substantial guidance as to the meaning of particular claim terms.” *Id.*, at 1314. As we determine the meaning of such claims, giving them the “ordinary and customary meaning...[they] would have to a person of ordinary skill in the art in question at the time of the invention,” we construe them in light of the “same resources as would [a person of ordinary skill in the art], viz., the patent specification and the prosecution history.” *Id.*, at 1312-13. *See also C.R.Bard, Inc. v. United States Surgical Corp.*, 388 F.3d 858, 862 (Fed.Cir.2004) (“the intrinsic record is the primary source for determining claim meaning”). We can also look to the prosecution history to determine whether the patentee “clearly and unambiguously express[ed] surrender of subject matter during prosecution.” Sorenson v. International Trade Commission, 427 F.3d 1375, 1378 (Fed.Cir.2005). And finally, we can turn to extrinsic evidence – general purpose and technical dictionaries, and expert testimony, for example – to “shed useful light on the relevant art,” but must consider it only in the context of the intrinsic evidence, including the claim language, specification, and prosecution history. Phillips, 415 F.3d at 1317-18.

We will address each of the disputed terms in turn.

#### Static Display of Prices/Common Static Price Axis

The parties dispute the meaning of “static” in “static display of prices” and “common static price axis.” Plaintiff argues that the price axis is static, or unmoving, in relation to a change in the inside market. Plaintiff further argues that the patents limit the movement of the price axis in order to increase the likelihood that a trader will not miss his price.

Therefore, plaintiff encourages us to adopt a construction of “price levels that do not normally change positions when new market data reflecting a change in the inside market is received.” Defendants urge adoption of their various constructions, all of which limit movement of the price axis to a manual re-centering or re-positioning command. At the center of this fight is the question of automatic re-centering – do plaintiff’s patents cover automatic re-centering? Plaintiff answers in the affirmative and, not surprisingly, defendants answer in the negative.

Although our preliminary injunction construction aligned with plaintiff’s view, such construction was, simply put, preliminary. Jack Guttman, Inc. v. Kopykake Enterprises, Inc., 302 F.3d 1352, 1361 (Fed.Cir.2002) (“District courts may engage in a rolling claim construction, in which the court revisits and alters its interpretation of the claim terms as its understanding of the technology evolves”). Today we have a better understanding of the technology, and all parties have had the opportunity to flesh out their arguments.

We now choose to alter our initial construction, construing “common static price axis” as “a line comprising price levels that do not change positions unless a manual re-centering command is received and where the line of prices corresponds to at least one bid value and one ask value.” We construe “static display of prices” similarly, as “a display of prices comprising price levels that do not change positions unless a manual re-centering command is received.” Defendant eSpeed pointed us to MSN Encarta Dictionary to set forth the ordinary and customary definition of static: “motionless: not moving or changing, or fixed in position.” Our search of Webster’s II New College Dictionary yielded similar results: “Having no motion: at rest.” While we recognize that Phillips teaches us that a dictionary definition should only be used for context, Phillips also teaches that the “words of a claim ‘are generally given their ordinary and customary meaning,’...[which is] the meaning that the term would have to a

person of ordinary skill in the art in question at the time of the invention.” 415 F.3d at 1312-13. Plaintiff has given us no reason to think that such a person of ordinary skill in the art would construe “static” as anything other than non-moving at the time of the invention.<sup>4</sup>

If “static” ordinarily means non-moving, then we cannot see how we can construe it any other way. The only exception can be the one explicitly stated in the specifications and prosecution history – movement due to receipt of a manual re-centering command. If we were to construe the term inclusive of additional unstated exceptions, such as automatic re-centering, we would not know where to stop. Defendant eSpeed aptly asks, “Why is a price display which automatically recenters after every two seconds ‘static,’ but a price display which automatically recenters after every five seconds is not? Why is a price display that automatically recenters when the inside market exceeds three ticks from the center price is ‘static,’ but a price display which automatically recenters after every fifth tick is not?” (eSpeed’s post-Markman brief, at 6, n4). Plaintiff’s own argument raises the same questions. Plaintiff notes, “In fact, with eSpeedometer [which contains a slow drift recentering component,] a price level never suddenly changes position under a trader’s cursor causing him to miss his intended price. This is in contrast to the eSpeed product addressed by the Court at the PI hearing which provided for an instantaneous automatic recentering when the inside market moved off the top or bottom of the screen. Thus, eSpeedometer is more ‘static’ than eSpeed’s previous product because it provides the trader with virtually a 100% guarantee that

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<sup>4</sup>We do find it interesting that in all of plaintiff’s filed exhibits with regard to claim construction, including two dictionary excerpts, plaintiff has never argued that the ordinary and customary meaning of “static” is something other than stationary or non-moving.

he will not miss his intended price” (plf’s post-Markman brief, at 8-9, n6).<sup>5</sup> How can any movement be “more static”? What is static enough to fall within the ambit of plaintiff’s static construction? Because we cannot say, we must construe the term “static” in its ordinary meaning, non-moving, and allow for the only exception plainly stated in the written description: manual re-centering.

We find unpersuasive plaintiff’s argument that the patent only increases but does not guarantee the user’s likelihood of accurately selecting his desired price. Plaintiff’s patents are designed to achieve simultaneous goals: speed and accuracy. With regards to accuracy, the patent specification states, “The ‘Mercury’ display and trading method of the present invention *ensure* fast and accurate execution of trades by displaying market depth on a vertical or horizontal place, which fluctuates logically up or down, left or right across the plane as the market price fluctuates” (‘132, 3:5-9; ‘304, 3:9-13) (emphasis added). Like defendants, we read such language as a guarantee. It is only with regard to speed that the patents cannot guarantee accuracy – it is impossible to know how quickly a trader will process a desired price, move his hand to the user input device, and select the bid or ask region. It is with that in mind that the patent states “[t]he faster a trader can trade, the less likely it will be that he will miss his price and the more likely he will make money” (‘132, 2:60-62; ‘304, 2:65-67). We find that the purpose of the patents’ invention would be frustrated by the inclusion of any movement uncontrolled by the user. See Curtiss-Wright Flow Control Corp. v. Velan, Inc., 438 F.3d 1374, 1379-81 (Fed.Cir.2006) (limiting the claim term “adjustable” to the patent’s consistent description that adjustment occurs during operation of the de-header system, in part because

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<sup>5</sup>It is possible that eSpeed’s (or any other defendant’s) product will be considered “static” under the doctrine of equivalents, even under the current construction. Such analysis, however, is reserved for a future date.

**“[a]ny construction to the contrary is not consistent with the overall context of this invention and this field of art as described in the specification”). Thus, we are further convinced of our construction.**

**We take time to note that the construction of “common static price axis” includes the phrase, “where the line of prices corresponds to at least one bid value and one ask value.” We do so to clarify that with regard to the “line of prices,” orientation of the axis is irrelevant – it can be horizontal, vertical or angled, for example. We find that use of the claim language “common,” “corresponding to” and “aligned” are all used as synonyms for “in relationship with.” See *Id.*, 438 F.3d at 1380 (“this court has acknowledged that two claims with different terminology can define the exact same subject matter”). The specification’s language states that “Mercury displays market depth in a logical, vertical fashion or horizontally or at some other convenient angle or configuration” (‘304, 7:42-45, ‘132, 7:22-25). That market depth, which includes the best bid and the best ask, can be displayed on an angle gives further support to plaintiff’s contention that “common” connotes no more than a relationship between the price axis and the bid and ask display regions.**

**We also note our use of the term “price levels” in the construction of both “common static price axis” and “static display of prices.” While recognizing that the ‘132 patent does not use the term “price level” in the claims, as compared to the ‘304 patent, we find that the intrinsic evidence compels us to adopt such language in both constructions. We re-assert our preliminary injunction analysis regarding this issue: “the real issue is what ‘static display of prices’ means, and we understand that phrase to include price levels, which is where the prices are located and displayed. In other words, the display of prices is a region in which prices, represented by numbers, are shown.” Trading Technologies Int’l. Inc. v. eSpeed, Inc., 370**

F.Supp.2d 691, 699 (N.D.Ill.2005) (“Trading Technologies I”). We reject defendants’ contention that “price levels” are synonymous with prices or representation of prices. The written descriptions of both patents consistently refer to “price rows” and “price levels.” For example, “The market depth display shows the trader the interest the market has in a given commodity at different price levels” (‘304, 6:17-19, ‘132, 5:50-52). “The status of each order is displayed in the price row where it was entered” (‘304, 8:23-24, ‘132, 7:56-57). “Thus, a right click in the AskQ column in the 87 price row will send a sell order to market at a price of 87 and a quantity of 150” (‘304, 10:46-48, ‘132 10:8-10). “A left click would enter an order with a price corresponding to the price row clicked...” (‘304, 11:21-22, ‘132, 10:50-51).<sup>6</sup> Found in the preferred embodiment, it is clear that both patents intended to showcase a “price level” that was broader than simply price. Pfizer, Inc. v. Teva Pharmaceuticals, USA, Inc., 429 F.3d 1364, 1374 (Fed.Cir.2005) (“A claim construction that excludes a preferred embodiment...is ‘rarely, if ever, correct’”). Thus, we define “price level” as “a level on which a designated price or price representation resides.”

#### Dynamic Display/Dynamically Displaying

The parties dispute the meaning of the term “dynamic” in the claim language “dynamic display” and “dynamically displaying.” The defendants argue that “dynamic” requires movement, up or down the price axis, for example. Plaintiff contends that “dynamic” is captured by the updating of the bid and ask quantities as new information is received from the

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<sup>6</sup>Defendant eSpeed argues that the use of “price levels” with respect to Figure 2 (“The working bid and ask quantity for each price level is also displayed in columns 202 and 205 respectively” (‘304,5:27-29, ‘132, 5:23-25)), wherein 202 and 205 are on the same horizontal row, proves that “price levels” are synonymous with “prices.” Plaintiff counters by arguing that Figure 2 does contain “price levels” under its proposed construction – the trading screen has a level or region on which the price resides that does not extend across the entire row, as compared to patents’ preferred embodiments. We find plaintiff’s argument persuasive.



market. Based on our understanding of the record, we construe “dynamic display” to be “[a] display of a plurality of bids and asks that are updated in response to new market information such that the bids and asks change positions relative to the static display of prices when the market changes.” Updates based on the changing market data cause the displayed quantities of bids and asks to appear to move along the static price axis. Similarly, we construe “dynamically displaying” as “[u]pdating the first (second) indicator in response to new market information such that the first (second) indicator changes positions relative to the common static price axis when the market changes.”

Defendants argue that plaintiff disclaimed use of the term “update” during the prosecution of the patents. During that time, patentee’s counsel distinguished patentee’s invention from the Silverman *et al* prior art:

The present invention, as claimed, is patentable over the Silverman *et al.* references. As described above, the present invention includes a dynamic display for a plurality of bids and for a plurality of asks in the market for a given commodity and a static display of prices corresponding to the plurality of bids and asks for the commodity.... While it appears that both the central system book and the keystation book of the Silverman *et al.* references show a plurality of bids and asks for a given traded commodity, in contrast to the present invention, the references disclose that these pluralities are displayed “dynamically” only in the sense that the bids and offers are updated.... There is no disclosure that the listing of bids and aks actually *move* along any axis.

(Petition to Make Special, eSpeed claim construction, exh. F, eS64848-9). Based on this language, defendants argue that plaintiff cannot now reclaim in construction something patentee disclaimed during prosecution. They are correct in theory. See SanDisk Corp. v Memorex Products, Inc., 415 F.3d 1278, 1286 (Fed.Cir.2005) (“The court must always consult the prosecution history, when offered in evidence, to determine if the inventor surrendered disputed claim coverage”). We do not think, however, that the patentee disclaimed the use of

**“update” in this case. The Petition to Make Special continues:**

**Furthermore, unlike the present invention, neither the central system book nor the keystation book of the Silverman et al. references includes a static display of prices corresponding to a plurality of bids and asks for a traded commodity. There being no static display of prices, the references also do not disclose that the pluralities of bids and asks are dynamically displayed in alignment with the prices corresponding thereto.”**

**(eSpeed claim construction, exh. F, at eS64849). Unlike plaintiff’s invention, the Silverman prior art did not combine the static display of prices with the dynamic display of bids and asks. Therefore, it *only* updated the prices. The present invention, by contrast, not only updates the prices, but because the bid and ask values are shown relative to the static price axis, the user can visually track the movement of the market by the movement of the bids and asks along the price axis. That visual shift, in addition to the updating, is what makes the plaintiff’s invention distinguishable from the Silverman *et al.* references.**

**Once we allow use of the term “updating” in construction of the claims, we address defendants’ additional arguments. Defendants point to such language as “[t]he values in the Bid and Ask columns however, are dynamic; that is, they move up and down (in the vertical example) to reflect the market depth for the given commodity” (amend. and reply, eSpeed claim construction, exh. E, eS64873). They argue that such language proves that the term “dynamic” must indicate movement specifically. We decline to adopt such language in the construction. Like the specification language, “The ‘Mercury’ display and trading method of the present invention ensure fast and accurate execution of trade by displaying market depth on a vertical or horizontal plane, which fluctuates logically up or down, left or right across the place as the market price fluctuates,” the prosecution history focuses “movement” on the market depth. Such a focus allows that the term “dynamic” alone can refer to updates**

received from the market, and the movement occurs simply because changed bid or ask values correspond to different prices in the static price display. Therefore, we construe “dynamic display” as “[a] display of a plurality of bids and asks that are updated in response to new market information such that the bids and asks change positions relative to the static display of prices when the market changes.” We construe “dynamically displaying” as “[u]pdating the first (second) indicator in response to new market information such that the first (second) indicator changes positions relative to the common static price axis when the market changes.” We construe “indicator” in its plain and ordinary meaning as “something that indicates.”

#### Order Entry Region

Both patents use the term “order entry region” in claim 1. During the preliminary injunction phase we construed the term to mean “an area comprising a plurality of locations where users may enter commands to send trade orders, and that each location corresponds to a price level along the common static price axis.” We see no reason to depart from that construction now.

Along with the debate over “single action of a user input device” (see below), the parties’ dispute centers on whether a pop-up window is covered under plaintiff’s patents. While that is clearly a question for another day, it can offer context for our construction analysis. *See Wilson Sporting Goods Co. v. Hillerich & Bradsby Co.*, 442 F.3d 1322, 1326-27 (Fed.Cir.2006) (“While a trial court should certainly not prejudge the ultimate infringement analysis by construing claims with an aim to include or exclude an accused product or process, knowledge of that product or process provides meaningful context for the first step of the infringement analysis, claim construction”).

Like plaintiff’s patents as a whole, “order entry region” should be viewed from the

perspective of the user, not the computer. With that in mind we accept defendants' argument that "order entry region" is a location within the trading display where a user *sends* and not simply *initiates* an order. The patents' written descriptions consistently state that a selection within the order entry region does more than simply initiate an order, it sends or executes the order (*see, e.g.*, '304, 3:9-10; '132, 3:5-6 ("The 'Mercury' display and trading method of the present invention ensure fast and accurate execution of trades..."); '304, 3:26-28; '132, 3:22-24 ("...provide the trader with improved efficiency in placing, and thus executing, trade orders for commodities in an electronic exchange"); '304, 10:34-39; '132, 9:63-67 ("A left click on the 18 in the BidQ column will send an order to market to buy 17 lots...of the commodity at a price of 89")). The prosecution history further reveals that patentee originally envisioned claim language that included "[a] method of...initiating placement of a trade order of the commodity through a single action of the user input device with a pointer of the user input device positioned over an area in said dynamic displays of bids and asks" (certified file history for U.S. Patent No. 6,772,132, eSpeed claim construction, exh. C, at eS64874). Over a year later, the patentee changed the focus of that claim, removing the language "initiating placement" and amending it to read, "method comprising...selecting a particular area in the order entry region through a single action of the user input device with a pointer of the user input device positioned over the particular area to set a plurality of additional parameters for the trade order and send the trade order to the electronic exchange" (*id.* at eS65203). Thus, from the perspective of the user, selection of an area in the order entry region is the final step in the trader's placement of an order at the market. In other words, the user need not do anything more before the order is entered at the market. If, however, the computer or the exchange had to perform additional steps before the order was actually filled at the exchange, such would

still fall within the ambit of “order entry region,” as construed herein.<sup>7</sup>

### Single Action of a User Input Device

Facing arguments overlapping with the “order entry region” debate, we once again see no need to depart from the construction we adopted during the preliminary injunction phase. Thus, we construe “single action of a user input device” to be “an action by a user within a short period of time that may comprise one or more clicks of a mouse button or other input device.” Defendant eSpeed has attempted to resuscitate its argument that “single action” must send a “single computer command to make the selection.” Again we reject such a limitation. eSpeed’s attempt harkens back to the pop-up window, and focuses the “single action” on the computer, rather than the user. As we have continually noted, however, plaintiff’s patents generally were written from the perspective of the user. Therefore, this claim refers to the user’s single action, not the action(s) the computer performs to execute the user’s command. Further, eSpeed’s reference to a single line in the prosecution history for support (“...a trader places a trade order with the pointer in the area of the order entry region of the dynamic market depth region, through a single computer implemented action...”) (notice of allowability, eSpeed claim construction, exh. G, at eS65384), without any support in the claim language or specification, is insufficient evidence for us to include such limiting language in the construction. See Phillips, 415 F.3d at 1317 (“because the prosecution history represents an ongoing negotiation between the PTO and the applicant, rather than the final product of that negotiation, it often lacks the clarity of the specification and thus is less useful for claim

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<sup>7</sup>Defendant eSpeed again attempts to insert the term “matched” into its construction. As we noted in our preliminary injunction analysis, “[t]he words ‘aligned’ and ‘corresponding’ do not mean ‘unambiguously matched’” (Trading Technologies I, 370 F.Supp.2d at 700), nor do they mean “matched.” As noted above, we construe both terms to mean “in relationship with,” which is a broader construction than “matched.”

construction purposes”).

Defendant CQG advocates limiting the construction of “single action” to a “single click or a double click of a user input device” and defendant RCG advances a construction focused on invalidity, using “double clicking a mouse button and striking the Enter Key” as an example of a single action. We reject both constructions. The patents’ specifications clearly state:

**[T]he specification refers to a single click of a mouse as a means for user input and interaction with the terminal display as an example of a single action of the user. While this describes a preferred mode of interaction, the scope of the present invention is not limited to the use of a mouse as the input device or to the click of a mouse button as the user’s single action. Rather, any action by a user within a short period of time, whether comprising one or more clicks of a mouse button or other input device, is considered a single action of the user for the purposes of the present invention.**

(‘132, 4:9-19; ‘304, 4:13-23). We will not disregard such a clear explanation. And, while the issue of double click/enter was repeatedly raised at the Markman hearing, invalidity is not before us at the moment, and therefore we decline to decide the issue during the construction phase.

#### **Additional Claim Terms**

In addition to the key terms discussed above, the parties dispute several additional minor claim terms. We discuss those now.

With respect to the display of the dynamic bid and ask regions, and static price axis, we construe “display of a plurality of bids and a plurality of asks” and “displaying the bid and ask display regions” as “a display of one or more bids and one or more asks.” eSpeed encourages us to limit the display to information that is displayed in a single window. We decline to do so. The claim contains no such limitation and while the preferred embodiment

does suggest a single window display, we will not import such limitations into the claims. *See Wilson Sporting Goods, Co.*, 442 F.3d at 1329 (“This court...declines to read a limitation from the written description into the claims”); *Innova/Pure Water, Inc. v. Safari Water Filtration Systems, Inc.*, 381 F.3d 1111, 1117 (Fed.Cir.2004) (“particular embodiments appearing in the written description will not be used to limit claim language that has broader effect”).

Both patents use the term “parameter” in the claim language. For example, claim 1 of the ‘304 patent claims “in response to a selection of a particular location of the order entry region by a single action of a user input device, setting a plurality of parameters for a trade order....” Claim 1 of the ‘132 patent claims “setting a preset parameter for the trade order” and “selecting a particular area in the order entry region through single action of the user input device with a pointer of the user input device positioned over the particular area to set a plurality of additional parameters for the trade order....” Although the preset parameters and the additional parameters may be different, in all cases the term “parameter” means “an element of a trade order, including, but not limited to, quantity, price, type of order and the identity of the commodity.” Defendants encourage us to limit our construction to the listed parameters. The specifications, however, state: “Similarly, every exchange requires that certain information be included in each order. For example, traders must supply information like the name of the commodity, quantity, restrictions, price and multiple other variables.” As defendants’ constructions do not account for restrictions or “multiple other variables,” they cannot be correct.

Both patents also refer to “when the market changes.” Patent ‘304’s claims 1 and 27 use the term, claiming: “displaying the bid and ask display regions in relation to fixed price levels positioned along the common static price axis such that when the inside market changes,

the price levels along the common static price axis do not move and at least one of the first and second indicators moves in the bid or ask display regions relative to the common static price axis.” Patent ‘132’s claim 14 states: “[A] display device for displaying market depth of a commodity, through a dynamic display of a plurality of bids and a plurality of asks in the market for the commodity, including the bid and ask quantities of the commodity, aligned with a static display of prices corresponding thereto, wherein the static display of prices does not move when the inside market changes....” Although we do not view the parties’ constructions as diametrically opposed to one another, we accept plaintiff’s construction. “When the market changes” is construed as “at the time that new data reflecting a change in the inside market is received.” Plaintiff, and this construction, recognizes that “when” is not synonymous with “instantaneously.” Rather, “when” encompasses the concept that the update will not appear on the trader’s screen until the software and/or computer receives, processes, and displays the new market information.

Finally, we turn to “trade order.” In the ‘132 patent, patentee claims “displaying an order entry region...for receiving commands from the user input devices to send trade orders...” and “selecting a particular area in the order entry region...to set a plurality of additional parameters for the trade order and send the trade order to the electronic exchange.” The ‘304 patent claims “displaying an order entry region comprising a plurality of locations for receiving commands to send trade orders...” and “in response to a selection of a particular location of the order entry region by a single action of a user input device, setting a plurality of parameters for a trade order relating to the commodity and sending the trade order to the electronic exchange.” We construe “trade order” as “a single, electronic message in executable form that includes at least all required parameters of a desired trade.” Plaintiff’s main



concern is with the term “executable.” Plaintiff argues that use of “executable” is inconsistent with Figure 1, which shows how a system can be configured to allow for trading in multiple exchanges simultaneously. The figure shows how a user’s computer is hooked up to the exchange through a series of routers and gateways. Further, the written description states that “[w]hen the system is configured to receive data from multiple exchanges, then the preferred implementation is to translate the data from various exchanges into a simple format” (‘132, 4:28-32; ‘304, 4:32-35). Plaintiff asserts that a trade order in executable form would be contrary to the translation function. We disagree. First, we note that the patents use the term “execute” throughout the written description. For example, “These embodiments, and others described in greater detail herein, provide the trader with improved efficiency and versatility in placing, and thus executing, trade orders for commodities in an electronic exchange” (‘132, 3:21-24; ‘304, 3:25-28). Second, we note that the term “executable,” as used in this construction, must be viewed from the perspective of the user, not the computer. Once the trader has selected an area in the order entry region, and sent the trade to the market, the user need do nothing further to execute the order. Thus, from the perspective of the trader, the trade has been executed, and must have been in executable form. As with the constructions of “single action” and “order entry region,” however, if the computer must perform additional steps or route the order through a router or gateway, such would still fall within the ambit of “trade order,” as construed herein.

#### Means-Plus-Function

GL and FuturePath argue that ‘132 patent claim 8 is a “means-plus-function” claim subject to the limitations of 35 U.S.C. § 112, ¶ 6 (1994). The statute states:

An element in a claim for a combination may be expressed as a means or step

for performing a specified function without the recital of structure, material, or acts in support thereof, and such claim shall be construed to cover the corresponding structure, material, or acts described in the specification and equivalents thereof.

Paragraph 6 was included in the statute to “allow the use of means expressions in patent claims without requiring the patentee to recite in the claims all possible structures that could be used as means in the claimed apparatus.” Med. Instrumentation and Diagnostics Corp. v. Elekta AB, 344 F.3d 1205, 1211 (Fed.Cir.2003) (citing O.I. Corp. v. Tekmar Co., 115 F.3d 1576, 1583 (Fed.Cir.1997)). The Federal Circuit further held, however, that “[t]he price that must be paid for use of that convenience is limitation of the claim to the means specified in the written description and equivalents thereof.” *Id.* Based on that reasoning, GL and FuturePath assert that claim 8 is a means-plus-function claim, that neither the claim itself nor the specifications provide sufficient structure to fulfill the stated functions, and that, therefore, claim 8 and claims dependent thereon are invalid.

First, we must determine whether claim 8 is a means-plus-function claim. The claim reads:

A computer readable medium having program code recorded thereon, for execution on a computer having a graphical user input device, to place a trade order for a commodity on an electronic exchange having an inside market with a highest bid price and a lowest ask price, comprising:

- [1] a first program code for setting a preset parameter for the trade order;
- [2] a second program code displaying market depth of a commodity, through a dynamic display of a plurality of bids and a plurality of asks in the market for the commodity, including the bid and ask quantities of the commodity, aligned with a static display of prices corresponding thereto, wherein the static display of prices does not move in response to a change in the inside market;
- [3] a third program code for displaying an order entry region comprising plurality of areas for receiving commands from the user input device to send trade orders, aligned with the static display of prices, each area corresponding to a price of the static display of prices; and
- [4] a fourth program code for receiving a command as a result of a selection

of a particular area in the order entry region by a single action of the user input device with a pointer of the user input device positioned over the particular area, to set a plurality of additional parameters for the trade order and send the trade order to the electronic exchange.

**'132, Claim 8.**

In determining whether a claim falls under the ambit of § 112, ¶ 6, we first look to whether the claim language itself includes the term “means.” The Federal Circuit has “made clear that use of the term ‘means’ is central to the analysis: ‘the use of the term ‘means’ has come to be so closely associated with ‘means-plus-function’ claiming that it is fair to say that the use of the term ‘means’ (particularly as used in the phrase ‘means for’) generally invokes [§ 112, ¶ 6] and that the use of a different formulation generally does not.’” Personalized Media Communications, LLC v. Int’l Trade Commission, 161 F.3d 696, 703 (Fed.Cir.1998). Thus, both parties agree that because Claim 8 does not employ the term “means” or “means for,” there is a presumption that the claim is not a means-plus-function claim. The presumption can be rebutted, however, if the intrinsic evidence so warrants, and “the focus remains on whether the claim as properly construed recites sufficiently definite structure to avoid the ambit of § 112, ¶ 6.” *Id.*, at 704.

GL and FuturePath argue that claim 8 does not provide sufficient structure to remove it from the scope of § 112, ¶ 6, regardless of the fact that the claim language does not include the term “means.” Specifically, they argue that the claim asserts four functions, and that the term “program code” is insufficient to provide accompanying structure through which to perform the stated functions. We agree that claim 8 provides four functions, or outcomes. We disagree, however, that “program code” is insufficient to provide sufficient structure.

In determining whether a claim provides sufficient structure to remove it from § 112,

¶ 6, the Federal Circuit has not required the claim term to set forth a specific structure. Rather, “it is sufficient if the claim term is used in common parlance or by persons of skill in the pertinent art to designate structure, even if the term covers a broad class of structures and even if the term identifies the structures by their function.” Lighting World, Inc. v. Birchwood Lighting, Inc., 382 F.3d 1354, 1359-60 (Fed.Cir.2004). The term “code,” with regard to computer technology, is defined as: “In software engineering, computer instructions and data definitions expressed in a programming language or in a form output by an assembler, compiler, or other translator.” THE NEW IEEE STANDARD DICTIONARY OF ELECTRICAL AND ELECTRONICS TERMS, FIFTH ED. (1993). Such a definition is not a “generic structural term such as ‘means,’ ‘element,’ or ‘device’; nor is it a coined term lacking a clear meaning, such as ‘widget’ or ‘ram-a-fram.’” Personalized Media Communications, 161 F.3d at 704 (finding that “digital detector” was sufficient structure to remove a claim from § 112, ¶ 6). See also Affymetrix, Inc. v. Hyseq, Inc., 132 F.Supp.2d 1212, 1231-32 (N.D.Cal.2001) (finding that “computer code” recited a sufficient structure, understood by one skilled in the art, to be able to accomplish the stated functions); Harmonic Design, Inc. v. Hunter Douglas, Inc., 88 F.Supp.2d 1102, 1105 (C.D.Cal.2000) (finding that “electronic circuit” recited sufficient structure). We turn to the recent case of Massachusetts Institute of Technology and Electronics For Imaging, Inc. v. Abacus Software, \_\_\_ F.3d \_\_\_, 2006 WL 2613439 (Fed.Cir.2006) for analysis assistance. There, the Federal Circuit, in analyzing claim language of two claims, neither of which employed the term “means,” determined that one should be viewed as a means-plus-function claim and the other should not. First, the court determined that the term “colorant selection mechanism” invoked § 112, ¶ 6 because “mechanism” was used synonymously with means, “colorant selection” was defined in neither a dictionary nor

the specification, and there was no indication that “colorant selection” had a generally understood meaning. *Id.*, at \*7-8. In contrast, the court found that “aesthetic correction circuitry” did not fall within the ambit of § 112, ¶ 6. The court noted that dictionary definitions establish that the term “circuitry,” by itself, connotes structure, pointing to, for example, Linear Tech. Corp. v. Impala Linear Corp., 379 F.3d 1311, 1320 (Fed.Cir.2004), which relied on the Dictionary of Computing’s definition of “circuit” as “the combination of a number of electrical devices and conductors that, when interconnected to form a conducting path, fulfill some desired function.” The definition of “code,” noted above, places “program code” in a category more analogous to the court’s analysis of “aesthetic correction circuitry,” than “colorant selection mechanism.” *See also* WEBSTER’S II NEW COLLEGE DICTIONARY 2001, 216 (defining “code” with respect to computer science as “A set of symbols and rules used to represent instructions to a computer”).

GL’s and FuturePath’s use of Altiris, Inc. v. Symantec Corp., 318 F.3d 1363 (Fed.Cir.2003), is of no assistance to their argument in this case. In Altiris, the claim included the language “means of,” and therefore the court began with the presumption of means-plus-function. Such is not the case here. Mas-Hamilton Group v. LaGard, Inc., 156 F.3d 1206 (Fed.Cir.1998), can be distinguished as well. In Mas-Hamilton, the Federal Circuit affirmed a district court’s reading of means-plus-function into a claim for a “lever moving element,” even where the claim did not utilize the term “means.” The Mas-Hamilton court found it persuasive that LaGard could not point to any evidence demonstrating that the term “lever moving element” was reasonably well understood in the art. 156 F.3d at 1214. Such is not the case here. In addition to the case law discussed above, plaintiff pointed us to the Manual of Patent Examining Procedure (U.S. Dep’t of Commerce, MANUAL OF PATENT EXAMINING

PROCEDURE, (8<sup>th</sup> ed. 2001, rev. Oct. 2005)), wherein the guidelines indicate that “a claimed computer-readable medium encoded with a data structure defines structural and functional interrelationships between the data structure and the computer software and hardware components which permit the data structure’s functionality to be realized, and is thus statutory.”<sup>8</sup> Although the guidelines are not binding, they do provide some evidence that computer-readable mediums, such as the one claimed in claim 8, are known in the art to include a structural component.

Defendants GL and FuturePath argue that the fact that the patent’s inventors admit that they struggled for over two years to reduce the invention to practice “makes abundantly clear that the ‘program code...’ limitations in the context of the ‘132 Patent, do not use simple, off-the-shelf programs that one skilled in the art can readily implement without undue experimentation” (defs’ reply at 5). We do not buy such an argument. Here, defendants’ allegedly infringing products have managed to create systems that seemingly realize the functions stated in claim 8 – set preset parameters, display market depth, display an order entry region, and receive a single action command. While we make no determination of infringement, it seems to us that the inventors or developers of defendants’ products, all of whom are reasonably skilled in the art, were either able to develop plaintiff’s (or another’s) program codes, or develop their own. Thus, either plaintiff supplied sufficient structure to develop its claimed program codes or one reasonably skilled in the art was able to develop the codes independently. Either way, plaintiff wins this argument.

Because we begin with the presumption that claim 8 is not a means-plus-function claim,

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<sup>8</sup>Defendants GL and FuturePath argue that the MPEP only allows for the patenting of computer systems where a specific data structure is coupled with a computer-readable medium. We agree, but find that “program code” provides sufficient structure for the reasons stated herein.


and because defendants GL and FuturePath have failed to rebut that presumption, we find that claim 8 does not come within the ambit of § 112, ¶ 6.

In their motion for partial summary judgment, defendants GL and FuturePath also argue that patent '304's claim 27 is invalid and therefore unenforceable. Their argument relies on the Federal Circuit's decision in IPXL Holdings, L.L.C. v. Amazon.com, Inc., 430 F.3d 1377 (Fed.Cir.2005), wherein the court, on a motion for summary judgment, adopted the determination of the Board of Patent Appeals and Interferences of the PTO that a claim covering both an apparatus and method is invalid for indefiniteness under 35 U.S.C. § 112, ¶ 2. Paragraph 2 states: "The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention." We did request that plaintiff address the portions of defendants GL's and FuturePath's motion for partial summary judgment relevant to claim construction. And defendants are correct that indefiniteness is relevant to claim construction. *See, e.g., Energizer Holdings, Inc. V. Int'l Trade Comm'n*, 435 F.3d 1366, 1371 (Fed.Cir.2006) ("A claim that is amenable to construction is not invalid on the ground of indefiniteness"). GL's and FuturePath's arguments on indefiniteness, however, request that the entire claim 27 be deemed invalid. Defendants' motion points to no specific term(s) in claim 27 requiring construction, and thus we will leave the invalidity debate for another day.

#### CONCLUSION

For the reasons stated above, we so construe the relevant claims of the '132 and '304 patents.

Oct. 31, 2006.

  
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JAMES B. MORAN  
Senior Judge, U. S. District Court

**IN THE UNITED STATES DISTRICT COURT  
FOR THE NORTHERN DISTRICT OF ILLINOIS  
EASTERN DIVISION**

Trading Technologies International, Inc., )  
Plaintiff, )  
vs. ) No. 04 C 5312  
eSpeed, Inc., eSpeed International, Ltd., ) Judge Moran  
Ecco LLC, and Ecco Ware Ltd., )  
Defendants. )

Trading Technologies International, Inc., )  
Plaintiff, )  
vs. ) No. 05 C 1079  
Refco Group Ltd., LLC, et al., ) Judge Andersen  
Defendants. )

Rosenthal Collins Group, LLC, )  
Plaintiff-Counterclaim Defendant, )  
vs. ) No. 05 C 4088  
Trading Technologies International, Inc., ) Judge Moran  
Defendant-Counterclaimant, )

Trading Technologies International, Inc., )  
Plaintiff, )  
vs. ) No. 05 C 4120  
GL Consultants, Inc. and GL Trade SA, ) Judge Gottschall  
Defendants. )

Trading Technologies International, Inc., )  
Plaintiff, )  
vs. ) No. 05 C 4811  
CQGT, LLC and CQG, Inc., ) Judge Moran  
Defendants. )

Trading Technologies International, Inc., )  
Plaintiff, )  
vs. ) No. 05 C 5164  
FuturePath Trading, LLC, ) Judge Shadur  
Defendant. )

All Cases Assigned to Judge  
Moran For Common Issues

**MEMORANDUM OPINION AND ORDER**

Plaintiff Trading Technologies International, Inc. ("TT") brought separate actions against defendants eSpeed, Inc., ITSEcco Holdings Limited, Ecco LLC, and Ecco Ware Limited (collectively "eSpeed"); GL Consultants Inc. ("GL"); CGQT, LLC and CQG, Inc. (collectively "CQG"); and FuturePath Trading, LLC ("FuturePath"), alleging infringement



of U.S. Patent nos. 6,772,132 ('132 patent) and 6,766,304 ('304 patent). In anticipation of a similar suit, Rosenthal Collins Group, Inc. ("RCG") brought a declaratory judgment suit against TT.<sup>1</sup> For the purposes of discovery and claim construction, the cases were assigned to this court for all common issues. A Markman hearing<sup>2</sup> was held, and we now construe the claims in dispute.

### BACKGROUND

The two patents-in-suit are nearly identical, and both relate to computer software used for electronic trading in the futures market. According to plaintiff, the software revolutionized the futures trading industry, allowing the trader to track the market depth of a commodity and visualize the changes in the inside market. In electronic trading art used prior to plaintiff's patented invention, the computer trading screen showed the changes in the inside market, but a rapidly fluctuating market often caused traders to miss their prices when entering an order at the exact time the inside market was moving. According to plaintiff's patents, "[i]f a trader intends to enter an order at a particular price, but misses the price because the market prices moved before he could enter the order, he may lose hundreds, thousands, even millions of dollars" ('132, 2:57-61; '304, 2:61-65). Prior art also lacked speed, requiring the trader to enter multiple elements of his or her trade before the order could be sent to the market.<sup>3</sup> Plaintiff's technology changed the electronic futures trading industry by

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<sup>1</sup>For the purposes of this motion, we will refer to all defendants and RCG, collectively, as "defendants."

<sup>2</sup>Markman v. Westview Instruments, Inc., 52 F.3d 967 (Fed.Cir.1995), *aff'd*, 517 U.S. 370 (1996).

<sup>3</sup>Defendants emphatically argue that plaintiff's technology is not novel and had been anticipated by prior art, thus suggesting that plaintiff's examples of prior art do not represent the entire field of prior art. We make no decision with regard to anticipation or invalidity at this stage in the construction. We only refer to plaintiff's examples of prior art to set up the major disputes regarding claim construction. Invalidity analysis is saved for another time.

allowing traders to quickly place an order without sacrificing accuracy. In order to do this, the software pairs a "static display of prices" ('132) or "common static price axis" ('304) with "dynamic displays" of "bid" and "ask" columns. The combination allows the trader to track the changing market prices without the prices shifting from under him or her. The user then places a bid or ask order in the "order entry region" through a "single action of a user input device," which allows for quicker transmission of the trade to the market.

Along with a number of additional claim terms, the terms indicated above constitute the primary disputes in claim construction. Claim 1 of each patent is a representative claim, and contains the major disputed terms for construction:

**'132 Claim 1: A method of placing a trade order for a commodity on an electronic exchange having an inside market with a highest bid price and a lowest ask price, using a graphical user interface and a user input device, said method comprising:**

- [1] setting a preset parameter for the trade order**
- [2] displaying market depth of the commodity, through a dynamic display of a plurality of bids and a plurality of asks in the market for the commodity, including at least a portion of the bid and ask quantities of the commodity, the dynamic display being aligned with a static display of prices corresponding thereto, wherein the static display of prices does not move in response to a change in the inside market;**
- [3] displaying an order entry region aligned with the static display prices comprising a plurality of areas for receiving commands from the user input devices to send trade orders, each area corresponding to a price of the static display of prices; and**
- [4] selecting a particular area in the order entry region through a single action of the user input device with a pointer of the user input device positioned over the particular area to set a plurality of additional parameters for the trade order and send the trade order to the electronic exchange.**

**'304 Claim 1: A method for displaying market information relating to and facilitating trading of a commodity being traded in an electronic exchange having an inside market with a highest bid price and a lowest ask price on a graphical user interface, the method comprising:**

[1] dynamically displaying a first indicator in one of a plurality of locations in a bid display region, each location in the bid display region corresponding to a price level along a common static price axis, the first indicator representing quantity associated with at least one order to buy the commodity at the highest bid price currently available in the market;

[2] dynamically displaying a second indicator in one of a plurality of locations in an ask display region, each location in the ask display region corresponding to a price level along the common static price axis, the second indicator representing quantity associated with at least one order to sell the commodity at the lowest ask price currently available in the market;

[3] displaying the bid and ask display regions in relation to fixed price levels positioned along the common static price axis such that when the inside market changes, the price levels along the common static price axis do not move and at least one of the first and second indicators moves in the bid or ask display regions relative to the common static price axis;

[4] displaying an order entry region comprising a plurality of locations for receiving commands to send trade orders, each location corresponding to a price level along the common static price axis; and

[5] in response to a selection of a particular location of the order entry region by a single action of a user input device, setting a plurality of parameters for a trade order relating to the commodity and sending the trade order to the electronic exchange.

#### DISCUSSION

Both parties agree that our claim construction should be guided by the Federal Circuit's *en banc* decision in Phillips v. AWH Corp., 415 F.3d 1303 (Fed.Cir.2005). In Phillips, the court addressed "the principal question...[of] the extent to which we should resort to and rely on a patent's specification in seeking to ascertain the proper scope of its claims." *Id.* at 1312. The Phillips court essentially held that while "[i]t is a 'bedrock principle' of patent law that 'the claims of a patent define the invention to which the patentee is entitled the right to exclude,' (*id.* at 1312; Nystrom v. Trex Co., Inc., 424 F.3d 1136, 1142 (Fed.Cir.2005)), ... [t]he construction that stays true to the claim language and most naturally aligns with the patent's

description of the invention will be, in the end, the correct construction.” Phillips, 415 F.3d at 1316.

We take the following from Phillips. In construing the claims of a patent we should look first to the claims themselves, which “provide substantial guidance as to the meaning of particular claim terms.” *Id.*, at 1314. As we determine the meaning of such claims, giving them the “ordinary and customary meaning...[they] would have to a person of ordinary skill in the art in question at the time of the invention,” we construe them in light of the “same resources as would [a person of ordinary skill in the art], *viz.*, the patent specification and the prosecution history.” *Id.*, at 1312-13. *See also C.R.Bard, Inc. v. United States Surgical Corp.*, 388 F.3d 858, 862 (Fed.Cir.2004) (“the intrinsic record is the primary source for determining claim meaning”). We can also look to the prosecution history to determine whether the patentee “clearly and unambiguously express[ed] surrender of subject matter during prosecution.” Sorenson v. International Trade Commission, 427 F.3d 1375, 1378 (Fed.Cir.2005). And finally, we can turn to extrinsic evidence – general purpose and technical dictionaries, and expert testimony, for example – to “shed useful light on the relevant art,” but must consider it only in the context of the intrinsic evidence, including the claim language, specification, and prosecution history. Phillips, 415 F.3d at 1317-18.

We will address each of the disputed terms in turn.

#### Static Display of Prices/Common Static Price Axis

The parties dispute the meaning of “static” in “static display of prices” and “common static price axis.” Plaintiff argues that the price axis is static, or unmoving, in relation to a change in the inside market. Plaintiff further argues that the patents limit the movement of the price axis in order to increase the likelihood that a trader will not miss his price.

Therefore, plaintiff encourages us to adopt a construction of “price levels that do not normally change positions when new market data reflecting a change in the inside market is received.” Defendants urge adoption of their various constructions, all of which limit movement of the price axis to a manual re-centering or re-positioning command. At the center of this fight is the question of automatic re-centering – do plaintiff’s patents cover automatic re-centering? Plaintiff answers in the affirmative and, not surprisingly, defendants answer in the negative.

Although our preliminary injunction construction aligned with plaintiff’s view, such construction was, simply put, preliminary. Jack Guttman, Inc. v. Kopykake Enterprises, Inc., 302 F.3d 1352, 1361 (Fed.Cir.2002) (“District courts may engage in a rolling claim construction, in which the court revisits and alters its interpretation of the claim terms as its understanding of the technology evolves”). Today we have a better understanding of the technology, and all parties have had the opportunity to flesh out their arguments.

We now choose to alter our initial construction, construing “common static price axis” as “a line comprising price levels that do not change positions unless a manual re-centering command is received and where the line of prices corresponds to at least one bid value and one ask value.” We construe “static display of prices” similarly, as “a display of prices comprising price levels that do not change positions unless a manual re-centering command is received.” Defendant eSpeed pointed us to MSN Encarta Dictionary to set forth the ordinary and customary definition of static: “motionless: not moving or changing, or fixed in position.” Our search of Webster’s II New College Dictionary yielded similar results: “Having no motion: at rest.” While we recognize that Phillips teaches us that a dictionary definition should only be used for context, Phillips also teaches that the “words of a claim ‘are generally given their ordinary and customary meaning,’...[which is] the meaning that the term would have to a

person of ordinary skill in the art in question at the time of the invention.” 415 F.3d at 1312-13. Plaintiff has given us no reason to think that such a person of ordinary skill in the art would construe “static” as anything other than non-moving at the time of the invention.<sup>4</sup>

If “static” ordinarily means non-moving, then we cannot see how we can construe it any other way. The only exception can be the one explicitly stated in the specifications and prosecution history – movement due to receipt of a manual re-centering command. If we were to construe the term inclusive of additional unstated exceptions, such as automatic re-centering, we would not know where to stop. Defendant eSpeed aptly asks, “Why is a price display which automatically recenters after every two seconds ‘static,’ but a price display which automatically recenters after every five seconds is not? Why is a price display that automatically recenters when the inside market exceeds three ticks from the center price is ‘static,’ but a price display which automatically recenters after every fifth tick is not?” (eSpeed’s post-Markman brief, at 6, n4). Plaintiff’s own argument raises the same questions. Plaintiff notes, “In fact, with eSpeedometer [which contains a slow drift recentering component,] a price level never suddenly changes position under a trader’s cursor causing him to miss his intended price. This is in contrast to the eSpeed product addressed by the Court at the PI hearing which provided for an instantaneous automatic recentering when the inside market moved off the top or bottom of the screen. Thus, eSpeedometer is more ‘static’ than eSpeed’s previous product because it provides the trader with virtually a 100% guarantee that

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<sup>4</sup>We do find it interesting that in all of plaintiff’s filed exhibits with regard to claim construction, including two dictionary excerpts, plaintiff has never argued that the ordinary and customary meaning of “static” is something other than stationary or non-moving.

he will not miss his intended price” (plf’s post-Markman brief, at 8-9, n6).<sup>5</sup> How can any movement be “more static”? What is static enough to fall within the ambit of plaintiff’s static construction? Because we cannot say, we must construe the term “static” in its ordinary meaning, non-moving, and allow for the only exception plainly stated in the written description: manual re-centering.

We find unpersuasive plaintiff’s argument that the patent only increases but does not guarantee the user’s likelihood of accurately selecting his desired price. Plaintiff’s patents are designed to achieve simultaneous goals: speed and accuracy. With regards to accuracy, the patent specification states, “The ‘Mercury’ display and trading method of the present invention *ensure* fast and accurate execution of trades by displaying market depth on a vertical or horizontal place, which fluctuates logically up or down, left or right across the plane as the market price fluctuates” (‘132, 3:5-9; ‘304, 3:9-13) (emphasis added). Like defendants, we read such language as a guarantee. It is only with regard to speed that the patents cannot guarantee accuracy – it is impossible to know how quickly a trader will process a desired price, move his hand to the user input device, and select the bid or ask region. It is with that in mind that the patent states “[t]he faster a trader can trade, the less likely it will be that he will miss his price and the more likely he will make money” (‘132, 2:60-62; ‘304, 2:65-67). We find that the purpose of the patents’ invention would be frustrated by the inclusion of any movement uncontrolled by the user. See Curtiss-Wright Flow Control Corp. v. Velan, Inc., 438 F.3d 1374, 1379-81 (Fed.Cir.2006) (limiting the claim term “adjustable” to the patent’s consistent description that adjustment occurs during operation of the de-header system, in part because

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<sup>5</sup>It is possible that eSpeed’s (or any other defendant’s) product will be considered “static” under the doctrine of equivalents, even under the current construction. Such analysis, however, is reserved for a future date.

**“[a]ny construction to the contrary is not consistent with the overall context of this invention and this field of art as described in the specification”). Thus, we are further convinced of our construction.**

**We take time to note that the construction of “common static price axis” includes the phrase, “where the line of prices corresponds to at least one bid value and one ask value.” We do so to clarify that with regard to the “line of prices,” orientation of the axis is irrelevant – it can be horizontal, vertical or angled, for example. We find that use of the claim language “common,” “corresponding to” and “aligned” are all used as synonyms for “in relationship with.” See *Id.*, 438 F.3d at 1380 (“this court has acknowledged that two claims with different terminology can define the exact same subject matter”). The specification’s language states that “Mercury displays market depth in a logical, vertical fashion or horizontally or at some other convenient angle or configuration” (‘304, 7:42-45, ‘132, 7:22-25). That market depth, which includes the best bid and the best ask, can be displayed on an angle gives further support to plaintiff’s contention that “common” connotes no more than a relationship between the price axis and the bid and ask display regions.**

**We also note our use of the term “price levels” in the construction of both “common static price axis” and “static display of prices.” While recognizing that the ‘132 patent does not use the term “price level” in the claims, as compared to the ‘304 patent, we find that the intrinsic evidence compels us to adopt such language in both constructions. We re-assert our preliminary injunction analysis regarding this issue: “the real issue is what ‘static display of prices’ means, and we understand that phrase to include price levels, which is where the prices are located and displayed. In other words, the display of prices is a region in which prices, represented by numbers, are shown.” Trading Technologies Int’l, Inc. v. eSpeed, Inc., 370**



F.Supp.2d 691, 699 (N.D.Ill.2005) (“Trading Technologies I”). We reject defendants’ contention that “price levels” are synonymous with prices or representation of prices. The written descriptions of both patents consistently refer to “price rows” and “price levels.” For example, “The market depth display shows the trader the interest the market has in a given commodity at different price levels” (‘304, 6:17-19, ‘132, 5:50-52). “The status of each order is displayed in the price row where it was entered” (‘304, 8:23-24, ‘132, 7:56-57). “Thus, a right click in the AskQ column in the 87 price row will send a sell order to market at a price of 87 and a quantity of 150” (‘304, 10:46-48, ‘132 10:8-10). “A left click would enter an order with a price corresponding to the price row clicked...” (‘304, 11:21-22, ‘132, 10:50-51).<sup>6</sup> Found in the preferred embodiment, it is clear that both patents intended to showcase a “price level” that was broader than simply price. Pfizer, Inc. v. Teva Pharmaceuticals, USA, Inc., 429 F.3d 1364, 1374 (Fed.Cir.2005) (“A claim construction that excludes a preferred embodiment...is ‘rarely, if ever, correct’”). Thus, we define “price level” as “a level on which a designated price or price representation resides.”

#### Dynamic Display/Dynamically Displaying

The parties dispute the meaning of the term “dynamic” in the claim language “dynamic display” and “dynamically displaying.” The defendants argue that “dynamic” requires movement, up or down the price axis, for example. Plaintiff contends that “dynamic” is captured by the updating of the bid and ask quantities as new information is received from the

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<sup>6</sup>Defendant eSpeed argues that the use of “price levels” with respect to Figure 2 (“The working bid and ask quantity for each price level is also displayed in columns 202 and 205 respectively” (‘304,5:27-29, ‘132, 5:23-25)), wherein 202 and 205 are on the same horizontal row, proves that “price levels” are synonymous with “prices.” Plaintiff counters by arguing that Figure 2 does contain “price levels” under its proposed construction – the trading screen has a level or region on which the price resides that does not extend across the entire row, as compared to patents’ preferred embodiments. We find plaintiff’s argument persuasive.

market. Based on our understanding of the record, we construe “dynamic display” to be “[a] display of a plurality of bids and asks that are updated in response to new market information such that the bids and asks change positions relative to the static display of prices when the market changes.” Updates based on the changing market data cause the displayed quantities of bids and asks to appear to move along the static price axis. Similarly, we construe “dynamically displaying” as “[u]pdating the first (second) indicator in response to new market information such that the first (second) indicator changes positions relative to the common static price axis when the market changes.”

Defendants argue that plaintiff disclaimed use of the term “update” during the prosecution of the patents. During that time, patentee’s counsel distinguished patentee’s invention from the Silverman *et al* prior art:

The present invention, as claimed, is patentable over the Silverman *et al.* references. As described above, the present invention includes a dynamic display for a plurality of bids and for a plurality of asks in the market for a given commodity and a static display of prices corresponding to the plurality of bids and asks for the commodity.... While it appears that both the central system book and the keystation book of the Silverman *et al.* references show a plurality of bids and asks for a given traded commodity, in contrast to the present invention, the references disclose that these pluralities are displayed “dynamically” only in the sense that the bids and offers are updated.... There is no disclosure that the listing of bids and asks actually *move* along any axis.

(Petition to Make Special, eSpeed claim construction, exh. F, eS64848-9). Based on this language, defendants argue that plaintiff cannot now reclaim in construction something patentee disclaimed during prosecution. They are correct in theory. See SanDisk Corp. v. Memorex Products, Inc., 415 F.3d 1278, 1286 (Fed.Cir.2005) (“The court must always consult the prosecution history, when offered in evidence, to determine if the inventor surrendered disputed claim coverage”). We do not think, however, that the patentee disclaimed the use of

**“update” in this case. The Petition to Make Special continues:**

**Furthermore, unlike the present invention, neither the central system book nor the keystation book of the Silverman et al. references includes a static display of prices corresponding to a plurality of bids and asks for a traded commodity. There being no static display of prices, the references also do not disclose that the pluralities of bids and asks are dynamically displayed in alignment with the prices corresponding thereto.”**

**(eSpeed claim construction, exh. F, at eS64849). Unlike plaintiff’s invention, the Silverman prior art did not combine the static display of prices with the dynamic display of bids and asks. Therefore, it *only* updated the prices. The present invention, by contrast, not only updates the prices, but because the bid and ask values are shown relative to the static price axis, the user can visually track the movement of the market by the movement of the bids and asks along the price axis. That visual shift, in addition to the updating, is what makes the plaintiff’s invention distinguishable from the Silverman *et al.* references.**

**Once we allow use of the term “updating” in construction of the claims, we address defendants’ additional arguments. Defendants point to such language as “[t]he values in the Bid and Ask columns however, are dynamic; that is, they move up and down (in the vertical example) to reflect the market depth for the given commodity” (amend. and reply, eSpeed claim construction, exh. E, eS64873). They argue that such language proves that the term “dynamic” must indicate movement specifically. We decline to adopt such language in the construction. Like the specification language, “The ‘Mercury’ display and trading method of the present invention ensure fast and accurate execution of trade by displaying market depth on a vertical or horizontal plane, which fluctuates logically up or down, left or right across the place as the market price fluctuates,” the prosecution history focuses “movement” on the market depth. Such a focus allows that the term “dynamic” alone can refer to updates**

received from the market, and the movement occurs simply because changed bid or ask values correspond to different prices in the static price display. Therefore, we construe “dynamic display” as “[a] display of a plurality of bids and asks that are updated in response to new market information such that the bids and asks change positions relative to the static display of prices when the market changes.” We construe “dynamically displaying” as “[u]pdating the first (second) indicator in response to new market information such that the first (second) indicator changes positions relative to the common static price axis when the market changes.” We construe “indicator” in its plain and ordinary meaning as “something that indicates.”

#### Order Entry Region

Both patents use the term “order entry region” in claim 1. During the preliminary injunction phase we construed the term to mean “an area comprising a plurality of locations where users may enter commands to send trade orders, and that each location corresponds to a price level along the common static price axis.” We see no reason to depart from that construction now.

Along with the debate over “single action of a user input device” (see below), the parties’ dispute centers on whether a pop-up window is covered under plaintiff’s patents. While that is clearly a question for another day, it can offer context for our construction analysis. See Wilson Sporting Goods Co. v. Hillerich & Bradsby Co., 442 F.3d 1322, 1326-27 (Fed.Cir.2006) (“While a trial court should certainly not prejudge the ultimate infringement analysis by construing claims with an aim to include or exclude an accused product or process, knowledge of that product or process provides meaningful context for the first step of the infringement analysis, claim construction”).

Like plaintiff’s patents as a whole, “order entry region” should be viewed from the

perspective of the user, not the computer. With that in mind we accept defendants' argument that "order entry region" is a location within the trading display where a user *sends* and not simply *initiates* an order. The patents' written descriptions consistently state that a selection within the order entry region does more than simply initiate an order, it sends or executes the order (*see, e.g.*, '304, 3:9-10; '132, 3:5-6 ("The 'Mercury' display and trading method of the present invention ensure fast and accurate execution of trades..."); '304, 3:26-28; '132, 3:22-24 ("...provide the trader with improved efficiency in placing, and thus executing, trade orders for commodities in an electronic exchange"); '304, 10:34-39; '132, 9:63-67 ("A left click on the 18 in the BidQ column will send an order to market to buy 17 lots...of the commodity at a price of 89"))). The prosecution history further reveals that patentee originally envisioned claim language that included "[a] method of...initiating placement of a trade order of the commodity through a single action of the user input device with a pointer of the user input device positioned over an area in said dynamic displays of bids and asks" (certified file history for U.S. Patent No. 6,772,132, eSpeed claim construction, exh. C, at eS64874). Over a year later, the patentee changed the focus of that claim, removing the language "initiating placement" and amending it to read, "method comprising...selecting a particular area in the order entry region through a single action of the user input device with a pointer of the user input device positioned over the particular area to set a plurality of additional parameters for the trade order and send the trade order to the electronic exchange" (*id.* at eS65203). Thus, from the perspective of the user, selection of an area in the order entry region is the final step in the trader's placement of an order at the market. In other words, the user need not do anything more before the order is entered at the market. If, however, the computer or the exchange had to perform additional steps before the order was actually filled at the exchange, such would

still fall within the ambit of “order entry region,” as construed herein.<sup>7</sup>

### Single Action of a User Input Device

Facing arguments overlapping with the “order entry region” debate, we once again see no need to depart from the construction we adopted during the preliminary injunction phase. Thus, we construe “single action of a user input device” to be “an action by a user within a short period of time that may comprise one or more clicks of a mouse button or other input device.” Defendant eSpeed has attempted to resuscitate its argument that “single action” must send a “single computer command to make the selection.” Again we reject such a limitation. eSpeed’s attempt harkens back to the pop-up window, and focuses the “single action” on the computer, rather than the user. As we have continually noted, however, plaintiff’s patents generally were written from the perspective of the user. Therefore, this claim refers to the user’s single action, not the action(s) the computer performs to execute the user’s command. Further, eSpeed’s reference to a single line in the prosecution history for support (“...a trader places a trade order with the pointer in the area of the order entry region of the dynamic market depth region, through a single computer implemented action...”) (notice of allowability, eSpeed claim construction, exh. G, at eS65384), without any support in the claim language or specification, is insufficient evidence for us to include such limiting language in the construction. See Phillips, 415 F.3d at 1317 (“because the prosecution history represents an ongoing negotiation between the PTO and the applicant, rather than the final product of that negotiation, it often lacks the clarity of the specification and thus is less useful for claim

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<sup>7</sup>Defendant eSpeed again attempts to insert the term “matched” into its construction. As we noted in our preliminary injunction analysis, “[t]he words ‘aligned’ and ‘corresponding’ do not mean ‘unambiguously matched’” (Trading Technologies I, 370 F.Supp.2d at 700), nor do they mean “matched.” As noted above, we construe both terms to mean “in relationship with,” which is a broader construction than “matched.”

construction purposes”).

Defendant CQG advocates limiting the construction of “single action” to a “single click or a double click of a user input device” and defendant RCG advances a construction focused on invalidity, using “double clicking a mouse button and striking the Enter Key” as an example of a single action. We reject both constructions. The patents’ specifications clearly state:

**[T]he specification refers to a single click of a mouse as a means for user input and interaction with the terminal display as an example of a single action of the user. While this describes a preferred mode of interaction, the scope of the present invention is not limited to the use of a mouse as the input device or to the click of a mouse button as the user’s single action. Rather, any action by a user within a short period of time, whether comprising one or more clicks of a mouse button or other input device, is considered a single action of the user for the purposes of the present invention.**

(‘132, 4:9-19; ‘304, 4:13-23). We will not disregard such a clear explanation. And, while the issue of double click/enter was repeatedly raised at the Markman hearing, invalidity is not before us at the moment, and therefore we decline to decide the issue during the construction phase.

#### **Additional Claim Terms**

In addition to the key terms discussed above, the parties dispute several additional minor claim terms. We discuss those now.

With respect to the display of the dynamic bid and ask regions, and static price axis, we construe “display of a plurality of bids and a plurality of asks” and “displaying the bid and ask display regions” as “a display of one or more bids and one or more asks.” eSpeed encourages us to limit the display to information that is displayed in a single window. We decline to do so. The claim contains no such limitation and while the preferred embodiment

does suggest a single window display, we will not import such limitations into the claims. *See Wilson Sporting Goods, Co.*, 442 F.3d at 1329 (“This court...declines to read a limitation from the written description into the claims”); *Innova/Pure Water, Inc. v. Safari Water Filtration Systems, Inc.*, 381 F.3d 1111, 1117 (Fed.Cir.2004) (“particular embodiments appearing in the written description will not be used to limit claim language that has broader effect”).

Both patents use the term “parameter” in the claim language. For example, claim 1 of the ‘304 patent claims “in response to a selection of a particular location of the order entry region by a single action of a user input device, setting a plurality of parameters for a trade order...” Claim 1 of the ‘132 patent claims “setting a preset parameter for the trade order” and “selecting a particular area in the order entry region through single action of the user input device with a pointer of the user input device positioned over the particular area to set a plurality of additional parameters for the trade order...” Although the preset parameters and the additional parameters may be different, in all cases the term “parameter” means “an element of a trade order, including, but not limited to, quantity, price, type of order and the identity of the commodity.” Defendants encourage us to limit our construction to the listed parameters. The specifications, however, state: “Similarly, every exchange requires that certain information be included in each order. For example, traders must supply information like the name of the commodity, quantity, restrictions, price and multiple other variables.” As defendants’ constructions do not account for restrictions or “multiple other variables,” they cannot be correct.

Both patents also refer to “when the market changes.” Patent ‘304’s claims 1 and 27 use the term, claiming: “displaying the bid and ask display regions in relation to fixed price levels positioned along the common static price axis such that when the inside market changes,



the price levels along the common static price axis do not move and at least one of the first and second indicators moves in the bid or ask display regions relative to the common static price axis." Patent '132's claim 14 states: "[A] display device for displaying market depth of a commodity, through a dynamic display of a plurality of bids and a plurality of asks in the market for the commodity, including the bid and ask quantities of the commodity, aligned with a static display of prices corresponding thereto, wherein the static display of prices does not move when the inside market changes...." Although we do not view the parties' constructions as diametrically opposed to one another, we accept plaintiff's construction. "When the market changes" is construed as "at the time that new data reflecting a change in the inside market is received." Plaintiff, and this construction, recognizes that "when" is not synonymous with "instantaneously." Rather, "when" encompasses the concept that the update will not appear on the trader's screen until the software and/or computer receives, processes, and displays the new market information.

Finally, we turn to "trade order." In the '132 patent, patentee claims "displaying an order entry region...for receiving commands from the user input devices to send trade orders..." and "selecting a particular area in the order entry region...to set a plurality of additional parameters for the trade order and send the trade order to the electronic exchange." The '304 patent claims "displaying an order entry region comprising a plurality of locations for receiving commands to send trade orders..." and "in response to a selection of a particular location of the order entry region by a single action of a user input device, setting a plurality of parameters for a trade order relating to the commodity and sending the trade order to the electronic exchange." We construe "trade order" as "a single, electronic message in executable form that includes at least all required parameters of a desired trade." Plaintiff's main

concern is with the term “executable.” Plaintiff argues that use of “executable” is inconsistent with Figure 1, which shows how a system can be configured to allow for trading in multiple exchanges simultaneously. The figure shows how a user’s computer is hooked up to the exchange through a series of routers and gateways. Further, the written description states that “[w]hen the system is configured to receive data from multiple exchanges, then the preferred implementation is to translate the data from various exchanges into a simple format” (‘132, 4:28-32; ‘304, 4:32-35). Plaintiff asserts that a trade order in executable form would be contrary to the translation function. We disagree. First, we note that the patents use the term “execute” throughout the written description. For example, “These embodiments, and others described in greater detail herein, provide the trader with improved efficiency and versatility in placing, and thus executing, trade orders for commodities in an electronic exchange” (‘132, 3:21-24; ‘304, 3:25-28). Second, we note that the term “executable,” as used in this construction, must be viewed from the perspective of the user, not the computer. Once the trader has selected an area in the order entry region, and sent the trade to the market, the user need do nothing further to execute the order. Thus, from the perspective of the trader, the trade has been executed, and must have been in executable form. As with the constructions of “single action” and “order entry region,” however, if the computer must perform additional steps or route the order through a router or gateway, such would still fall within the ambit of “trade order,” as construed herein.

#### Means-Plus-Function

GL and FuturePath argue that ‘132 patent claim 8 is a “means-plus-function” claim subject to the limitations of 35 U.S.C. § 112, ¶ 6 (1994). The statute states:

An element in a claim for a combination may be expressed as a means or step

for performing a specified function without the recital of structure, material, or acts in support thereof, and such claim shall be construed to cover the corresponding structure, material, or acts described in the specification and equivalents thereof.

Paragraph 6 was included in the statute to “allow the use of means expressions in patent claims without requiring the patentee to recite in the claims all possible structures that could be used as means in the claimed apparatus.” Med. Instrumentation and Diagnostics Corp. v. Elekta AB, 344 F.3d 1205, 1211 (Fed.Cir.2003) (citing O.I. Corp. v. Tekmar Co., 115 F.3d 1576, 1583 (Fed.Cir.1997)). The Federal Circuit further held, however, that “[t]he price that must be paid for use of that convenience is limitation of the claim to the means specified in the written description and equivalents thereof.” *Id.* Based on that reasoning, GL and FuturePath assert that claim 8 is a means-plus-function claim, that neither the claim itself nor the specifications provide sufficient structure to fulfill the stated functions, and that, therefore, claim 8 and claims dependent thereon are invalid.

First, we must determine whether claim 8 is a means-plus-function claim. The claim reads:

A computer readable medium having program code recorded thereon, for execution on a computer having a graphical user input device, to place a trade order for a commodity on an electronic exchange having an inside market with a highest bid price and a lowest ask price, comprising:

- [1] a first program code for setting a preset parameter for the trade order;
- [2] a second program code displaying market depth of a commodity, through a dynamic display of a plurality of bids and a plurality of asks in the market for the commodity, including the bid and ask quantities of the commodity, aligned with a static display of prices corresponding thereto, wherein the static display of prices does not move in response to a change in the inside market;
- [3] a third program code for displaying an order entry region comprising plurality of areas for receiving commands from the user input device to send trade orders, aligned with the static display of prices, each area corresponding to a price of the static display of prices; and
- [4] a fourth program code for receiving a command as a result of a selection

of a particular area in the order entry region by a single action of the user input device with a pointer of the user input device positioned over the particular area, to set a plurality of additional parameters for the trade order and send the trade order to the electronic exchange.

**'132, Claim 8.**

In determining whether a claim falls under the ambit of § 112, ¶ 6, we first look to whether the claim language itself includes the term “means.” The Federal Circuit has “made clear that use of the term ‘means’ is central to the analysis: ‘the use of the term ‘means’ has come to be so closely associated with ‘means-plus-function’ claiming that it is fair to say that the use of the term ‘means’ (particularly as used in the phrase ‘means for’) generally invokes [§ 112, ¶ 6] and that the use of a different formulation generally does not.’” Personalized Media Communications, LLC v. Int’l Trade Commission, 161 F.3d 696, 703 (Fed.Cir.1998). Thus, both parties agree that because Claim 8 does not employ the term “means” or “means for,” there is a presumption that the claim is not a means-plus-function claim. The presumption can be rebutted, however, if the intrinsic evidence so warrants, and “the focus remains on whether the claim as properly construed recites sufficiently definite structure to avoid the ambit of § 112, ¶ 6.” *Id.*, at 704.

GL and FuturePath argue that claim 8 does not provide sufficient structure to remove it from the scope of § 112, ¶ 6, regardless of the fact that the claim language does not include the term “means.” Specifically, they argue that the claim asserts four functions, and that the term “program code” is insufficient to provide accompanying structure through which to perform the stated functions. We agree that claim 8 provides four functions, or outcomes. We disagree, however, that “program code” is insufficient to provide sufficient structure.

In determining whether a claim provides sufficient structure to remove it from § 112,

¶ 6, the Federal Circuit has not required the claim term to set forth a specific structure. Rather, “it is sufficient if the claim term is used in common parlance or by persons of skill in the pertinent art to designate structure, even if the term covers a broad class of structures and even if the term identifies the structures by their function.” Lighting World, Inc. v. Birchwood Lighting, Inc., 382 F.3d 1354, 1359-60 (Fed.Cir.2004). The term “code,” with regard to computer technology, is defined as: “In software engineering, computer instructions and data definitions expressed in a programming language or in a form output by an assembler, compiler, or other translator.” THE NEW IEEE STANDARD DICTIONARY OF ELECTRICAL AND ELECTRONICS TERMS, FIFTH ED. (1993). Such a definition is not a “generic structural term such as ‘means,’ ‘element,’ or ‘device’; nor is it a coined term lacking a clear meaning, such as ‘widget’ or ‘ram-a-gram.’” Personalized Media Communications, 161 F.3d at 704 (finding that “digital detector” was sufficient structure to remove a claim from § 112, ¶ 6). *See also* Affymetrix, Inc. v. Hyseq, Inc., 132 F.Supp.2d 1212, 1231-32 (N.D.Cal.2001) (finding that “computer code” recited a sufficient structure, understood by one skilled in the art, to be able to accomplish the stated functions); Harmonic Design, Inc. v. Hunter Douglas, Inc., 88 F.Supp.2d 1102, 1105 (C.D.Cal.2000) (finding that “electronic circuit” recited sufficient structure). We turn to the recent case of Massachusetts Institute of Technology and Electronics For Imaging, Inc. v. Abacus Software, \_\_\_ F.3d \_\_\_, 2006 WL 2613439 (Fed.Cir.2006) for analysis assistance. There, the Federal Circuit, in analyzing claim language of two claims, neither of which employed the term “means,” determined that one should be viewed as a means-plus-function claim and the other should not. First, the court determined that the term “colorant selection mechanism” invoked § 112, ¶ 6 because “mechanism” was used synonymously with means, “colorant selection” was defined in neither a dictionary nor

the specification, and there was no indication that “colorant selection” had a generally understood meaning. *Id.*, at \*7-8. In contrast, the court found that “aesthetic correction circuitry” did not fall within the ambit of § 112, ¶ 6. The court noted that dictionary definitions establish that the term “circuitry,” by itself, connotes structure, pointing to, for example, Linear Tech. Corp. v. Impala Linear Corp., 379 F.3d 1311, 1320 (Fed.Cir.2004), which relied on the Dictionary of Computing’s definition of “circuit” as “the combination of a number of electrical devices and conductors that, when interconnected to form a conducting path, fulfill some desired function.” The definition of “code,” noted above, places “program code” in a category more analogous to the court’s analysis of “aesthetic correction circuitry,” than “colorant selection mechanism.” *See also* WEBSTER’S II NEW COLLEGE DICTIONARY 2001, 216 (defining “code” with respect to computer science as “A set of symbols and rules used to represent instructions to a computer”).

GL’s and FuturePath’s use of Altiris, Inc. v. Symantec Corp., 318 F.3d 1363 (Fed.Cir.2003), is of no assistance to their argument in this case. In Altiris, the claim included the language “means of,” and therefore the court began with the presumption of means-plus-function. Such is not the case here. Mas-Hamilton Group v. LaGard, Inc., 156 F.3d 1206 (Fed.Cir.1998), can be distinguished as well. In Mas-Hamilton, the Federal Circuit affirmed a district court’s reading of means-plus-function into a claim for a “lever moving element,” even where the claim did not utilize the term “means.” The Mas-Hamilton court found it persuasive that LaGard could not point to any evidence demonstrating that the term “lever moving element” was reasonably well understood in the art. 156 F.3d at 1214. Such is not the case here. In addition to the case law discussed above, plaintiff pointed us to the Manual of Patent Examining Procedure (U.S. Dep’t of Commerce, MANUAL OF PATENT EXAMINING

PROCEDURE, (8<sup>th</sup> ed. 2001, rev. Oct. 2005)), wherein the guidelines indicate that “a claimed computer-readable medium encoded with a data structure defines structural and functional interrelationships between the data structure and the computer software and hardware components which permit the data structure’s functionality to be realized, and is thus statutory.”<sup>8</sup> Although the guidelines are not binding, they do provide some evidence that computer-readable mediums, such as the one claimed in claim 8, are known in the art to include a structural component.

Defendants GL and FuturePath argue that the fact that the patent’s inventors admit that they struggled for over two years to reduce the invention to practice “makes abundantly clear that the ‘program code...’ limitations in the context of the ‘132 Patent, do not use simple, off-the-shelf programs that one skilled in the art can readily implement without undue experimentation” (defs’ reply at 5). We do not buy such an argument. Here, defendants’ allegedly infringing products have managed to create systems that seemingly realize the functions stated in claim 8 – set preset parameters, display market depth, display an order entry region, and receive a single action command. While we make no determination of infringement, it seems to us that the inventors or developers of defendants’ products, all of whom are reasonably skilled in the art, were either able to develop plaintiff’s (or another’s) program codes, or develop their own. Thus, either plaintiff supplied sufficient structure to develop its claimed program codes or one reasonably skilled in the art was able to develop the codes independently. Either way, plaintiff wins this argument.

Because we begin with the presumption that claim 8 is not a means-plus-function claim,

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<sup>8</sup>Defendants GL and FuturePath argue that the MPEP only allows for the patenting of computer systems where a specific data structure is coupled with a computer-readable medium. We agree, but find that “program code” provides sufficient structure for the reasons stated herein.


and because defendants GL and FuturePath have failed to rebut that presumption, we find that claim 8 does not come within the ambit of § 112, ¶ 6.

In their motion for partial summary judgment, defendants GL and FuturePath also argue that patent '304's claim 27 is invalid and therefore unenforceable. Their argument relies on the Federal Circuit's decision in IPXL Holdings, L.L.C. v. Amazon.com, Inc., 430 F.3d 1377 (Fed.Cir.2005), wherein the court, on a motion for summary judgment, adopted the determination of the Board of Patent Appeals and Interferences of the PTO that a claim covering both an apparatus and method is invalid for indefiniteness under 35 U.S.C. § 112, ¶ 2. Paragraph 2 states: "The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention." We did request that plaintiff address the portions of defendants GL's and FuturePath's motion for partial summary judgment relevant to claim construction. And defendants are correct that indefiniteness is relevant to claim construction. *See, e.g., Energizer Holdings, Inc. V. Int'l Trade Comm'n*, 435 F.3d 1366, 1371 (Fed.Cir.2006) ("A claim that is amenable to construction is not invalid on the ground of indefiniteness"). GL's and FuturePath's arguments on indefiniteness, however, request that the entire claim 27 be deemed invalid. Defendants' motion points to no specific term(s) in claim 27 requiring construction, and thus we will leave the invalidity debate for another day.

#### CONCLUSION

For the reasons stated above, we so construe the relevant claims of the '132 and '304 patents.

Oct. 31, 2006.

  
\_\_\_\_\_  
JAMES B. MORAN  
Senior Judge, U. S. District Court



# EXHIBIT 5



**IN THE UNITED STATES DISTRICT COURT  
FOR THE NORTHERN DISTRICT OF ILLINOIS  
EASTERN DIVISION**

Trading Technologies International, Inc., Plaintiff,	)	
vs.	)	
eSpeed, Inc., eSpeed International, Ltd., Ecco LLC, and Ecco Ware Ltd., Defendants.	)	No. 04 C 5312 Judge Moran
<hr/>		
Trading Technologies International, Inc., Plaintiff,	)	
vs.	)	
Refco Group Ltd., LLC, et al., Defendants.	)	No. 05 C 1079 Judge Andersen
<hr/>		
Rosenthal Collins Group, LLC, Plaintiff-Counterclaim Defendant,	)	
vs.	)	
Trading Technologies International, Inc., Defendant-Counterclaimant,	)	No. 05 C 4088 Judge Moran
<hr/>		
Trading Technologies International, Inc., Plaintiff,	)	
vs.	)	
GL Consultants, Inc. and GL Trade SA, Defendants.	)	No. 05 C 4120 Judge Gottschall
<hr/>		
Trading Technologies International, Inc., Plaintiff,	)	
vs.	)	
CQGT, LLC and CQG, Inc., Defendants.	)	No. 05 C 4811 Judge Moran
<hr/>		
Trading Technologies International, Inc., Plaintiff,	)	
vs.	)	
FuturePath Trading, LLC, Defendant.	)	No. 05 C 5164 Judge Shadur

All Cases Assigned to Judge  
Moran For Common Issues

**MEMORANDUM OPINION AND ORDER**

Plaintiff Trading Technologies International, Inc. ("TT") brought separate patent infringement suits against defendants eSpeed, Inc., ITSEcco Holdings Limited, Ecco LLC, and Ecco Ware Limited (collectively "eSpeed"); GL Consultants Inc. ("GL"); CQGT, LLC and CQG, Inc. (collectively "CQG"); and FuturePath Trading, LLC ("FuturePath"). In anticipation of a similar suit, Rosenthal Collins Group, Inc. ("RCG") brought a declaratory

judgment action against TT.<sup>1</sup> After a three-day Markman hearing<sup>2</sup> and consideration of an avalanche of briefs and exhibits, the court construed the disputed claims of U.S. Patent nos. 6,772,132 ('132 patent) and 6,766,304 ('304 patent) ("TT Markman I"). Soon after the entry of the court's claim construction order, TT filed this motion for clarification of the scope of the claim construction, or in the alternative, for reconsideration.<sup>3</sup> For reasons stated herein, plaintiff's motion for clarification or reconsideration is denied in part.

### **BACKGROUND**

Plaintiff's nearly identical patents relate to computer software used for electronic trading in the futures industry. Specifically, plaintiff patented a "method and system for reducing the time it takes for a trader to place a trade when electronically trading on an exchange, thus increasing the likelihood that the trader will have orders filled at desirable prices and quantities" ('132, Abstract; '304, Abstract). To achieve such results, plaintiff's patents combine a common static price axis with a dynamic display of prices, and include a single action order entry region.<sup>4</sup> Although our TT Markman I opinion construed a number of claims, plaintiff only takes issue with two: "static" and "plurality."

Defendants view plaintiff's motion primarily as a motion to reconsider. Although plaintiff's motion does not explicitly state that it brings such a motion pursuant to Federal Rule of Civil Procedure 59(e), such is our assumption. Plaintiff disputes such a characterization: "TT's motion is a motion to clarify in the first instance because each side is interpreting the Court's construction of 'static' differently" (TT's reply, at 1). Motions for reconsideration are rarely granted -- they serve a narrow function and must be supported by a showing of

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<sup>1</sup>In this order, we refer to all defendants and RCG, collectively, as "defendants."

<sup>2</sup>Markman v. Westview Instruments, Inc., 52 F.3d 967 (Fed.Cir.1995), *aff'd* 517 U.S. 370 (1996).

<sup>3</sup>TT Markman I was entered on October 31, 2006. Plaintiff filed this motion on November 20, 2006.

<sup>4</sup>For a full background and explanation of the patents, see TT Markman I.

extraordinary circumstances. Mahurkar v. C.R. Bard, Inc., 2003 WL 22844237, \*1 (N.D.Ill.2003) (citing Caisse Nationale de Credit Agricole v. CBI Indus., Inc., 90 F.3d 1264, 1269 (7<sup>th</sup> Cir.1996)). Motions to reconsider are solely designed to “correct manifest errors of law or fact or to present newly discovered evidence.” *Id.* (citing Publishers Resource, Inc. v. Walker-Davis Publications, Inc., 762 F.2d 557, 561 (7<sup>th</sup> Cir.1985)). Because motions to reconsider face a higher standard of review, and plaintiff has persuasively argued the parties’ differing interpretations of this court’s Markman ruling, we give plaintiff the benefit of the doubt and view its motion primarily as one to clarify.

#### DISCUSSION

We begin with plaintiff’s primary concern – our previous construction of “static.” In TT Markman I, we construed “common static price axis” (‘304 patent) as “a line comprising price levels that do not change positions unless a manual re-centering command is received and where the line of prices corresponds to at least one bid value and one ask value.” 2006 WL 3147687, at \*4. Similarly, we construed “static display of prices” (‘132 patent) as “a display of prices comprising price levels that do not change positions unless a manual re-centering command is received.” *Id.* Plaintiff assures us that it does not take issue with our construction, but urges clarification that the claim element would be met “if the accused product ever embodies the claimed element, irrespective of how long it does so or whether such a product also has the capacity to act in an uncovered manner” (TT’s motion, at 1).

Analysis of a patent infringement claim is a two-step process. First, we construe the claims, an issue of law for the court to determine. Warner-Lambert Co. v. Teva Pharmaceuticals USA, Inc., 418 F.3d 1326, 1340 (Fed.Cir.2005). Second, we compare the accused product or process to the properly construed claims, an issue of fact for the fact-finder.

~~*Id.*~~ Plaintiff’s patent infringement claim will be successful “only where the accused product or

process contains each limitation of the claim, either literally or under the doctrine of equivalents.” *Id.* (citing Deering Precision Instruments, L.L.C. v. Vector Distrib. Sys., Inc., 347 F.3d 1314, 1324 (Fed.Cir.2003)). Defendants argue that plaintiff is conflating the two steps. By arguing that defendants’ products may still infringe on plaintiff’s patents under a part-time infringement theory, eSpeed suggests that TT is putting the cart before the horse. eSpeed contends that “[t]he theory of part-time infringement is not a canon of claim construction and does not override the plain meaning of the claim or the disclosures in the specification and file history.... It is the claim construction, which is derived from the plain meaning of the claim and intrinsic evidence, that dictates whether the theory of part-time infringement has any relevance to the infringement analysis. Under the plain meaning of the claim and the Court’s claim construction, part-time infringement is inapplicable because a price axis that moves other than through a manual re-centering command is not a static one” (eSpeed response, at 5).

We agree with defendants that the analysis of part-time infringement is, as the name implies, one of comparison – the second step of patent infringement analysis. Because there seems to be some confusion on the construction of the term “static,” however, we will address the merits of plaintiff’s arguments. Specifically, we will address whether the term “static” in “common static price axis” and “static display of prices” requires a permanent state of lack of movement.

Plaintiff’s arguments center on two overlapping principles. First, plaintiff contends that Claim 1 of each patent-in-suit is an open claim, designated by the term “comprising” in its preamble. Plaintiff asserts that such a claim does not preclude the existence of additional unrecited features of an accused product or process. Second, plaintiff asserts that part-time infringement – infringement for any length of time, regardless of whether the accused product or process also has times of non-infringement – covers its claims. Although plaintiff’s briefs

imply that the two arguments are part of the same theory, we are not so sure. TT's "comprising" argument seems to assert that automatic re-centering is an unrecited additional feature that is made possible by the fact that the price axis was already in a static condition (TT reply, at 2). We read that to mean that the automatic re-centering is separate from the static claim limitation. TT's part-time infringement theory, on the other hand, seemingly suggests that the mere presence of a static price axis – regardless of whether it moves at some time – is still infringing (*id.*, at 1). In our view, such an argument suggests that automatic re-centering takes an accused product or process out of the purview of plaintiff's patent protection, but only for the split second that it is moving, so that the time when the accused product's price axis is not moving, it is still infringing. Ultimately, however, plaintiff's arguments both suggest that the addition of movement does not preclude a finding of infringement.

We begin by assessing plaintiff's "comprising" argument. To do so, we must lay out Claim 1 of each patent-in-suit. Patent '304, Claim 1, reads:

**A method for displaying market information relating to and facilitating trading of a commodity being traded in an electronic exchange having an inside market with a highest bid price and a lowest ask price on a graphical user interface, the method comprising:**

- [1] dynamically displaying a first indicator in one of a plurality of locations in a bid display region, each location in the bid display region corresponding to a price level along a *common static price axis*, the first indicator representing quantity associated with at least one order to buy the commodity at the highest bid price currently available in the market;**
- [2] dynamically displaying a second indicator in one of a plurality of locations in an ask display region, each location in the ask display region corresponding to a price level along the *common static price axis*, the second indicator representing quantity associated with at least one order to sell the commodity at the lowest ask price currently available in the market;**
- [3] displaying the bid and ask display regions in relation to fixed price levels positioned along the *common static price axis* such that when the inside market changes, the price levels along the *common static price axis* do not move and at least one of the first and second indicators moves in the bid or ask display regions relative to the *common static price axis*;**
- [4] displaying an order entry region comprising a plurality of locations for receiving commands to send trade orders, each location**

corresponding to a price level along the *common static price axis*; and [5] in response to a selection of a particular location of the order entry region by a single action of a user input device, setting a plurality of parameters for a trade order relating to the commodity and sending the trade order to the electronic exchange.

Patent '132, Claim 1, reads:

A method of placing a trade order for a commodity on an electronic exchange having an inside market with a highest bid price and a lowest ask price, using a graphical user interface and a user input device, said method *comprising*:

- [1] setting a preset parameter for the trade order
- [2] displaying a market depth of the commodity, through a dynamic display of a plurality of bids and a plurality of asks in the market for the commodity, including at least a portion of the bid and ask quantities of the commodity, the dynamic display being aligned with a *static display of prices* corresponding thereto, wherein the *static display of prices* does not move in response to a change in the inside market;
- [3] displaying an order entry region aligned with the *static display prices* comprising a plurality of areas for receiving commands from the user input devices to send trade orders, each area corresponding to a price of the *static display of prices*; and
- [4] selecting a particular area in the order entry region through single action of the user input device with a pointer of the user input device positioned over the particular area to set a plurality of additional parameters for the trade order and send the trade order to the electronic exchange.

Plaintiff correctly notes that the addition of unclaimed unrecited elements does not traditionally defeat a finding of infringement where the patent uses an open transitional phrase such as "comprising." Free Motion Fitness, Inc. v. Cybex Int'l, Inc., 423 F.3d 1343, 1347 (Fed.Cir.2005); CollegeNet, Inc. v. ApplyYourself, Inc., 418 F.3d 1225, 1235 (Fed.Cir.2005); Gillette Co. v. Energizer Holdings, Inc., 405 F.3d 1367, 1371 (Fed.Cir.2005). Therefore, when the term "comprising" appears in the preamble of the claim, as it does here, it is generally read to mean including, but not limited to, the following elements. Nazomi Communications, Inc. v. Arm Holdings, PLC, 403 F.3d 1364, 1370 (Fed.Cir.2005) ("Comprising' is often synonymous with 'including'"); Crystal Semiconductor Corp. v. TriTech Microelectronics Int'l, Inc., 246 F.3d 1336, 1348 (Fed.Cir.2001) ("In the parlance of patent law, the transition 'comprising'

creates a presumption that the recited elements are only a part of the device, that the claim does not exclude additional, unrecited elements”).

Plaintiff’s “comprising” argument, however, fails. Unlike many of the cases cited by plaintiff, its patents’ claims include a limitation of a static or non-moving condition.<sup>5</sup> Any movement takes a product or process outside the scope of plaintiff’s claim. See W.E. Hall Co., Inc. v. Atlanta Corrugating, LLC, 370 F.3d 1343 (Fed.Cir.2004) (where an accused product failed to meet each of the elements or limitations required by the claim language itself, a partially open transition term could not enlarge the scope of the claim); Moleculon Research Corp. v. CBS, Inc., 793 F.2d 1261 (Fed.Cir.1986) (the term “comprising” did not affect the scope of the particular structure recited within the method claim’s step). Unlike Smith & Nephew, Inc. v. Ethicon, Inc., 276 F.3d 1304 (Fed.Cir.2002), failure to include movement of the static price axis in plaintiff’s claims would not exclude a reasonable practice taught in the specification of the patent. And unlike CollegeNet, Inc., 418 F.3d at 1235, failure to include movement of the static price axis in plaintiff’s claims would not be inconsistent with the problems the invention sought to redress. Rather, including movement of the static price axis would work against the patents’ stated purpose: “If a trader intends to enter an order at a particular price, but misses the price because the market prices moved before he could enter the order, he may lose hundreds, thousands, even millions of dollars” (‘304, 2:61-65, ‘132, 2:57-61). It is a basic principle of patent law that an infringing use of a patented method or claim requires practice of every limitation of the claim or every step of the method. Zoltek Corp. v.

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<sup>5</sup>We have already determined that “static” means non-moving. TT Markman I, 2006 WL 3147697. In addition to the plain and ordinary meaning we focused on in TT Markman I, we also note several instances in the intrinsic record suggesting such a construction. See, e.g., ‘304, 7:65-67 (“The values in the price column are static; that is, they do not normally change positions unless a re-centering command is received...”); Amendment and Reply under 37 CFR § 1.111 (eSpeed Markman exhibits, Exh. E, at eS0000064873) (same); Notice of Allowability (*id.*, Exh. OO, at eS0000064919) (“The static display, directed to the commodity price, does not change”).



U.S., 442 F.3d 1345, 1359 (Fed.Cir.2006). Addition of the term “comprising” does not remove the limitations that are present in the claim. Power Mosfet Technologies, L.L.C. v. Siemens AG, 378 F.3d 1396, 1409 (Fed.Cir.2004). Therefore, we do not read “comprising” as allowing some movement of the static price axis. Our earlier constructions remain, and we clarify that the price axis never changes positions unless by manual re-centering or re-positioning.

Once we determine that the term “comprising” does not allow for any movement of the static price axis, it is easy to dispose of plaintiff’s part-time infringement argument. Plaintiff correctly points out that “an accused product that sometimes, but not always, embodies a claimed method nonetheless infringes.” Bell Communications Research, Inc. v. Vitalink Communications Corp., 55 F.3d 615, 622 (Fed.Cir.1995). The statute governing patent infringement, 35 U.S.C. § 271(a) (2003), also suggests that any infringement – even *de minimis* infringement – is actionable; the level of infringement is a question of damages, not liability. Embrex, Inc. v. Service Engineering Corp., 216 F.3d 1343, 1352-53 (Fed.Cir.2000) (Rader, J., concurring). Where, however, the claim limitation itself – here, a static condition – requires permanency, any movement (outside of manual re-centering or re-positioning) negates one of the specified claim limitations. Therefore, introduction of such movement takes an accused device out of the protection of plaintiff’s patents.

The situation at hand is different from those cases finding part-time or *de minimis* infringement. For example, the court in Seal-Flex, Inc. v. Athletic Track and Court Const., 172 F.3d 836, 845 (Fed.Cir.1999) found infringement where defendant’s customary method was non-infringing, and defendant only used plaintiff’s patented method one time. Or, in SmithKline Beecham Corp. v. Apotex Corp., 403 F.3d 1331, 1341-42 (Fed.Cir.2005), the Federal Circuit affirmed the district court’s determination that trace amounts of the patented compound found in the infringing device would infringe under the construction of the claims.

Or, in Embrex, 216 F.3d 1343, the court found infringement when defendants engaged in testing for commercial purposes using plaintiff's patented technology. In this case, in order to literally infringe, defendants must practice all elements of plaintiff's patented technology. Zoltek Corp., 442 F.3d at 1359. Therefore, any movement of the static price axis leaves accused technology outside the protection of plaintiff's patents.

Plaintiff makes various other arguments and points to various extrinsic evidence in support of its position that any period of a static condition falls within our construction of "common static price axis" and "static display of prices." None is persuasive. We have already determined the influence of the phrase "ensure fast and accurate execution" in the claim construction. Free Motion Fitness, a case cited by plaintiff to support its argument that the patents did not guarantee accuracy, tells us "to scrutinize the intrinsic evidence in order to determine the most appropriate definition" of a claim term. 423 F.3d at 1348-49. That is exactly what we did – we turned to the specification, which suggested that the patented technology would "ensure fast and accurate execution" to construe "common static price axis" and "static display of prices." Thus, we need not alter our construction. And the extrinsic evidence presented – in light of our construction, based almost entirely on intrinsic evidence – will not change our construction.

Finally, plaintiff requests that we reconsider our construction of the term "plurality," in the '132 patent. In our previous order we construed "display of a plurality of bids and plurality of asks," and "displaying the bid and ask display regions," as "a display of one or more bids and one or more asks." TT Markman I, 2006 WL 3147697, at \*9. Suggesting that "[i]t is well established in patent law that the term of art 'a plurality' calls for 'more than one,' and thus precludes 'one' from the definition" (TT's motion, at 14), TT argues that we erred in our construction. None of the defendants addressed plaintiff's contentions and, therefore, we

assume none has a strong disagreement with plaintiff's construction.<sup>6</sup> As the term "plurality" has been previously construed in patents to mean "more than one," "at least two," and "two or more" (Bilstad v. Wakalopoulos, 386 F.3d 1116, 1123 (Fed.Cir.2004); ResONet.com, Inc. v. Lansa, Inc., 346 F.3d 1374, 1383 (Fed.Cir.2003); York Products, Inc. v. Central Tractor Farm & Family Center, 99 F.3d 1568, 1575 (Fed.Cir.1996); NCR Corp. v. Palm, Inc., 217 F.Supp.2d 491, 508 (D.Del.2002)), and the ordinary meaning of plurality is "[t]he state or fact of being plural" (WEBSTER'S II NEW COLLEGE DICTIONARY (2001)), we grant plaintiff's motion to reconsider. We construe "display of a plurality of bids and plurality of asks" as "a display of more than one bid and more than one ask."

#### CONCLUSION

For reasons as stated above, we deny in part plaintiff's motion to reconsider.

  
\_\_\_\_\_  
JAMES B. MORAN  
Senior Judge, U. S. District Court

Feb. 20, 2007.

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<sup>6</sup>CQG includes an unenlightening footnote on the subject. It reads, in relevant part: "To the extent that the Court decides it is appropriate to reconsider 'plurality' as it is used in terms such as 'dynamic display of a plurality of bids and a plurality of asks,' CQG asserts that its proposed construction of the greater term properly reflects the meaning of plurality as subsumed by the larger term."

# EXHIBIT 6

**Westlaw Delivery Summary Report for SMOLUCKA,MARY AN**

Date/Time of Request:	Thursday, March 8, 2012 13:39 Central
Client Identifier:	218494-10001
Database:	FSFIND
Citation Text:	507 F.Supp.2d 854
Lines:	999
Documents:	1
Images:	0

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507 F.Supp.2d 854  
(Cite as: 507 F.Supp.2d 854)

**H**

United States District Court,  
N.D. Illinois,  
Eastern Division.  
TRADING TECHNOLOGIES INTERNATIONAL,  
INC., Plaintiff,  
v.  
eSPEED, INC., eSpeed International, Ltd, and Ecco  
Ware, Ltd., Defendants.

No. 04 C 5312.  
June 20, 2007.

**Background:** Patent owner brought action against competitor alleging infringement of patents relating to computer software used for electronic trading in futures market. Competitor brought motion for summary judgment.

**Holdings:** The District Court, [Moran](#), Senior District Judge, held that:

- (1) accused product that included automatic instantaneous re-centering of price axis, wherein price axis re-centered when inside market moved off screen, uncontrolled by user did not literally infringe on patents;
- (2) such feature did not infringe under doctrine of equivalents;
- (3) accused product, which included “drift” re-centering, potentially infringed on patents;
- (4) estoppel based on argument did not apply;
- (5) prosecution history estoppel applied; and
- (6) pop-up window in accused product, which allowed trader to click on price cell in price column of accused product and send trade order, contained “order entry region” for receiving commands to send trade orders.

Motion granted.

West Headnotes

**[1] Patents 291 ↗235(2)****291 Patents****291XII Infringement****291XII(A) What Constitutes Infringement****291k233 Patents for Machines or Manufactures****291k235 Identity of Principle or Mode of Operation****291k235(2) k. Particular patents or devices. Most Cited Cases**

Accused product that included automatic instantaneous re-centering of price axis, wherein price axis re-centered when inside market moved off screen, uncontrolled by user, did not literally infringe on patents relating to computer software used for electronic trading in futures market. [35 U.S.C.A. § 271.](#)

**[2] Patents 291 ↗238****291 Patents****291XII Infringement****291XII(A) What Constitutes Infringement****291k233 Patents for Machines or Manufactures****291k238 k. Omission of parts. Most Cited Cases**

A finding that any limitation included in the claim is absent from the accused device will compel a finding of no literal infringement of patent. [35 U.S.C.A. § 271.](#)

**[3] Patents 291 ↗314(5)****291 Patents****291XII Infringement****291XII(B) Actions****291k314 Hearing****291k314(5) k. Questions of law or fact. Most Cited Cases**

Infringement, either literal or under the doctrine of equivalents, is generally a question of fact. [35 U.S.C.A. § 271.](#)

**[4] Patents 291 ↗323.2(2)**

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(Cite as: 507 F.Supp.2d 854)

## 291 Patents

### 291XII Infringement

#### 291XII(B) Actions

##### 291k323 Final Judgment or Decree

##### 291k323.2 Summary Judgment

291k323.2(2) k. Presence or absence of fact issues. [Most Cited Cases](#)

Summary judgment of patent infringement or non-infringement is appropriate only when no reasonable jury could find that every limitation recited in the properly construed claim either is or is not found in the accused device. 35 U.S.C.A. § 271; Fed.Rules Civ.Proc.Rule 56, 28 U.S.C.A.

## [5] Patents 291 237

## 291 Patents

### 291XII Infringement

#### 291XII(A) What Constitutes Infringement

##### 291k233 Patents for Machines or Manufactures

Manufactures

##### 291k237 k. Substitution of equivalents.

#### [Most Cited Cases](#)

Accused product that included automatic instantaneous re-centering of price axis, wherein price axis re-centered when inside market moved off screen, uncontrolled by user, did not infringe on patents relating to computer software used for electronic trading in futures market under doctrine of equivalents, since patents contained “static” requirement and change of positions was not equivalent to not changing positions. 35 U.S.C.A. § 271.

## [6] Patents 291 237

## 291 Patents

### 291XII Infringement

#### 291XII(A) What Constitutes Infringement

##### 291k233 Patents for Machines or Manufactures

Manufactures

##### 291k237 k. Substitution of equivalents.

#### [Most Cited Cases](#)

If an accused product does not literally infringe on an asserted claim, infringement may still be found under the doctrine of equivalents if there is not a substantial difference between the limitations

of the claim and the accused product. 35 U.S.C.A. § 271.

## [7] Patents 291 226.6

## 291 Patents

### 291XII Infringement

#### 291XII(A) What Constitutes Infringement

##### 291k226.5 Substantial Identity of Subject Matter

Matter

##### 291k226.6 k. Comparison with claims of patent. [Most Cited Cases](#)

## Patents 291 237

## 291 Patents

### 291XII Infringement

#### 291XII(A) What Constitutes Infringement

##### 291k233 Patents for Machines or Manufactures

Manufactures

##### 291k237 k. Substitution of equivalents.

#### [Most Cited Cases](#)

A finding of infringement requires a finding that the accused product contains each limitation of the claim, either literally or under the doctrine of equivalents. 35 U.S.C.A. § 271.

## [8] Patents 291 230

## 291 Patents

### 291XII Infringement

#### 291XII(A) What Constitutes Infringement

##### 291k228 Patents for Processes

##### 291k230 k. Substitution of equivalents.

#### [Most Cited Cases](#)

## Patents 291 237

## 291 Patents

### 291XII Infringement

#### 291XII(A) What Constitutes Infringement

##### 291k233 Patents for Machines or Manufactures

Manufactures

##### 291k237 k. Substitution of equivalents.

#### [Most Cited Cases](#)

An element of an accused product or process is not equivalent to a limitation of the claimed inven-

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tion if such a finding would entirely vitiate the patent limitation.

**[9] Patents 291** 237

291 Patents

291XII Infringement

291XII(A) What Constitutes Infringement

291k233 Patents for Machines or Manufactures

291k237 k. Substitution of equivalents.

**Most Cited Cases**

While there is no set formula for determining whether applying the doctrine of equivalents would vitiate a patent claim limitation, the totality of the circumstances is considered to determine whether the alleged equivalent can be fairly characterized as an insubstantial change from the claimed subject matter without rendering the pertinent limitation meaningless.

**[10] Patents 291** 237

291 Patents

291XII Infringement

291XII(A) What Constitutes Infringement

291k233 Patents for Machines or Manufactures

291k237 k. Substitution of equivalents.

**Most Cited Cases**

Accused product, which included “drift” re-centering, potentially infringed on patents relating to computer software used for electronic trading in futures market under doctrine of equivalents, since “drift” would not have caused trader to miss his intended price, price levels never changed positions in response to change in inside market, and such movement did not vitiate “static” requirement of price axis in patented product. 35 U.S.C.A. § 271.

**[11] Patents 291** 168(2.1)

291 Patents

291IX Construction and Operation of Letters Patent

291IX(B) Limitation of Claims

291k168 Proceedings in Patent Office in General

291k168(2) Rejection and Amendment of Claims

291k168(2.1) k. In general. **Most Cited Cases**

A patentee is prohibited by prosecution history estoppel from arguing that its claims cover subject matter that was clearly and unmistakably surrendered during the prosecution of the patent.

**[12] Patents 291** 168(2.1)

291 Patents

291IX Construction and Operation of Letters Patent

291IX(B) Limitation of Claims

291k168 Proceedings in Patent Office in General

291k168(2) Rejection and Amendment of Claims

291k168(2.1) k. In general. **Most Cited Cases**

When determining the scope of prosecution history estoppel, a court examines the prosecution history as a whole and asks whether a competitor would reasonably believe that the applicant had surrendered the relevant subject matter.

**[13] Patents 291** 168(2.1)

291 Patents

291IX Construction and Operation of Letters Patent

291IX(B) Limitation of Claims

291k168 Proceedings in Patent Office in General

291k168(2) Rejection and Amendment of Claims

291k168(2.1) k. In general. **Most Cited Cases**

Prosecution history estoppel can be applied based on amendments made to overcome patentability rejections or arguments made during prosecution.



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(Cite as: 507 F.Supp.2d 854)

**[14] Patents 291 168(3)**

291 Patents

291IX Construction and Operation of Letters Patent

291IX(B) Limitation of Claims

291k168 Proceedings in Patent Office in General

291k168(3) k. Rejection and amendment of claims of particular patents. **Most Cited Cases**

Applicant's statement to Patent and Trademark Office (PTO), that key focus of static price axis was its inability to change positions, or flip from one price to next, was not clear and unmistakable surrender of "drift" re-centering suggested by accused product, and thus estoppel based on argument did not apply to preclude claim of infringement under doctrine of equivalents as to patents relating to computer software used for electronic trading in futures market.

**[15] Patents 291 168(3)**

291 Patents

291IX Construction and Operation of Letters Patent

291IX(B) Limitation of Claims

291k168 Proceedings in Patent Office in General

291k168(3) k. Rejection and amendment of claims of particular patents. **Most Cited Cases**

Prosecution history estoppel applied to patent owner's claim that competitor infringed patents relating to computer software used for electronic trading in futures market under doctrine of equivalents, where original patent claims included "static" limitation, applicant amended claims during prosecution from requiring price axis that did not change positions to requiring price axis that did not move in response to change in inside market, and accused products had price axis that moved in response to change in inside market.

**[16] Patents 291 168(2.1)**

291 Patents

291IX Construction and Operation of Letters Patent

291IX(B) Limitation of Claims

291k168 Proceedings in Patent Office in General

291k168(2) Rejection and Amendment of Claims

291k168(2.1) k. In general. **Most Cited Cases**

As between the patentee who had a clear opportunity to negotiate broader claims but did not do so, and the public at large, it is the patentee who must bear the cost of its failure to seek protection for the foreseeable alteration of its claimed structure.

**[17] Patents 291 235(2)**

291 Patents

291XII Infringement

291XII(A) What Constitutes Infringement

291k233 Patents for Machines or Manufactures

291k235 Identity of Principle or Mode of Operation

291k235(2) k. Particular patents or devices. **Most Cited Cases**

Pop-up window in accused product, which allowed trader to click on price cell in price column of accused product and send trade order, contained "order entry region" for receiving commands to send trade orders, as found in patents relating to computer software used for electronic trading in futures market; although computer took additional steps with regard to executing trade, claim limitation was viewed from perspective of user, not computer.

**Patents 291 328(2)**

291 Patents

291XIII Decisions on the Validity, Construction, and Infringement of Particular Patents

291k328 Patents Enumerated

291k328(2) k. Original utility. **Most Cited**

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## Cases

6,766,304, 6,882,132. Not Infringed.

\*856 Paul H. Berghoff, McDonnell, Boehnen, Hulbert & Berghoff, Ltd., Brian Richard Harris, Christopher Michael Cavan, Dennis David Crouch, George I. Lee, Jennifer M. Kurcz, Jeremy E. Noe, Leif R. Sigmond, Jr., Marcus Jay Thymian, Matthew J. Sampson, Michael David Gannon, Michelle Lynn McMullen-Tack, Paul A. Kafadar, Paul S. Tully, S. Richard Carden, Steven F. Borsand, Trading Technologies International, Inc., Chicago, IL, for Plaintiff.

Gary Kemp, pro se.

Raymond C. Perkins, Andrew M. Johnstone, Elizabeth Hartford Erickson, George Carter Lombardi, James M. Hilmert, Kevin Anthony Banasik, Tracy J. Allen, Winston & Strawn L.L.P., Chicago, IL, Gary A. Rosen, Law Offices of Gary A. Rosen, P.C., Philadelphia, PA, for Defendants.

## MEMORANDUM OPINION AND ORDER

MORAN, Senior District Judge.

Plaintiff Trading Technologies International, Inc. ("TT") brought this suit against defendants eSpeed, Inc., eSpeed International, Ltd., Ecco LLC, and EccoWare, Ltd. (collectively "eSpeed"), alleging infringement of U.S. Patent Nos. 6,766,304 ('304) and 6,882,132 ('132). Both patents, similar in scope and language, relate to computer software used for electronic trading in the futures market. On February 9, 2005, we preliminarily construed patentee's claims in conjunction with our preliminary injunction analysis. *Trading Technologies Int'l Inc. v. eSpeed, Inc.*, 370 F.Supp.2d 691 (N.D.Ill.2005) ("Preliminary Injunction Order"). While we ultimately denied a preliminary injunction, our preliminary claim construction aligned primarily with plaintiffs claim interpretation. Later, after a three-day *Markman* hearing, we again construed the patents' claims. \*857 *Trading Technologies Int'l Inc. v. eSpeed, Inc.*, 2006 WL 3147697 (N.D.Ill.2006) ("Claim Construction Order"). Based on additional

information and in-depth analysis, we significantly adjusted our initial construction of the claims in the patents-in-suit. After another look at our claim construction analysis, we substantially reaffirmed our constructions. *Trading Technologies Int'l Inc. v. eSpeed, Inc.*, 2007 WL 611258 (N.D.Ill.2007) ("Clarification Order"). Now, after significant and somewhat contentious discovery, the parties have filed cross-motions for summary judgement regarding the alleged infringement. For the reasons stated herein, we grant defendant's motion for summary judgment of non-infringement and deny plaintiffs cross-motion for partial summary judgment.

## BACKGROUND

Summary judgment is proper "if the pleadings, depositions, answers to interrogatories, and admissions on file, together with the affidavits, if any, show that there is no genuine issue as to any material fact," such that the moving party is entitled to judgment as a matter of law. FED.R.CIV.P. 56(c). For purpose of summary judgment, we construe the facts in favor of the non-movant (*Adickes v. S.H. Kress & Co.*, 398 U.S. 144, 157, 90 S.Ct. 1598, 26 L.Ed.2d 142 (1970)), and draw all inferences and view underlying facts in the light most favorable to the non moving party. *U.S. v. Diebold, Inc.*, 369 U.S. 654, 655, 82 S.Ct. 993, 8 L.Ed.2d 176 (1962). The mere existence of some factual dispute will not frustrate an otherwise proper summary judgment; only a genuine dispute over a material fact will defeat summary judgment. *Anderson v. Liberty Lobby, Inc.*, 477 U.S. 242, 247-248, 106 S.Ct. 2505, 91 L.Ed.2d 202 (1986).

Plaintiff has alleged that defendants have developed and sold, and continue to develop and sell, products that infringe the '132 and '304 patents. Claim 1 of each of the patents is representative. Claim 1 of the '132 patent reads:

A method of placing a trade order for a commodity on an electronic exchange having an inside market with a highest bid and a lowest ask price, using a graphical user interface and a user input device, said method comprising:

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- [1] setting a preset parameter for the trade order
- [2] displaying market depth of the commodity, through a dynamic display of a plurality of bids and a plurality of asks in the market for the commodity, including at least a portion of the bid and ask quantities of the commodity, the dynamic display being aligned with a static display of prices corresponding thereto, wherein the static display of prices does not move in response to a change in the inside market;
- [3] displaying an order entry region, aligned with the static display prices comprising a plurality of areas for receiving commands from the user input devices to send trade orders, each area corresponding to a price of the static display of prices; and
- [4] selecting a particular area in the order entry region through a single action of the user input device with a pointer of the user input device positioned over the particular area to set a plurality of additional parameters for the trade order and send the trade order to the electronic exchange.

Claim 1 of the '304 patent reads:

A method for displaying market information relating to and facilitating trading of a commodity being traded in an electronic exchange having an inside market with a highest bid price and a lowest ask price on a graphical user interface, the method comprising:

- \*858 [1] dynamically displaying a first indicator in one of a plurality of locations in a bid display region, each location in the bid display region corresponding to a price level along a common static price axis, the first indicator representing quantity associated with at least one order to buy the commodity at the highest bid price currently available in the market;
- [2] dynamically displaying a second indicator

in one of a plurality of locations in an ask display region, each location in the ask display region corresponding to a price level along the common static price axis, the second indicator representing quantity associated with at least one order to sell the commodity at the lowest ask price currently available in the market;

[3] displaying the bid and ask display regions in relation to fixed price levels positioned along the common static price axis such that when the inside market changes, the price levels along the common static price axis do not move and at least one of the first and second indicators moves in the bid or ask display regions relative to the common static price axis;

[4] displaying an order entry region comprising a plurality of locations for receiving commands to send trade orders, each location corresponding to a price level along the common static price axis; and

[5] in response to a selection of a particular location of the order entry region by a single action of a user input device, setting a plurality of parameters for a trade order relating to the commodity and sending the trade order to the electronic exchange.

Because the remainder of the facts cited in the parties' statements of material facts are largely argumentative and support their broader contentions, we discuss the relevant facts below,

#### DISCUSSION

[1] eSpeed's motion for summary judgment centers on certain of its accused products; Dual Dynamic versions of the eSpeed and Ecco products ("Dual Dynamic"); the eSpeedometer versions of the eSpeed and Ecco products ("eSpeedometer"); and the Modified eSpeedometer version of the eSpeed and Ecco products ("Modified eSpeedometer"). The parties' motions, and this order, do not address any remaining accused products. With respect

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to the accused products, eSpeed argues that as a matter of law TT cannot prove literal infringement or infringement under the doctrine of equivalents. eSpeed contends that any doctrine-of-equivalents argument must fail because application of the doctrine would vitiate TT's "static" limitation, and such application is foreclosed by prosecution history estoppel. Specifically, eSpeed points to two features of the accused products: automatic re-centering and a pop-up window, that eSpeed contends remove the products from the purview of TT's patents. Inclusion of those features, eSpeed argues, eliminates TT's ability to prove that the accused products meet every limitation of TT's patents, specifically the "static price axis" and "order entry region," as defined by this court. TT disagrees. First, TT suggests that eSpeed's pop-up window literally infringes TT's "order entry region" claim limitation because, from the perspective of the user, he or she can send an order from eSpeed's price columns. Second, with regard to the "static" limitation, TT breaks down eSpeed's accused products into two categories: those products that have automatic, instantaneous re-centering, and those that employ a "drift" re-centering.<sup>FN1</sup> With respect to the former, \*859 TT asserts that it infringes on TT's patents under the doctrine of equivalents. With respect to the latter, specifically the eSpeedometer product, TT contends that the "drift" feature literally infringes its patents. In the alternative, TT contends that the "drift" feature infringes under the doctrine of equivalents. We address the parties' arguments in turn.

<sup>FN1</sup>. We adopt the term "drift" to describe the eSpeedometer re-centering process whereby the price display automatically re-centers the inside market in response to every change in the inside market by causing the inside market to gradually move back to the center of the screen. TT refers to it as "slow drift." Because Joseph Novello and James Davies suggested that such movement has been referred to as "drift" in the Ecco Implementation (def's motion, exh. I, p. 26; exh. O, p. 176) and because

we think such a term sufficiently denotes the re-centering movement, we adopt it for purposes of this order.

#### *Common Static Price Axis/Static Display of Prices*

As has been the case in our previous rulings, the major dispute centers around the "static" claim limitation. Plaintiff concedes that, under our construction of "common static price axis" and "static display of prices," eSpeed's Dual Dynamic products with automatic, instantaneous re-centering do not literally infringe plaintiff's patents. It does contend, however, that such products infringe under the doctrine of equivalents. We leave the doctrine of equivalents discussion until later, focusing instead on TT's argument that eSpeed's eSpeedometer products, products that include the "drift" re-centering feature, literally infringe TT's patents.

[2][3][4] To prevail on its literal infringement claim, plaintiff must prove that the accused devices contain each limitation of TT's asserted patent claims. *Bayer AG v. Elan Pharmaceutical Research Corp.*, 212 F.3d 1241, 1247 (Fed.Cir.2000). A finding that any limitation included in the claim is absent from the accused device will compel a finding of no literal infringement. *Id.* Infringement, either literal or under the doctrine of equivalents, is generally a question of fact. *V-Formation, Inc. v. Benetton Group SpA*, 401 F.3d 1307, 1310 (Fed.Cir.2005). Therefore, summary judgment of infringement or non-infringement is appropriate "only 'when no reasonable jury could find that every limitation recited in the properly construed claim either is or is not found in the accused device.'" *Id.* (citing *Gart v. Logitech, Inc.*, 254 F.3d 1334, 1339 (Fed.Cir.2001)).

eSpeed argues that its products do not literally infringe because they are not "static" In our claim construction order, we defined "common static price axis" as "a line comprising price levels that do not change positions unless a manual re-centering command is received and where the line of prices corresponds to at least one bid value and one ask value" and "static display of prices" as "a

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display of prices comprising price levels that do not change positions unless a manual re-centering command is received.” *Claim Construction Order, 2006 WL 3147697*, at \*4. In light of our construction, TT remains convinced that the eSpeedometer products’ “drift” re-centering literally infringes the “static” claim limitation of TT’s patents. eSpeed describes the “drift” re-centering movement:

[T]he price display also automatically re-centers the inside market in response to every change in the to the [sic] inside market by causing the inside market to gradually move back to the center of the eSpeedometer window. This type [of] automatic re-centering occurs without the input of the user in the eSpeedometer version of the eSpeed application. This type of automatic re-centering cannot be turned off by the user in the eSpeedometer version of the eSpeed application.\*860 The eSpeedometer version of CantorFITS includes this same functionality for automatically re-centering the inside market.

(defs’ statement of material facts, ¶ 35) (internal citations omitted). (*See also id.*, at ¶ 39) (regarding the eSpeedometer version of the Ecco Pro application).

TT focuses its argument on our construction of “static.” Plaintiff argues that in defining the term “static” to mean “not changing positions,” as opposed to prohibiting any movement, we previously recognized that some movement is irrelevant to the claims. TT uses a train board analogy to suggest that the patent was designed to replace trading screens wherein the price in a specific column of the price axis would flip to a different price upon a change in the inside market. eSpeedometer’s “drift” feature, plaintiff argues, does not constitute a change of positions, and therefore, comes within the ambit of “static” as defined by TT’s patents and this court. TT explains: “In sum, the patents-in-suit address the problems associated with prices changing positions (sudden flipping of prices), such that the trader misses his or her intended price when he clicks on the intended cell. Any extraneous move-

ment of prices that has no effect on the trader missing his or her price when he clicks on the intended cell is irrelevant in the context of the patents-in-suit” (plf’s response, p. 18).

While our construction of “common static price axis” and “static display of prices” used the language of changing positions, our order on plaintiffs’ motion for clarification was quite clear that “static” eliminates movement. In that order we addressed whether the patent term “static” required a permanent state of lack of movement. Answering that question in the affirmative, we rejected plaintiffs’ additional feature and part-time infringement arguments. We specifically stated: “Where, however, the claim limitation itself—here, a static condition—requires permanency, any movement (outside of manual re-centering or re-positioning) negates one of the specified claim limitations.” *Clarification Order, 2007 WL 611258*, at \*5. Foreshadowing a literal infringement analysis, we continued: “In this case, in order to literally infringe, defendants must practice all elements of plaintiff’s patented technology. Therefore, any movement of the static price axis leaves accused technology outside the protection of plaintiff’s patents.” *Id.* Under our construction, we find that no reasonable jury could determine that any eSpeed product that includes automatic re-centering of the price axis uncontrolled by the user, including the “drift” re-centering, literally infringes on TT’s patents. We grant summary judgment with respect to literal infringement.

[5][6] With respect to both the Dual Dynamic and eSpeedometer products, TT argues that the automatic re-centering features infringe on its patents under the doctrine of equivalents. TT contends that the price axis in each of eSpeed’s accused products is not substantially different from the “common static price axis” or “static display of prices” claimed in TT’s patents. If an accused product does not literally infringe on an asserted claim, infringement may still be found under the doctrine of equivalents “if there is not a substantial difference between the limitations of the claim and

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the accused product.” *Bayer AG*, 212 F.3d at 1250-51. Infringement under the doctrine of equivalents, like literal infringement, is a question of fact. *Id.*, at 1251. The Supreme Court addressed the import of the doctrine of equivalents:

If patents were always interpreted by their literal terms, their value would be \*861 greatly diminished. Unimportant and insubstantial substitutes for certain elements could defeat the patent, and its value to inventors could be destroyed by simple acts of copying. For this reason, the clearest rule of patent interpretation, literalism, may conserve judicial resources but is not necessarily the most efficient rule. The scope of a patent is not limited to its literal terms but instead embraces all equivalents to the claims described.

*Festo Corp. v. Shoketsu Kinzoku Kogyo Kabushiki Co., Ltd.*, 535 U.S. 722, 731-32, 122 S.Ct. 1831, 152 L.Ed.2d 944 (2002). The Supreme Court, however, in an earlier case, cautioned against applying the doctrine of equivalents too broadly: “There can be no denying that the doctrine of equivalents, when applied broadly, conflicts with the definitional and public-notice functions of the statutory claiming requirement.” *Warner-Jenkinson Co., Inc. v. Hilton Davis Chemical Co.*, 520 U.S. 17, 29, 117 S.Ct. 1040, 137 L.Ed.2d 146 (1997).

We begin our equivalence analysis with the automatic re-centering of the Dual Dynamic products. eSpeed describes the automatic re-centering feature:

In the Dual Dynamic version of the eSpeed application, the price display automatically and immediately re-centers the inside market (*i.e.*, the best bid and the best offer) upon a change in the inside market that would cause the inside market to be displayed off the Dual Dynamic window. This automatic re-centering occurs without the input of the user in the Dual Dynamic version of the eSpeed application. The Dual Dynamic versions of AutoSpeed Basis and CantorFITS include this same functionality for automatically

and immediately re-centering the inside market.

(def’s statement of facts, ¶ 29) (*see also id.*, ¶ 31) (regarding the Dual Dynamic version of the Ecco Pro application). eSpeed contends that, in addition to the “drift” feature described above, the eSpeedometer products also contain automatic re-centering identical to that of the Dual Dynamic product. (*Id.*, at ¶ 34, 37). The same is true for the Modified eSpeedometer products. (*Id.*, at 41).

While TT offers some evidence that both the Dual Dynamic automatic re-centering and the eSpeedometer “drift” re-centering infringe, based on the doctrine of equivalents, eSpeed chooses not to focus on the factual inquiry as to whether its automatic re-centering features are equivalent to TT’s “static price axis.” Rather, eSpeed contends that TT is barred, as a matter of law, from asserting a doctrine of equivalents theory. In support of their argument, eSpeed asserts that the doctrine of equivalents is inapplicable where, as here, its application would vitiate a claim limitation and/or is foreclosed by prosecution history estoppel.

[7][8][9] We begin with the so-called “all elements” rule. A finding of infringement requires a finding that the accused product contains each limitation of the claim, either literally or under the doctrine of equivalents. *Freedman Seating Co. v. American Seating Co.*, 420 F.3d 1350, 1358 (Fed.Cir.2005) (defining the “all limitations” rule). Therefore, “an element of an accused product or process is not, as a matter of law, equivalent to a limitation of the claimed invention if such a finding would entirely vitiate the limitation.” *Id.* (citing *Warner-Jenkinson Co.*, 520 U.S. at 29, 117 S.Ct. 1040) *See also Seachange Int’l, Inc. v. C-COR, Inc.*, 413 F.3d 1361, 1378 (Fed.Cir.2005); *Conopco, Inc. v. May Dept. Stores Co.*, 46 F.3d 1556, 1562 (Fed.Cir.1994) (“The doctrine of equivalents cannot be used to erase ‘meaningful structural and functional limitations of the claim on which the public is entitled to rely in \*862 avoiding infringement.’”) (internal citations omitted); While there is no set formula for determining whether applying the doc-

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trine of equivalents would vitiate a claim limitation, we must consider the totality of the circumstances to “determine whether the alleged equivalent can be fairly characterized as an insubstantial change from the claimed subject matter without rendering the pertinent limitation meaningless.” *Freedman Seating Co.*, 420 F.3d at 1359.

We begin with analysis of the Dual Dynamic automatic re-centering, wherein the price axis re-centers when the inside market moves off the screen.<sup>FN2</sup> eSpeed argues:

FN2. ALthough eSpeed claims that the eSpeedometer products include automatic, instantaneous re-centering similar to that in the Dual Dynamic product, in addition to its “drift” re-centering, TT disputes such a contention. In support of its contention, TT offers an 8-minute clip of the eSpeedometer product and introduces the declaration testimony of expert witness Christopher Thomas (plf’s response, exh. C; *Id.*, exh. E, ¶ 6, n1). An act of infringement occurs when an infringer “makes, uses, offers to sell, or sells any patented invention...” 35 U.S.C. § 271. Because infringement analysis involves a comparison of the accused product (as it exists, not under some hypothetical) to the patent claims, the key is how the product runs, how it exists in practice. Therefore, we find that there is a genuine issue of fact as to whether the eSpeedometer products include the automatic re-centering feature whereby the price axis re-centers when the inside market moves off the screen.

TT is foreclosed from arguing that automatically moving price levels are equivalent to price levels that “do not change positions unless a manual re-centering command is received.” Likewise, TT is foreclosed from arguing that “static” is equivalent to “dynamic” and that prices that “do not move” when the inside market changes are equivalent to prices that “do move.” A finding of

equivalence would not only vitiate the meaning of the word “static,” it would require a wholesale rewriting of the claim.

(def’s motion, at 17). TT responds:

In short, eSpeed’s automatic re-entering feature does not vitiate the ‘static’ limitation, because eSpeed’s product has price levels [sic] remain in the same positions most of the time, except in the infrequent instances in which the screen is automatically re-centering.

(plf’s response, at 9). The re-centering is so infrequent, TT asserts, that it occurs on average only once or twice per trading day (*see* plf’s response, exh. E., ¶ 8) (analysis based on the previous month’s trading data on the five- and ten-year Chicago Board of Trade bond markets). Such infrequent position changes, TT continues, in light of the similar function, way to achieve the function, and result between the patent technology and the accused product (*see Graver Tank & Mfg. Co. v. Linde Air Prods. Co.*, 339 U.S. 605, 608, 70 S.Ct. 854, 94 L.Ed. 1097 (1950); *Dolly, Inc. v. Spalding & Evenflo Companies, Inc.*, 16 F.3d 394, 397 (Fed.Cir.1994)), create only a subtle and insubstantial difference.

TT relies on *Ethicon Endo-Surgery, Inc. v. United States Surgical Corp.*, 149 F.3d 1309 (Fed.Cir.1998), *Rosby Corp. v. Stoughton Trailers, Inc.*, 2003 WL 22232802 (N.D.Ill.2003), and *LG Electronics, Inc. v. Bizcom Electronics, Inc.*, 453 F.3d 1364 (Fed.Cir.2006) to support its argument that the limited number of times an eSpeed product automatically re-centers is a subtle matter of degree, and thus, an insubstantial difference. In *Ethicon*, the Federal Circuit reversed the district court’s summary judgment of non-infringement by equivalents on one of two claims. Therein, the court found that even though the accused product’s lockout mechanism lost contact with the pusher assembly in a \*863 surgical stapler, the very short period of loss of contact was insubstantially different from the patent claim requiring constant contact between the lockout mechanism and the pusher as-

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sembly during firing of the stapler. The *Ethicon* court concluded that the “very slight,’ ‘very quick’ temporal difference, a period that is perhaps as short as a few thousandths of a second, ... is a subtle difference of degree, not a clear, substantial difference or difference in kind ...” 149 F.3d at 1321. Similarly, in *Rosby Corp.*, 2003 WL 22232802, Judge Guzman found a question of fact sufficient to defeat a motion for summary judgment of non-infringement in a case involving a trailer with a larger internal width capable of holding additional pallets. The patent claimed a pair of sidewalls “aligned side-by-side in contiguous abutting relation,” which was construed to require physical contact along all or most of one side of the side panel. *Rosby Corp.*, 2003 WL 22232802, at \*2. Citing *Ethicon*, among other cases, Judge Guzman found that the difference between touching sidewalls and barely touching sidewalls was insubstantial. Finding that the functional difference was minimal, Judge Guzman noted, “finding the claim element here to be side walls in side-by-side alignment strikes the appropriate balance, giving the public fair notice of the patent’s reach while simultaneously avoiding the strict literalism the doctrine of equivalents was designed to prevent.” *Id.*, at \*6. Finally, in *LG Electronics*, the Federal Circuit disagreed with the district court’s finding of claim vitiation in its doctrine of equivalents analysis. The district court rejected plaintiffs argument that performing all of the write requests in an information processing system up to (and including) the one matching the read request was not substantially different from the claim limitation’s performance of all write requests before execution of the incoming read request. The lower court determined that finding the two processes equivalent would vitiate the claim limitation of performing “all” write requests before an incoming read request. 453 F.3d at 1380. The Federal Circuit disagreed: “If substantially all or nearly all write requests are performed by the accused devices before each matching read request, then the doctrine of equivalents would be fully applicable without vitiating the claim language.” *Id.*, at 1381.

We do not find TT’s citation to these cases persuasive. In *Ethicon*, the purpose behind the lockout mechanism was to prevent a staple from being fired. The difference in degree, due to a 15-20 millimeter difference in the length of the pusher bars in the stapler, did not alter the efficacy of the product—the restraint always worked to prevent the firing of a staple. Similarly, in *Rosby Corp.*, the court found the functional difference minimal. 2003 WL 22232802, at \*6. Here, any instantaneous movement of the price axis, uncontrolled by the user, alters the efficacy of the product (*see* plf’s response, p. 7) (“With automatic re-centering, there is a risk of missing a price because the price grid may be repositioned, but only when the inside market jumps off the top or bottom of the screen”). *See also Claim Construction Order*, 2006 WL 3147697, at \*5 (“We find that the purpose of the patents’ invention would be frustrated by the inclusion of any movement uncontrolled by the user”). As previously stated, we have construed the term “common static price axis” as “a line comprising price levels that do not change positions unless a manual re-centering command is received and where the line of prices corresponds to at least one bid value and one ask value” and “static display of prices” as “a display of prices comprising price levels that do not change positions unless a manual re-centering command is received.” *Id.*, at \*4. A finding that a \*864 change of positions (even once or twice per trading day) is equivalent to not changing positions unless by manual re-centering would vitiate the “static” requirement. The price levels either change positions (or flip, as analogized to a train board) or do not change positions; there is no matter of degree. Therefore, we find that automatic re-centering, when it causes the price levels to change positions, is “a clear, substantial difference or difference in kind.” *Freedman Seating Co.*, 420 F.3d at 1361 (finding that a rotatably mounted support member on a stowable seat was not equivalent to a slidably mounted support member). *See also Moore U.S.A., Inc. v. Standard Register Company*, 229 F.3d 1091 (Fed.Cir.2000) (denying plaintiffs argument that a majority of the lengths is equivalent to a minority



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of the lengths both because such a finding would vitiate the minority claim limitation and because it would defy logic to conclude that the two could be equivalents). As we have already noted, a different finding would frustrate the stated purpose of plaintiff's patents. *See SciMed Life Systems, Inc., v. Advanced Cardiovascular Systems*, 242 F.3d 1337 (Fed.Cir.2001) (where plaintiff's patents made clear that a dual lumen configuration in a balloon dilation catheter was an inferior product, it could not later apply the doctrine of equivalents to capture products designed with a dual lumen configuration); *Dolly, Inc.*, 16 F.3d at 397 (“ ‘To be a [n] ... “equivalent,” the element substituted in the accused device for the element set forth in the claim must not be such as would substantially change the way in which the function of the claimed invention is performed’ ”) (internal citations omitted). Therefore, with respect to the Dual Dynamic products that include an automatic instantaneous re-centering when the inside market moves off the screen, we find that the products do not infringe under the doctrine of equivalents.

[10] The eSpeedometer “drift” re-centering requires a different analysis. We previously concluded that a question of fact exists as to whether the eSpeedometer products include the Dual Dynamic re-centering feature, wherein the price axis automatically re-centers when the inside market moves off the screen (*see supra*, note 2). Therefore, we must assess whether the “drift” re-centering potentially infringes under the doctrine of equivalents before granting summary judgment to eSpeed on the eSpeedometer products. Unlike the Dual Dynamic automatic re-centering, it does not appear that a trader may miss an intended price due to movement in the eSpeedometer products. The “mouse lock” feature contained in the eSpeedometer products seemingly prevents trade commands from being entered at erroneous price levels (*see* plf's response, exh. M at eS0064327, line 29-eS0064328, line 9). The eSpeedometer application explains:

In order to help prevent trade commands from being entered at erroneous price levels, the system may lock a pointer to a price the user points to according to some embodiments of the present invention. Accordingly, when a user moves a pointer to a cell that includes or is adjacent to a particular price, the system may lock the pointer to that price. That is, when the indication of the inside market shifts, the pointer may be repositioned such that it is pointing to the cell that includes or is adjacent to the same price, unless the user moves the pointer away from that price. Unless the user moves the pointer away from that cell, a command is entered for the price desired by the user when the user clicks to enter the command.

Due in part to such technology, we assume, the eSpeedometer application states \*865 that an objective of the invention is “to provide systems and methods that clearly represent price fluctuations while ensuring quick, accurate and efficient execution of trades.” (*Id.*, at eS0064306, lines 14-17).

Such an assurance of accuracy eliminates many of the concerns we addressed above with respect to the possibility of missing a trade. Unlike the Dual Dynamic automatic re-centering, it appears that the eSpeedometer “drift” re-centering does not alter the efficacy of the product. So the question remains, does the “drift” re-centering vitiate the static claim limitation,

We are not convinced. Just because the eSpeedometer's “drift” re-centering does not literally infringe plaintiff's “static” claim element, does not mean that it does not infringe by equivalents. *Ethicon*, 149 F.3d at 1317. In this case, we think that the eSpeedometer “performs substantially the same function as the claimed limitation in substantially the same way to achieve substantially the same result.” *Id.*, at 1315-16. The “drift” will not cause a trader to miss his price. And unlike the Dual Dynamic re-centering, the price levels never change positions in response to a change in the inside market. Such movement, while not literally in-

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fringing, does not vitiate the “static” requirement of the price axis. It is more a matter of degree—one in which we cannot find, as a matter of law, a substantial difference.

[11][12][13][14] eSpeed's motion contains one remaining argument. Defendants suggest that plaintiff's doctrine of equivalents argument is barred by prosecution history estoppel. A patentee is prohibited by prosecution history estoppel from arguing that its claims cover subject matter that was clearly and unmistakably surrendered during the prosecution of the patent. *Bayer AG*, 212 F.3d at 1252. In determining the scope of prosecution history estoppel, we examine the prosecution history as a whole and ask “ ‘whether a competitor would reasonably believe that the applicant had surrendered the relevant subject matter.’ ” *Id.* (internal citations omitted). Estoppel can be applied based on amendments made to overcome patentability rejections or arguments made during prosecution. *Id.*, at 1251. eSpeed argues that both apply in this case.<sup>FN3</sup>

FN3. Although we already determined that the Dual Dynamic products do not infringe TT's product, eSpeed's prosecution history estoppel arguments apply equally to the Dual Dynamic products as to the eSpeedometer products. Where we distinguish between the two types of re-centering, the distinction is noted.

With regard to estoppel based on argument, eSpeed points to a rejection of the patent's claims under § 112 of the Patent Code. The Patent Office stated, “The claim limitations ‘dynamic display’ and ‘static display’ are vague and indefinite. The applicant is requested to claim ‘to what extent’, ‘to what degree’, and ‘on what basis’ the displays change” (defs' motion, exh. C, at eS64865). TT responded, “Regarding the claim limitations ‘dynamic display’ and ‘static display’, the Applicant respectfully directs the Examiner's attention to pages 13-15 of the specification describing the nature of the price values and the dynamic nature of

the one or more bids and/or asks displayed. In summary, the values in the price column remain ‘static’; that is, they do not change positions in the display (unless a re-centering command is received).” (*Id.*, at cS64886). The relevant portions of pages 13-15 of the specification state, “The value in the price column are static; that is, they do not normally change positions unless a re-centering command is received” (plf's response, exh. J at eS64805). TT argues that its response to the Patent Office is consistent with its argument and the patents' teaching, that the key focus of \*866 the static price axis is its inability to change positions, or flip from one price to the next. We do not find that such a statement to the Patent Office clearly and unmistakably surrenders the type of movement suggested by the eSpeed products, specifically the eSpeedometer “drift” re-centering. Therefore, we do not find argument-based estoppel.

[15] With regard to estoppel based on amendment, eSpeed points to the amendment of prosecution claims 22 and 41. During the course of the prosecution of its patents, TT amended the relevant portion of Claim 22 of the '132 patent as follows (deletions marked in brackets, additions underlined):

displaying [the] market depth of [a] *the* commodity [traded in a market], through a dynamic display of a plurality of bids and a plurality of asks in the market for the commodity, including *at least a portion of* the bid and ask quantities of the commodity, *the dynamic display being* aligned with a static display of prices corresponding thereto, *wherein the static display of prices does not move in response to a change in the inside market;*

(defs' motion, exh. C, at eS65203). Similarly, TT amended the relevant portions of Claim 41 of the '304 patent as follows:

displaying the bid and ask display regions in relation to fixed price levels positioned along the common static price axis such that *when the inside market changes, the price levels along the*

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*common static price axis do not move and at least one of the first and second indicators [can] moves in the bid [and] or ask display regions relative to the common static price axis [when the inside market changes];*

(*Id.*, exh. D, at eS65741).

The Supreme Court has defined the scope and purpose of amendment-based prosecution history estoppel:

The doctrine of equivalents allows the patentee to claim those insubstantial alterations that were not captured in drafting the original patent claim but which could be created through trivial changes. When, however, the patentee originally claimed the subject matter alleged to infringe but then narrowed the claim in response to a rejection, he may not argue that the surrendered territory comprised unforeseen subject matter that should be deemed equivalent to the literal claims of the issued patent. On the contrary, “[b]y the amendment [the patentee] recognized and emphasized the difference between the two phrases[,] ... and [t]he difference which [the patentee] thus disclaimed must be regarded as material.”

*Festo Corp.*, 535 U.S. at 733-34, 122 S.Ct. 1831 (citing *Exhibit Supply Co. v. Ace Patents Corp.*, 315 U.S. 126, 136-37, 62 S.Ct. 513, 86 L.Ed. 736 (1942)).

Applying amendment-based estoppel to this case, we note that TT's original Claims included a “static” limitation. Upon amendment, TT added the clarification that the static display of prices does not move in response to a change in the inside market. We have determined that the term “static” means “not changing positions.” Applying this definition, during prosecution TT amended its claims from requiring a price axis that did not change positions to requiring a price axis that did not move in response to a change in the inside market. See *Rosby Corp.*, 2003 WL 22232802, at \*9. eSpeed's products-both the Dual Dynamic products

and the eSpeedometer products-have a price axis that moves in response to a change in the inside market. Upon a change in the inside market that takes it off the screen, the Dual Dynamic products move the price \*867 axis to re-center the inside market in the center of the screen. Similarly, in the eSpeedometer models, upon a change in the inside market that moves the inside market up or down on the screen, the price axis automatically drifts back to the center of the screen. There would be no movement without a change in the inside market. Therefore, TT's doctrine of equivalents argument is foreclosed by prosecution history estoppel.

[16] TT's arguments do not save its doctrine of equivalents theory. TT argues that applying this court's definition of “static,” the claim amendments are not narrowing. Initially, this argument was somewhat persuasive. In thinking about why we construed the claims as narrowly as we did, however, we are reminded that we looked to the claim language, the specification, and the prosecution history. TT cannot, after having been unsuccessful in arguing for a broader construction, use our narrower construction as a weapon to essentially broaden its claims. Even so, plaintiffs argument must fail. We construed “static” to mean not changing positions. Even if we accept TT's argument that not changing positions means that the price levels do not flip like the destinations on a train board, the amendment narrows the scope of the claim. By specifically saying that the display of prices does not move in response to a change in the inside market, TT specifically chose to use the display of prices (the price axis), as opposed to price levels, and used the term “do[es] not move” instead of does not change positions. Thus, TT has clearly disclaimed a price axis that moves in response to a change in the inside market. That is exactly what eSpeed's products do-move in response to a change in the inside market. “[A]s between the patentee who had a clear opportunity to negotiate broader claims but did not do so, and the public at large, it is the patentee who must bear the cost of its failure to seek protection for this foreseeable alteration of

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its claimed structure.” *Freedman Seating Co.*, 420 F.3d at 1361 (citing *Sage Products, Inc. v. Devon Industries, Inc.*, 126 F.3d 1420, 1425 (Fed.Cir.1997)). Therefore, based on the foregoing analysis, we grant eSpeed's motion for summary judgment of non-infringement for its products containing automatic re-centering uncontrolled by the user.

[17] Both parties also debate infringement of TT's “order entry region” and seek summary judgment of infringement or non-infringement. Because we are convinced that regardless of the outcome, this case will surely make its way to the Federal Circuit, we will address the merits of the parties' arguments. At issue is a pop-up window in eSpeed's products, which defendants allege takes its products outside the scope of TT's patents. Claims 1 of the patents-in-suit both require an “order entry region ... for receiving commands” to send trade orders. In our claim construction order, we construed “order entry region” to mean “an area comprising a plurality of locations where users may enter commands to send trade orders, and that each location corresponds to a price level along the common static price axis.” 2006 WL 3147697, at \*7. We went on to clarify two points: (1) The claim limitation “ ‘order entry region’ should be viewed from the perspective of the user, not the computer” (*id.*, at \*8); and (2) “ ‘[O]rder entry region’ is a location within the trading display where a user *sends* and not simply *initiates* an order.” *Id.* (emphasis in original). In support of our conclusion we relied on the patent specification and TT's amendment of its claims with regard to “order entry region.” *Id.*

TT asserts that the pop-up window contained in eSpeed's accused products literally\*868 infringes on its patent claims. In the alternative, TT contends that the products infringe by equivalents. eSpeed describes the pop-up window of the Dual Dynamic product:

In the Dual Dynamic version of the eSpeed application, the user initiates the process of placing a trade order by depressing the mouse button with

the cursor positioned over a price in either the bid price column or the offer price column. The user depresses the mouse button over a price which (with the second look option disabled) causes the eSpeed application to display the order entry pop up window and to move the cursor to the default quantity in the order entry pop up window. After the order entry pop up window has been displayed, the user may move the mouse cursor to select a trade quantity in the order entry pop up window or to abandon the trade. With the cursor positioned over the desired trade quantity, the user may release the mouse button to send the trade order. If the user does not move the mouse to select a different trade quantity in the order entry pop up window or to abandon the trade, releasing the mouse buttons sends a trade order at the default quantity. The Dual Dynamic versions of AutoSpeed Basis and CantorFITS have the same order entry process as the Dual Dynamic version of the eSpeed application.

(defs' statement of facts, ¶ 30). (*See also* ¶ 33) (regarding the Dual Dynamic version of the Ecco Pro application); ¶ 36 (regarding the eSpeedometer version of the eSpeed application); ¶ 40 (regarding the eSpeedometer version of the Ecco Pro application); ¶ 43 (regarding the Modified eSpeedometer version of the Ecco Pro application).

We first address TT's literal infringement argument. Essentially, TT argues, eSpeed's pop-up window is an optional feature. Should the trader choose to place an order at a default quantity, the trader need only press and release his or her mouse button in a cell of the price axis. This, TT contends, literally infringes on TT's claims. TT explains:

The trader need not move the mouse cursor to another location, or take any further action to send the order for the default quantity. The trader also does not have to use any features of the pop-up window. Instead, the user simply releases the mouse button and an order is sent for the default quantity.