

**UNITED STATES DISTRICT COURT  
NORTHERN DISTRICT OF ILLINOIS  
EASTERN DIVISION**

Trading Technologies	)	
International, Inc.,	)	
	)	
Plaintiff,	)	Civil Action No. 04 C 5312
	)	
v.	)	Judge James B. Moran
	)	
eSpeed, Inc., eSpeed International, Ltd.,	)	
Ecco LLC, and EccoWare Ltd.,	)	
	)	
Defendant.	)	

**EXPERT REPORT OF DAVID L. SILVERMAN**



'031 Patent, Fig. 2d. The different components of this illustration are identified by numbers connected to the elements of the display (e.g. the 12 in the upper left corner, or the 120 on the right edge). In particular, as explained within the specification and disclosure of the '031 patent, the column of numbers ranging from 26 up to 00 is a vertical price axis (identified as 136 in the drawing). The numbers on the left (60, 40, 25) are cumulative bid quantities (identified as 133 in the drawing). The numbers on the right (40, 70, 100) are cumulative ask quantities (also identified as 133 in the drawing). The last trade is at 29. The brokers own orders are shown in association with this display as the squares (20, 5, 15, 20) for bids and the circles (30, 10, 25, 5, 30) for asks (identified as 139-x in the drawing). See '031 Patent, at 12:25-56. The bar across the center, identified as 137, indicates the price of the last trade in the market. '031 Patent at 12:7-24.

*iv. **GLOBEX (1992)***

33. In 1987, Reuters demonstrated a prototype government securities trading system to the CME. This system in its prototype utilized a market grid display which allowed the trader to display up to 24 instruments on the screen at the same time. For each instrument, the most critical fields including the instrument name, the last sale price, best bid, best offer, bid and offer size, and yield to maturity of the last sale were concurrently updated. This system included state-of-the-art technology for user interaction, such as a custom designed keyboard for rapid, error-free order entry and order management and voice-activated input. This prototype, although configured for trading cash bonds, was based upon the RDTS architecture which was a generic platform for trading any asset type. As such, it could be easily configured in terms of its display

characteristics, input characteristics, and order processing logic to address the electronic trading needs of a futures exchange.

34. In the summer of 1987, Reuters and the CME entered into the Pre and Post Market Trading ("PMT") Agreement which provided a framework whereby Reuters would supply technology and operations to the CME for trading the CME futures on Reuters electronic trading platform. The PMT Agreement subsequently became the GLOBEX Agreement and the technology provided by Reuters became known as the GLOBEX system.

35. From the outset, GLOBEX was envisioned to be a multi exchange trading system. The CME invited participation from all of the major global financial futures exchanges including the CBOT, MATIF, LIFFE, SOFFEX, DTB, NYMEX, IPE and others. Ultimately, the CBOT and MATIF joined as partners in the venture whereas some of the other exchanges elected to adopt their own electronic trading technologies. Having multiple exchanges as constituents resulted in a complex and protracted process for agreeing on system requirements. The most significant and influential participants in the requirements definition process were the large FCM members and the market operations and surveillance staff of the exchanges themselves. From an early stage, the exchanges agreed that a single display format would be used by all users and by all exchanges. This created the ability to display markets across multiple exchanges on a single screen. It also meant that the characteristics of that display had to be a common denominator across all of those exchange products.

36. The market grid was deemed to be a very useful component inasmuch as it allowed the display of multiple instruments concurrently. However, it was also viewed

as desirable to be able to display the order book consisting of those bids and offers below and above the best bid and the best offer for selected instruments. There were significant bandwidth considerations in the design of this system, and the available bandwidth was limited to 9600 bps. Additionally, there were severe constraints relating to provision of a level playing field that would ensure all market participants would receive the same information within a narrow time window. In this design, it was viewed that a market grid was the primary means for monitoring the state of the market which would allow the brokers (who were also largely responsible for defining the display) to monitor multiple instruments and be able to rapidly provide best bid and offer information to their customers on the phone.

37. However, there was a need particularly for larger customers and for larger orders to provide visibility into the order book for selected instruments at selected points in time. The compromise was to provide a function whereby the GLOBEX user could click on a single instrument and request a pop-up window display of a pre-defined region of the central limit order book. Due to bandwidth constraints, the number of such windows that could be concurrently on the screen was limited and the depth of display of those windows was limited to the best five bids and the best five offers. In order not to obscure more of the display than absolutely necessary, these pop-up book display windows were designed to be as compact as possible. In particular only those price levels with an active bid or offer were shown and the bids were shown beside the offers with the best bid and best offer at the top of their respective lists. In this way, the pop-up book display mimicked the best bid / best offer display in the market grid while providing information on the depth of the market beneath that best bid and offer. The illustration

# Explore Litigation Insights

Docket Alarm provides insights to develop a more informed litigation strategy and the peace of mind of knowing you're on top of things.

## Real-Time Litigation Alerts



Keep your litigation team up-to-date with **real-time alerts** and advanced team management tools built for the enterprise, all while greatly reducing PACER spend.

Our comprehensive service means we can handle Federal, State, and Administrative courts across the country.

## Advanced Docket Research



With over 230 million records, Docket Alarm's cloud-native docket research platform finds what other services can't. Coverage includes Federal, State, plus PTAB, TTAB, ITC and NLRB decisions, all in one place.

Identify arguments that have been successful in the past with full text, pinpoint searching. Link to case law cited within any court document via Fastcase.

## Analytics At Your Fingertips



Learn what happened the last time a particular judge, opposing counsel or company faced cases similar to yours.

Advanced out-of-the-box PTAB and TTAB analytics are always at your fingertips.

## API

Docket Alarm offers a powerful API (application programming interface) to developers that want to integrate case filings into their apps.

## LAW FIRMS

Build custom dashboards for your attorneys and clients with live data direct from the court.

Automate many repetitive legal tasks like conflict checks, document management, and marketing.

## FINANCIAL INSTITUTIONS

Litigation and bankruptcy checks for companies and debtors.

## E-DISCOVERY AND LEGAL VENDORS

Sync your system to PACER to automate legal marketing.