Figure 1: Watch List

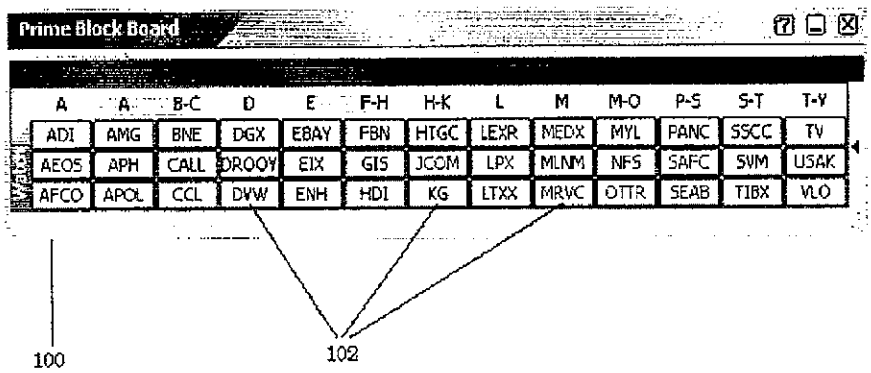


Figure 2: Enlarged Symbol on Watch list

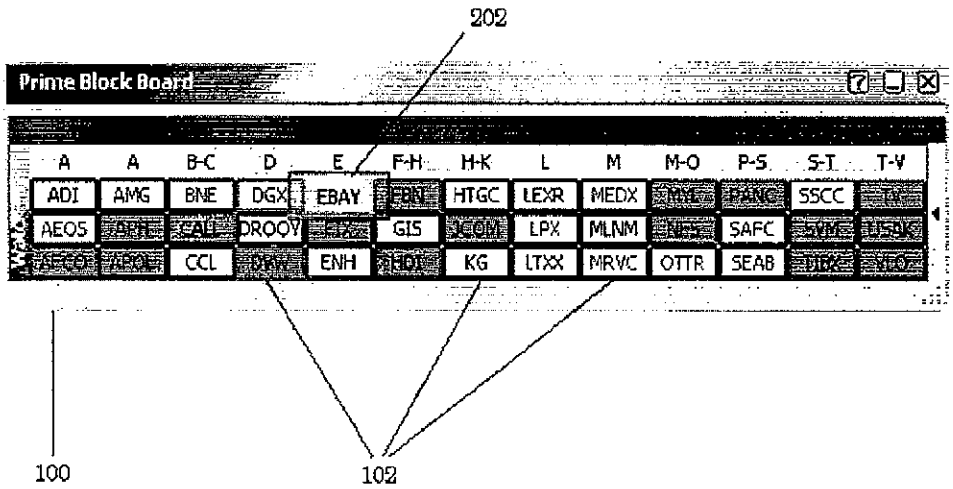


Figure 3: Dashboard

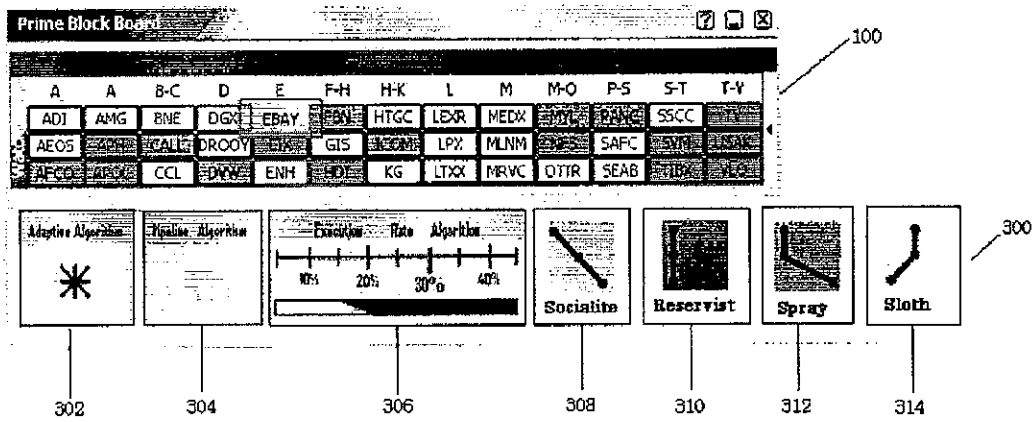


Figure 4: Dashboard with Behavior Matrix and display of execution rates for selected tactical algorithm

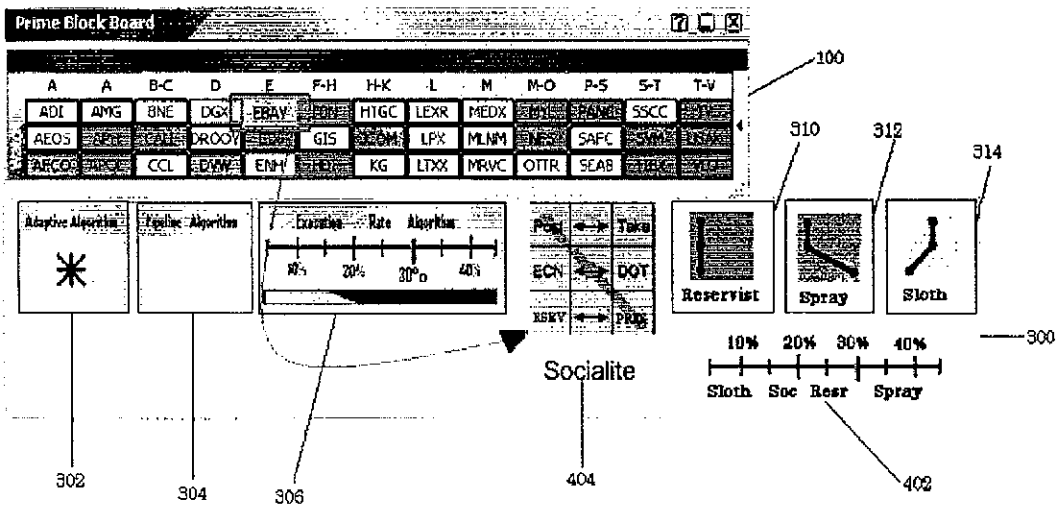


Figure 5: Dashboard with "Fishbone"

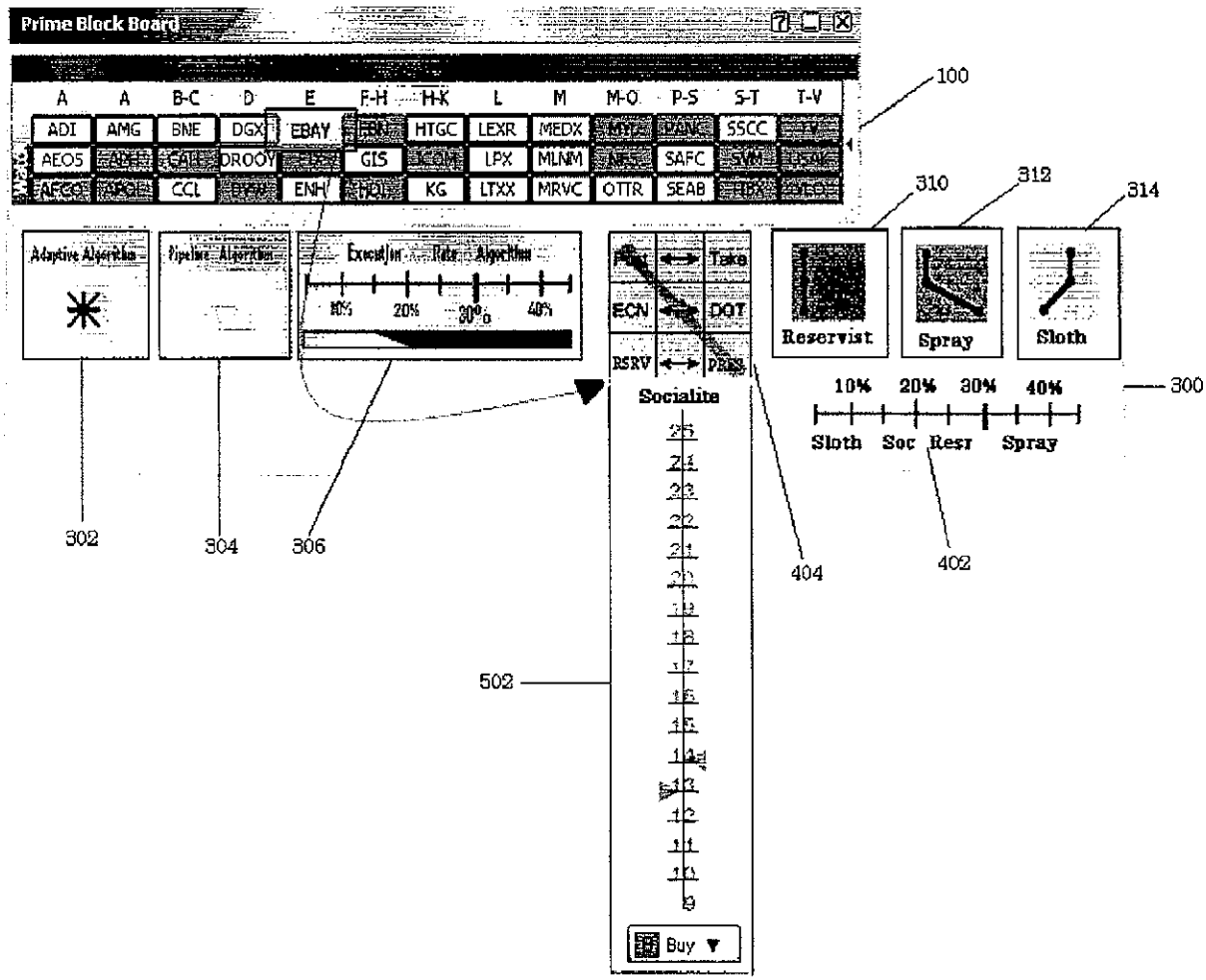


Figure 6: Dropping symbol on desired participation rate to launch Fishbone for Participation Rate Algorithm

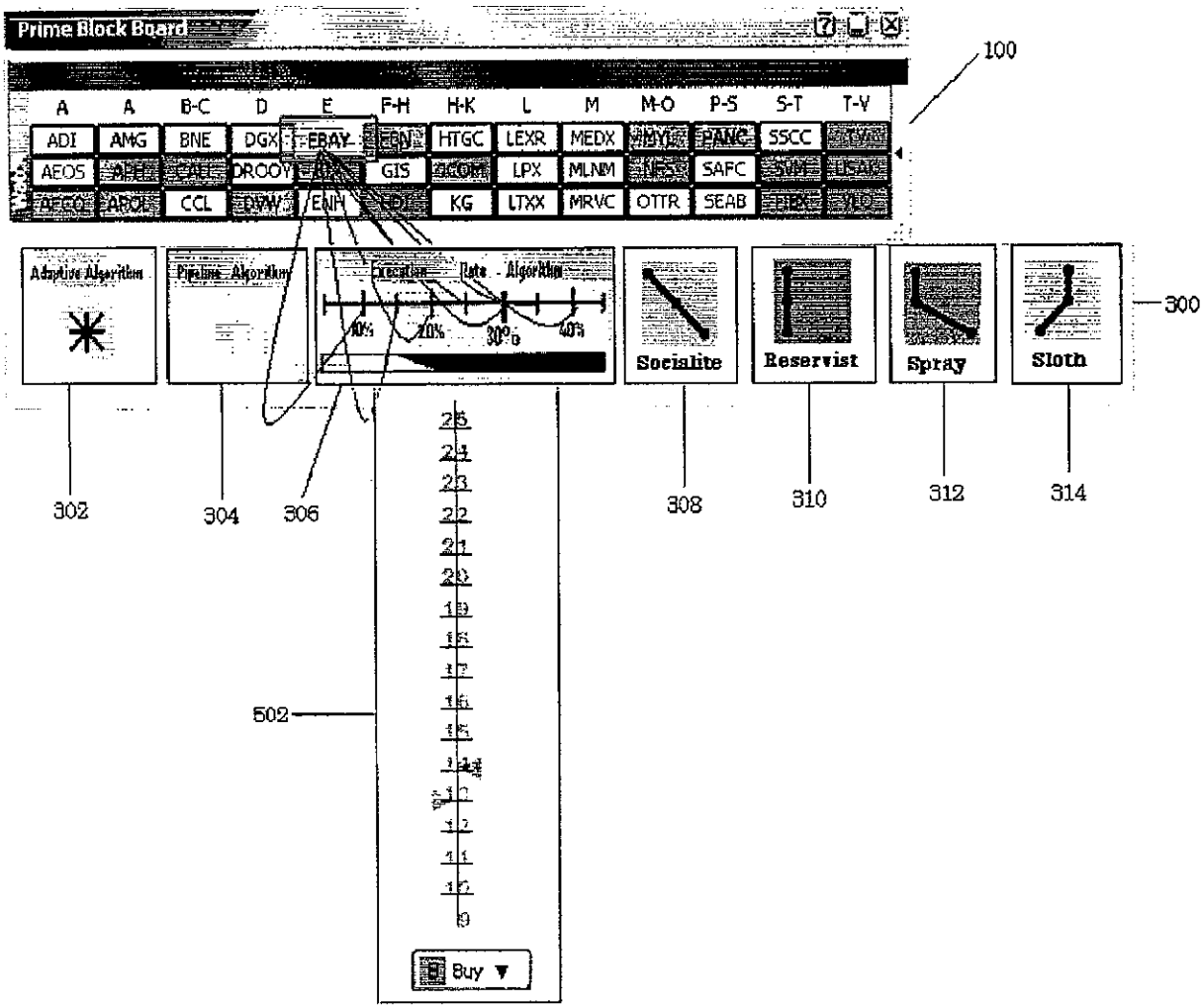


Figure 7: Dropping symbol on Pipeline Algorithm to launch order entry box

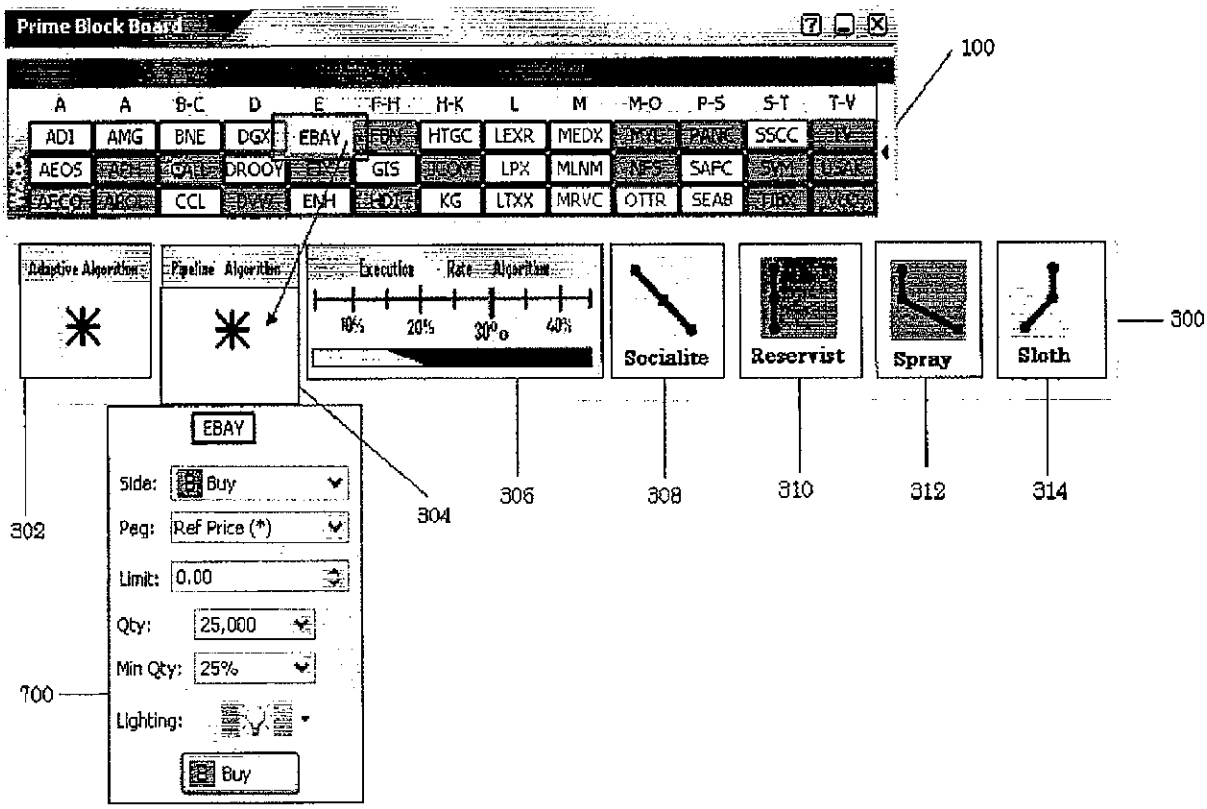


Figure 8: Positions Window

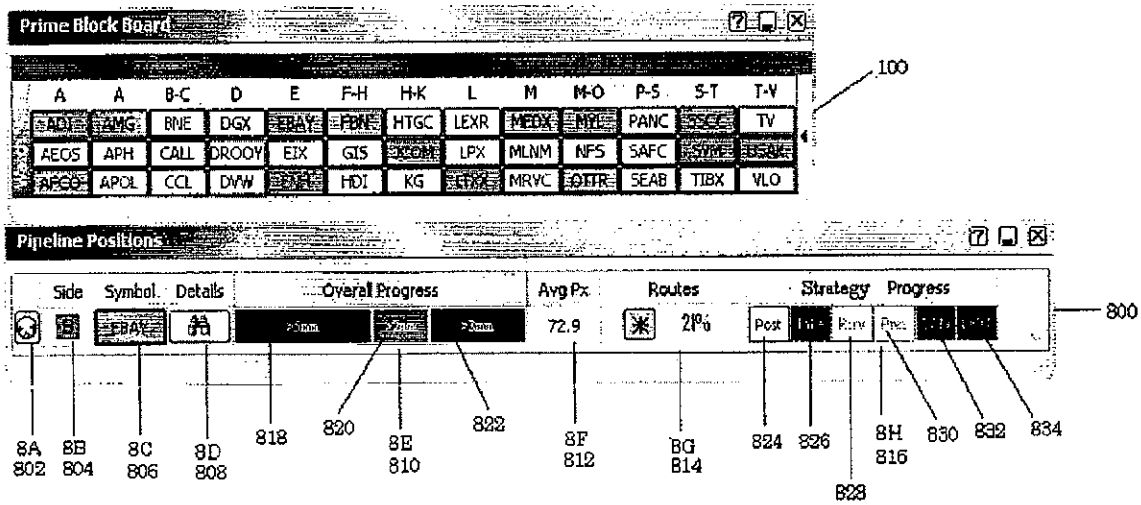


Figure 9: Positions window with "Overall Progress" Information Box

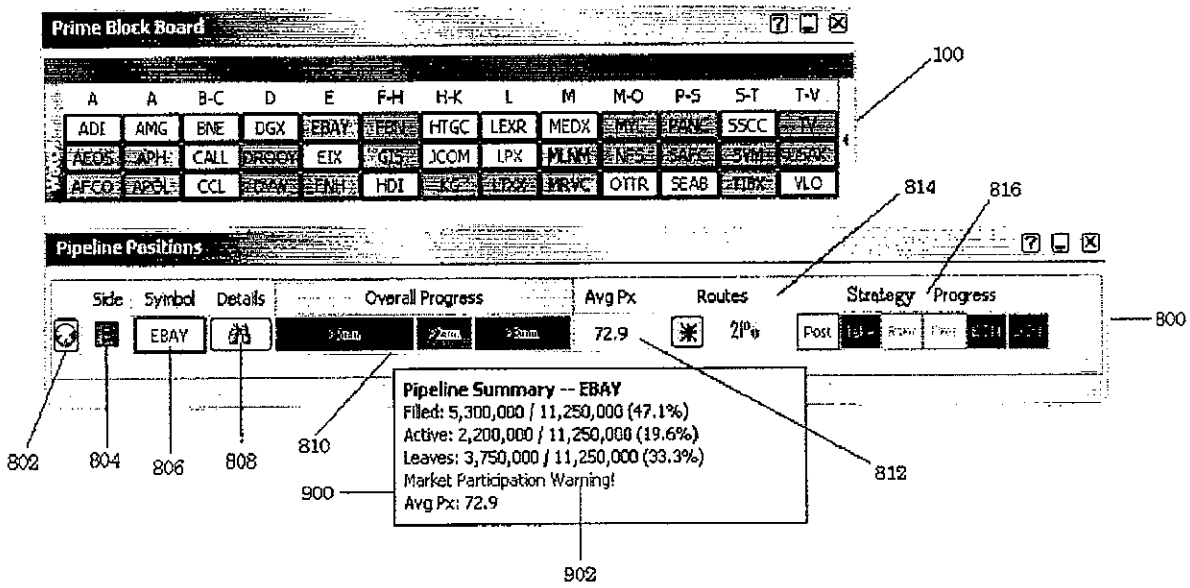


Figure 10: Positions Window with Trade Details Information Box

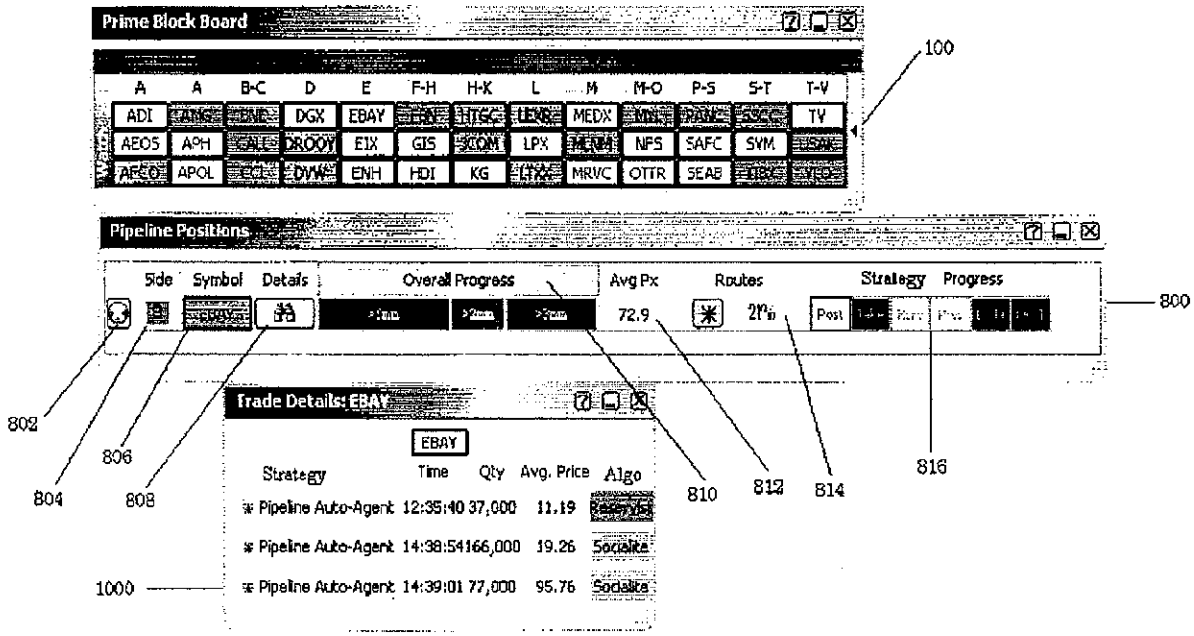


Figure 11: Examples of tactic update messages in Strategy Progress area

Fig 11A

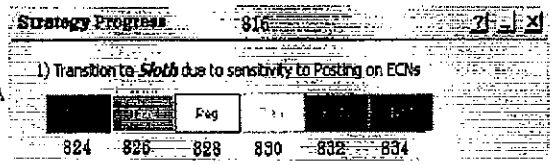


Fig 11B

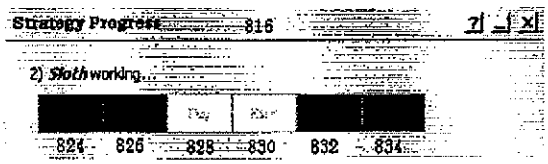


Fig 11C

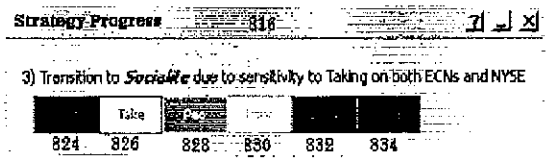


Fig 11D

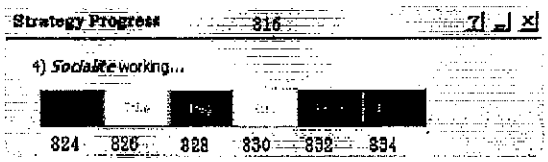


Fig 11E

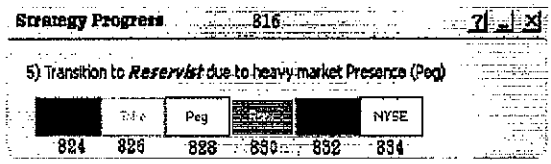


Fig 11F

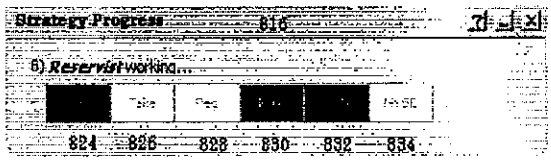


Fig 11G

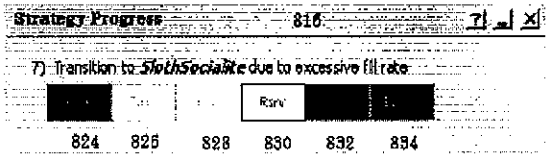


Fig 11H

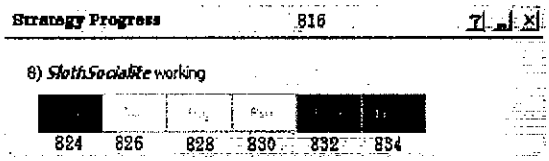


Figure 12: Positions window with active orders in multiple symbols

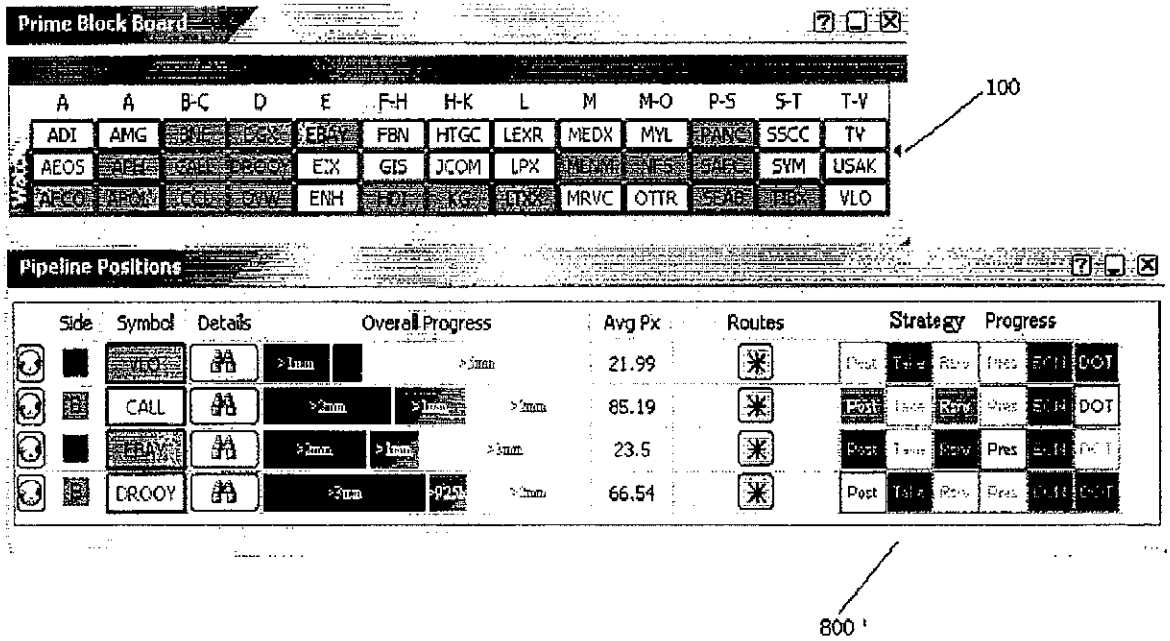


Figure 13: Positions Window for Symbol with multiple active algorithms

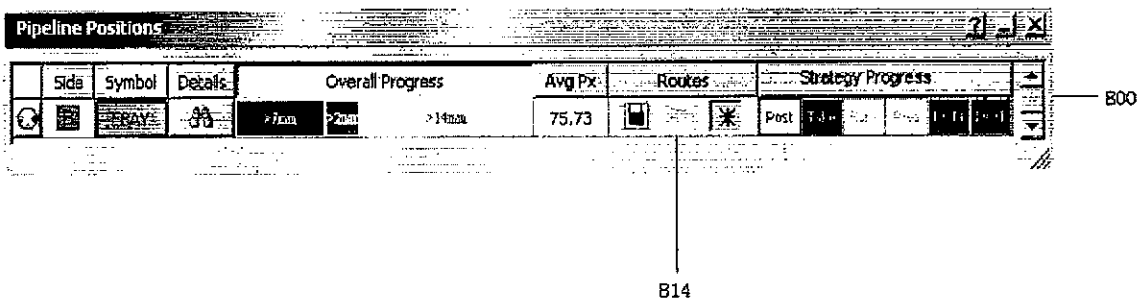


Figure 14: Positions window Toolbar

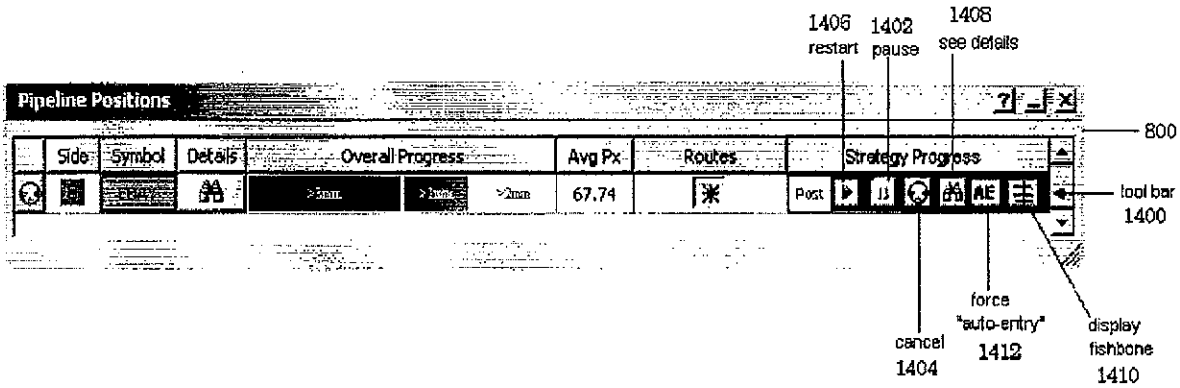


Figure 15: Positions Window Toolbar in Pipeline embodiment

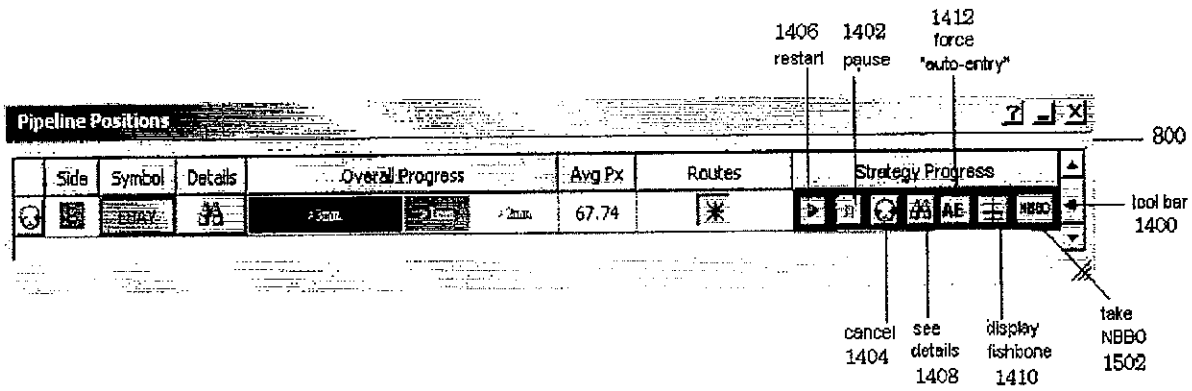


Figure 16: Fishbone for active algorithm launched from Positions window, shows limit price for active algorithm and current bid/offer.

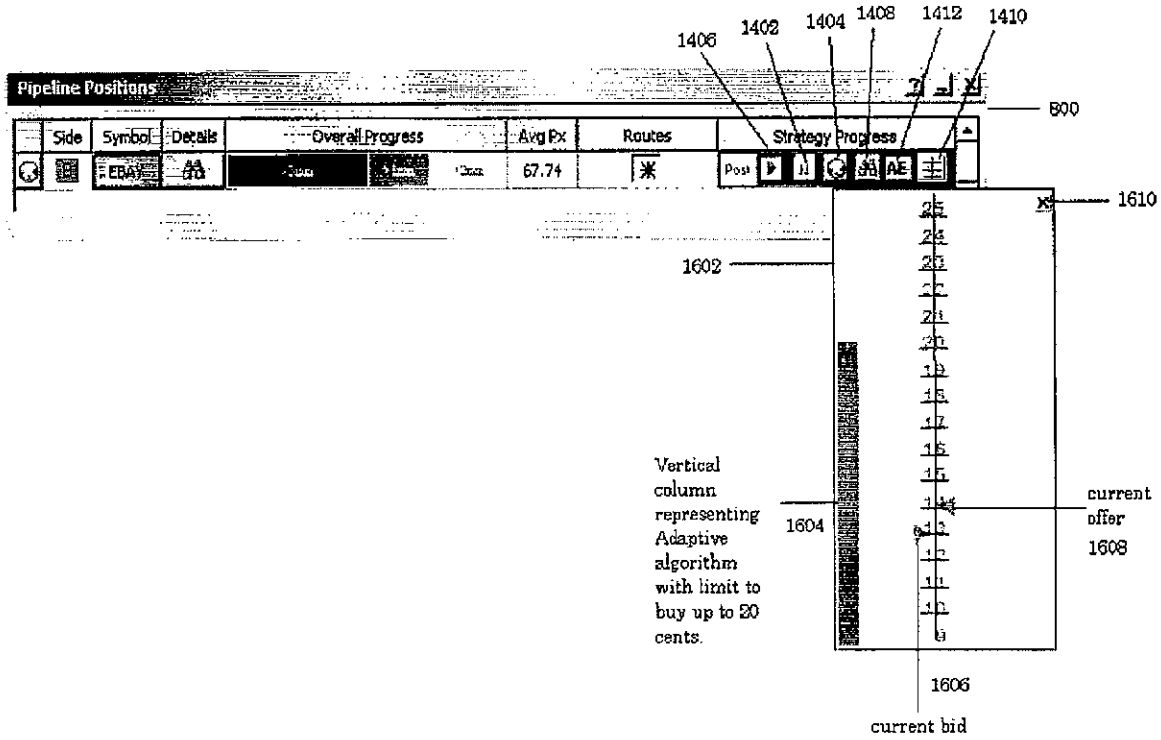


Figure 17: Order box launched from active Fishbone used to alter algorithm's operating parameters

Fig 17A

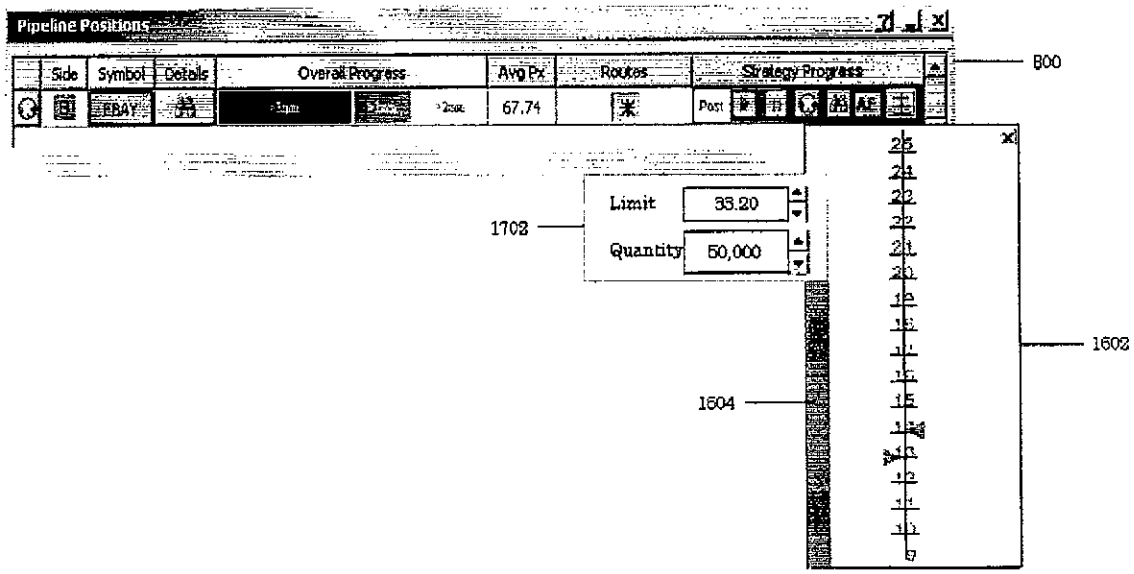


Fig 17B

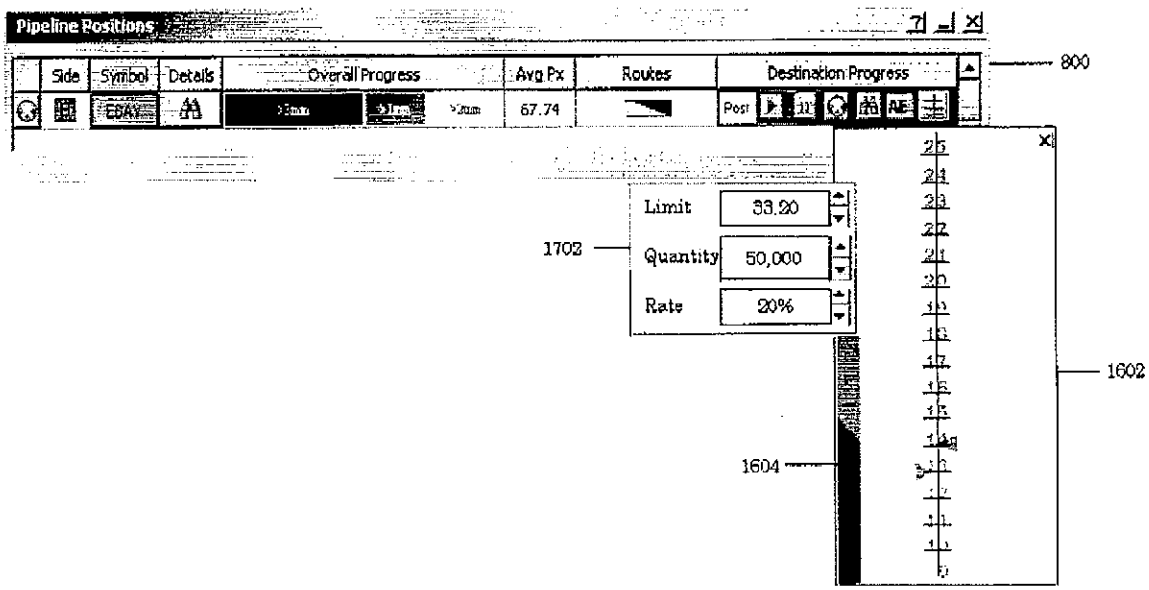


Figure 18: Fishbone for active algorithm launched from Positions window toolbar, shows pending and filled orders

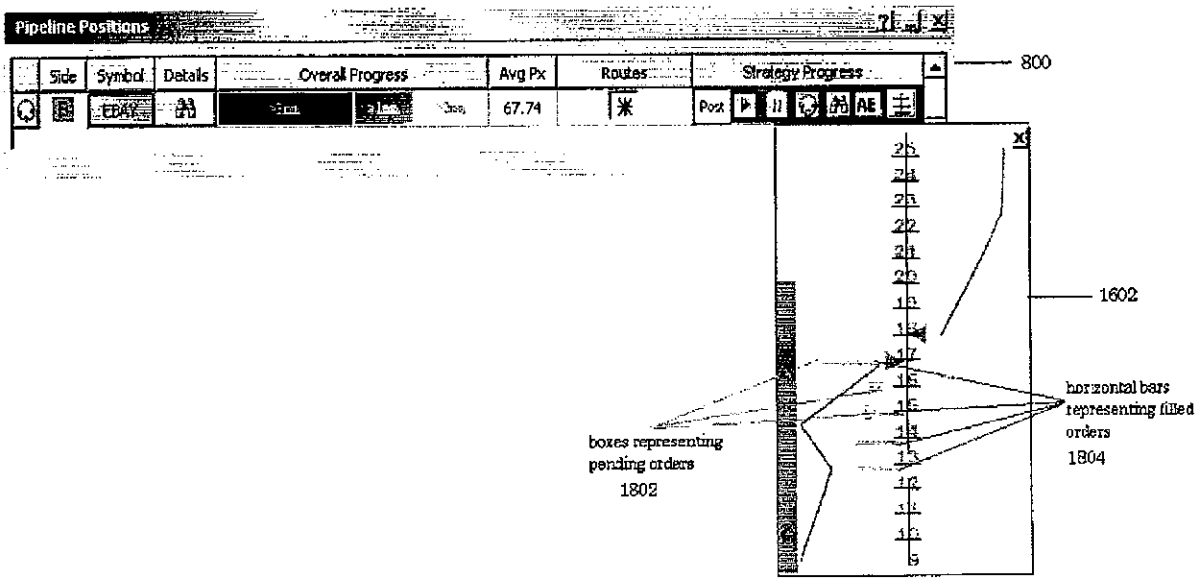


Figure 19: Fishbone for active algorithm launched from Positions window tool bar, shows liquidity lines representing effective depth of book

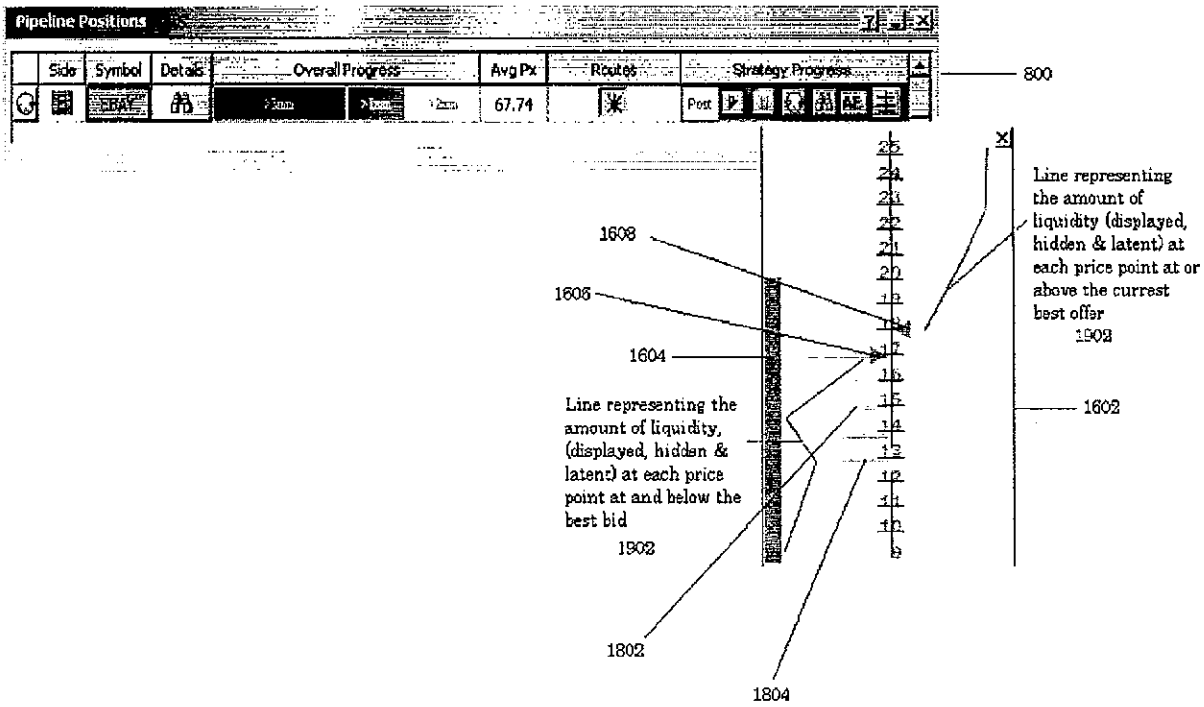


Figure 20: Fishbone in Strategy Progress area with "Display Benchmark Monitor Dial" button

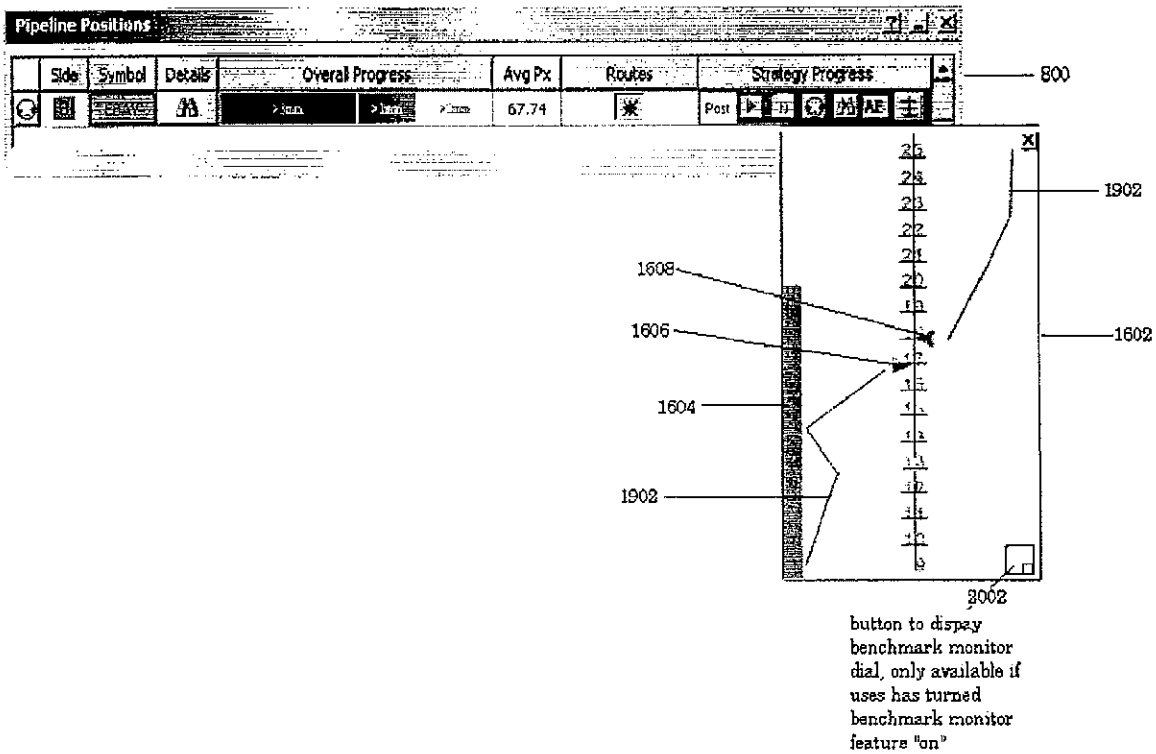


Figure 21: "Inactive" Benchmark Dial below fishbone in Strategy Process area

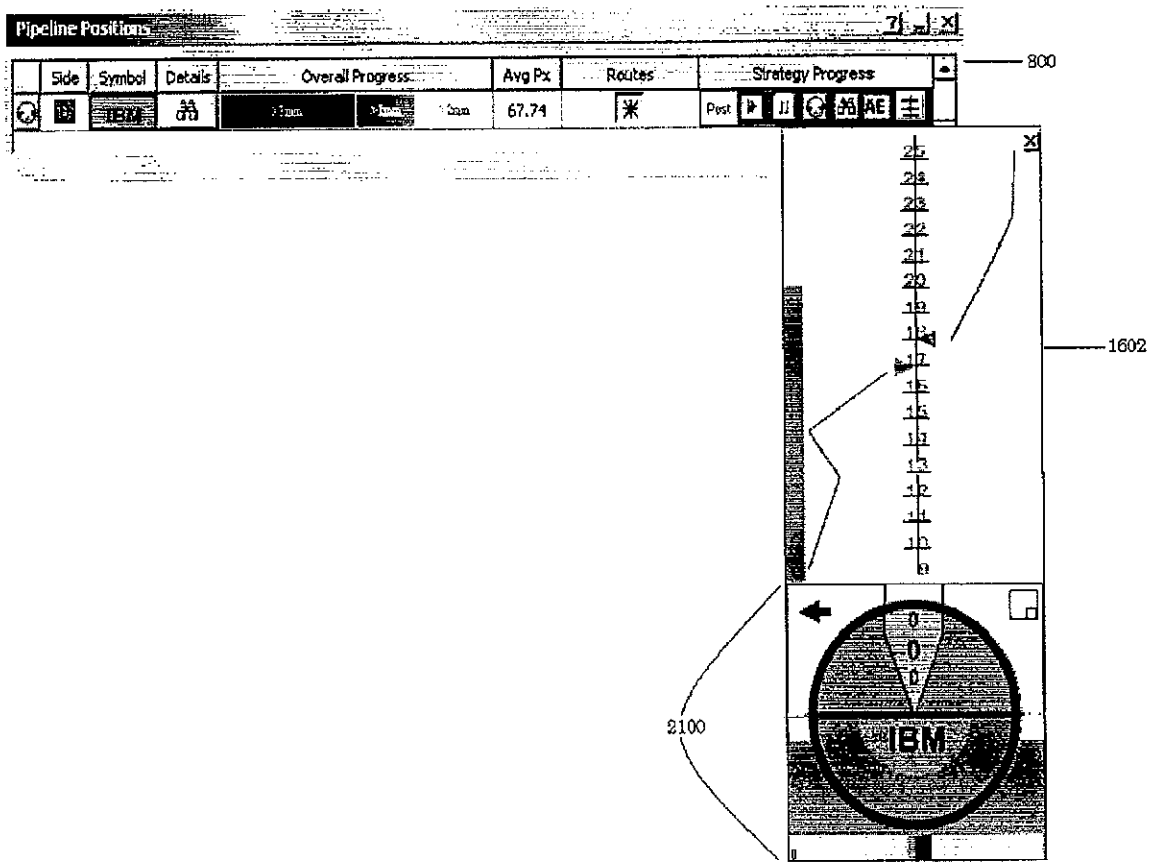


Figure 22: Active Benchmark Dial below fishbone in Strategy Process area with numeric indicators labeled

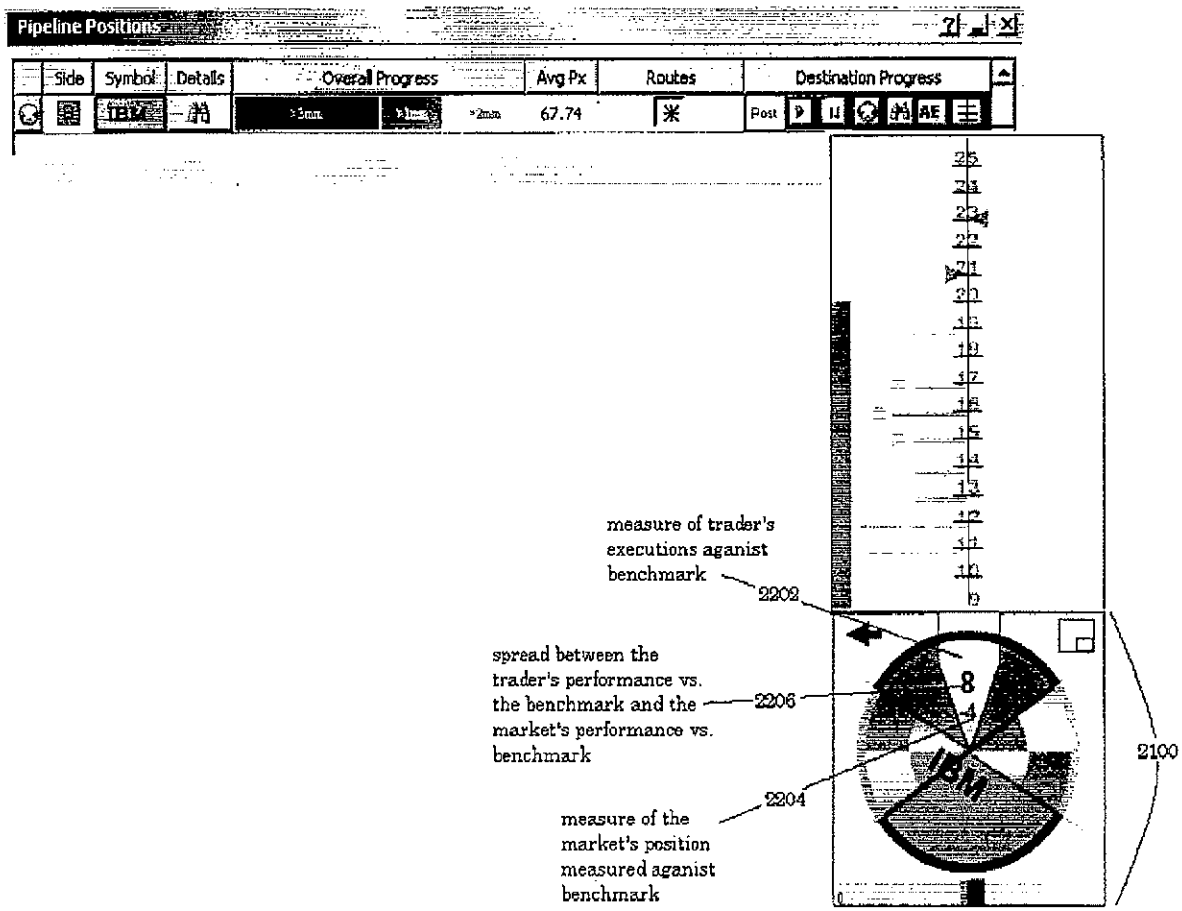


Figure 23: Active Benchmark Dial below fishbone in Strategy Process area with graphic indicators labeled

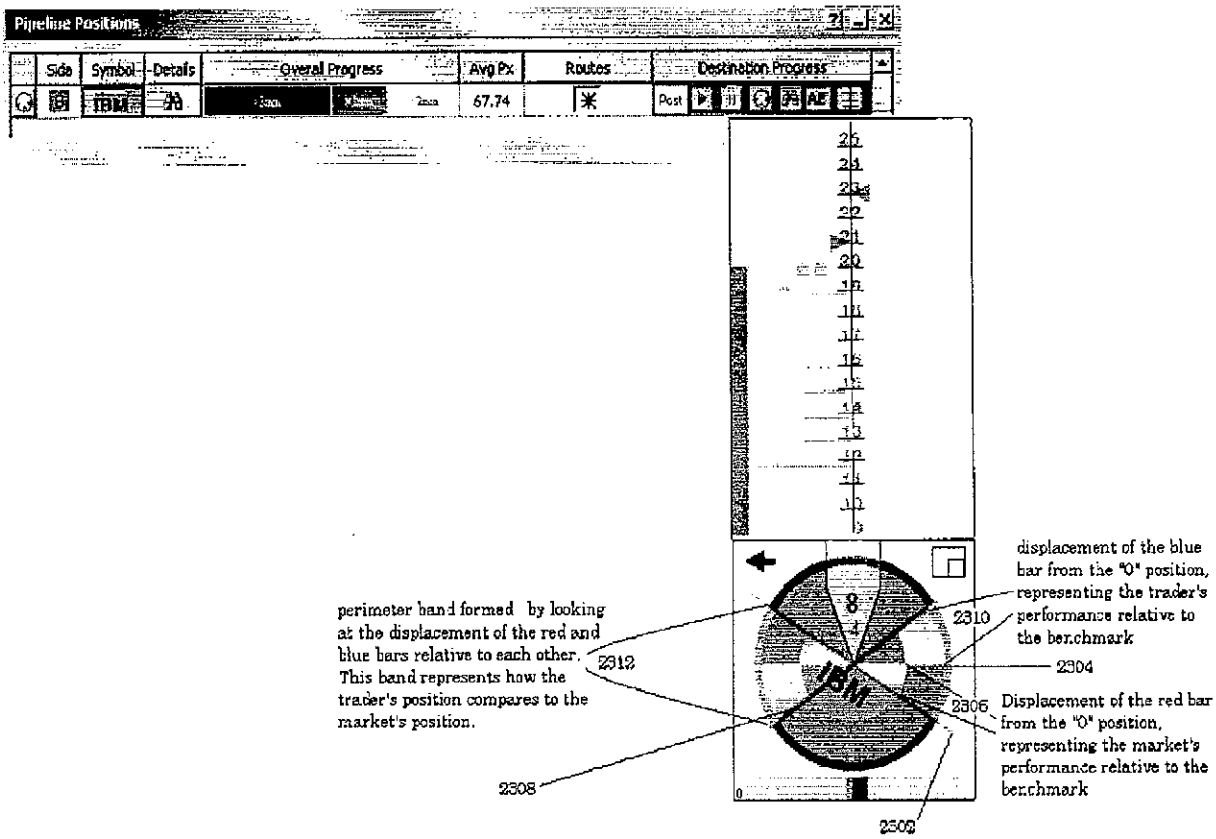
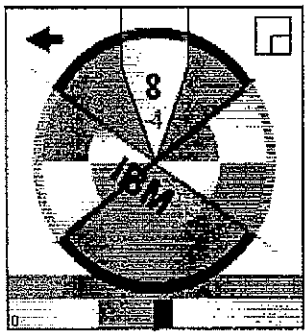


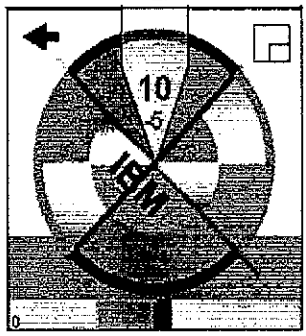
Figure 24: Series of active benchmark dials

Fig 24A 1.



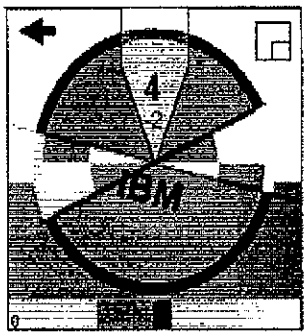
The same dial from Figure 22, the trader is beating VWAP by 4 cents, the market is missing VWAP by 4 cents and as a result the trader is making 8 cents per share.

Fig 24B 2.



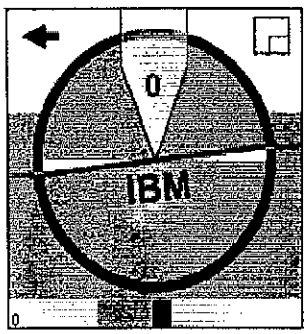
The market has moved further in the trader's favor. Now he is beating VWAP by 5 cents, the market is missing VWAP by 5 cents and the trader is making 10 cents per share. Note that the size of the market representing wedge and the trader representing trapezoid are larger and the red and green shading is darker in both areas.

Fig 24C 3.



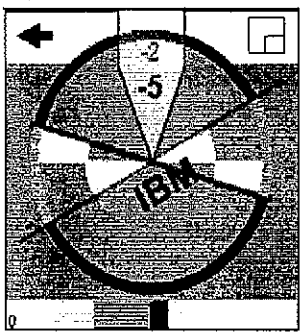
The market has turned, now the trader is only beating VWAP by 3 cents, the market is only missing VWAP by 2 cents and the trader is only making 4 cents per share. Also note the changes in the size and depth of color in the shaded areas.

Fig 24D 4.



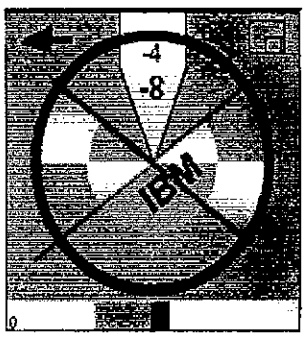
With continued movement, the trader and the market are now even, both beating VWAP by one cent. As a result the trader is now even with the market.

Fig 24E 5.



As the market continues to move, the trader is now missing VWAP by 2 cents, while the market is beating VWAP by 3 cents. As a result the trader is now losing 5 cents a share.

Fig 24F 6.



In a total reversal of fortune, the market has moved such that the trader is in the very opposite position from where he started: he is missing VWAP by 4 cents, the market is beating VWAP by 4 cents and he is losing 8 cents per share.

Figure 25: Using the "rotate" arrow to flip from the benchmark dial to the market context

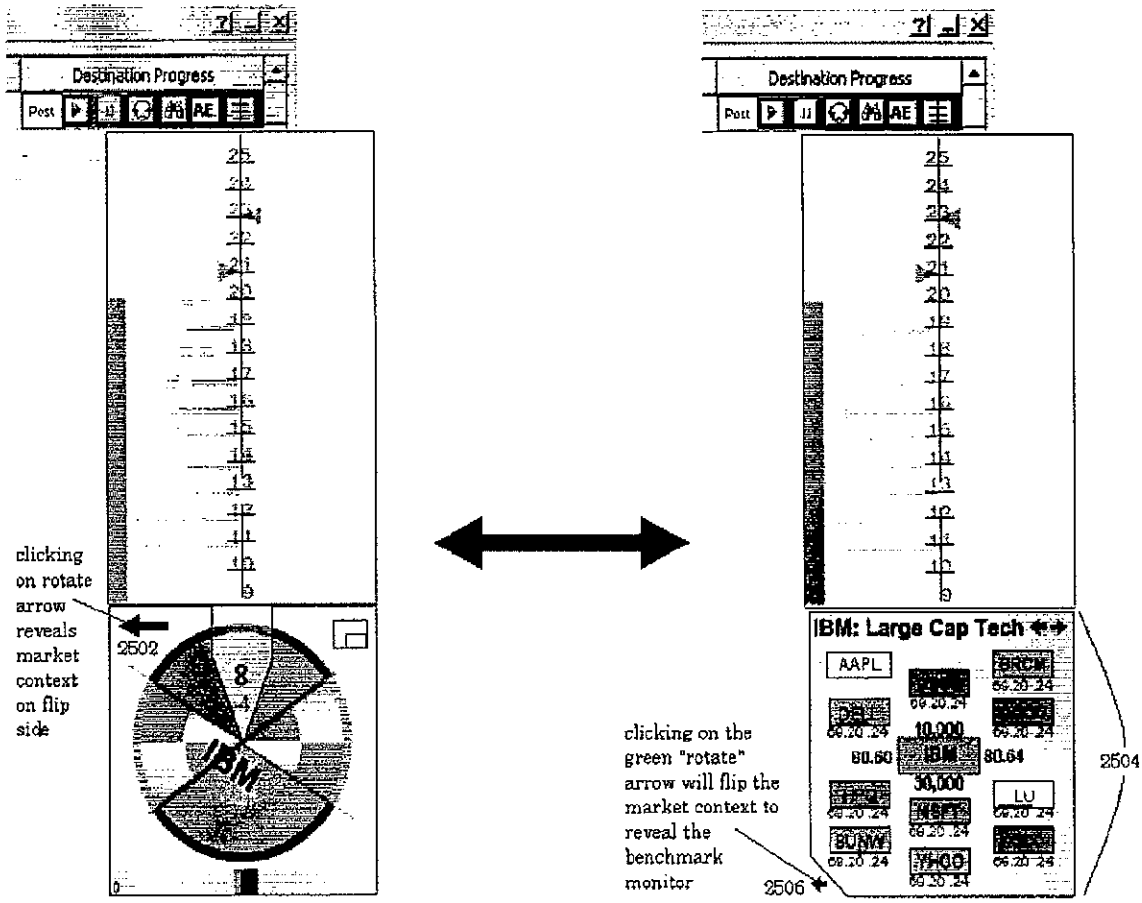


Fig 25A Fig 25B

Figure 26: Example Market Context, labeled

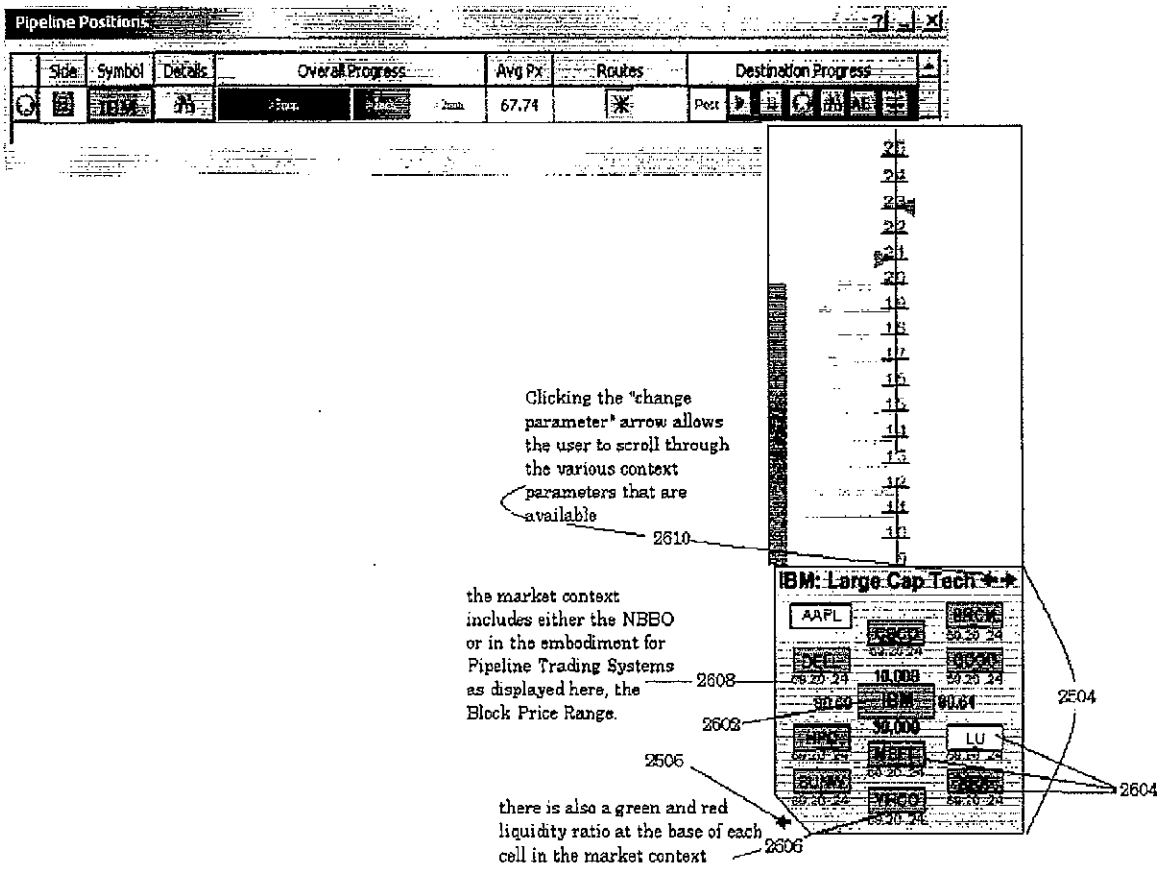


Figure 27

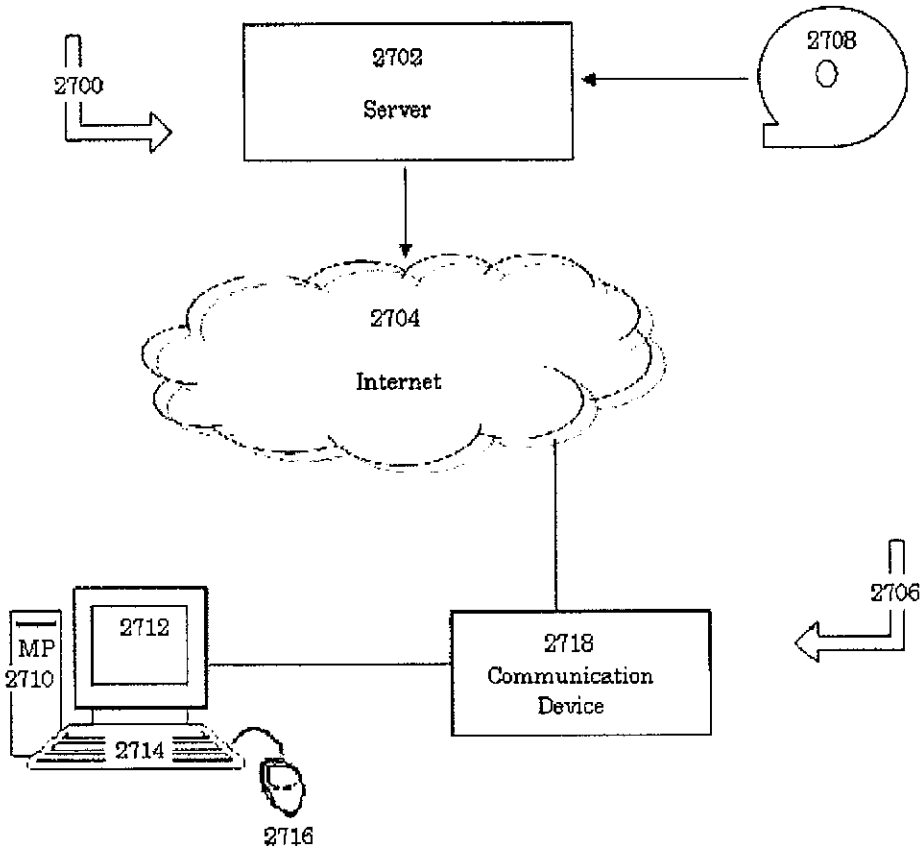

2700
2702
Server
2708
2704
Internet
2706
2712
MP
2710
2718
Communication
Device
2714
2716

Figure 28A

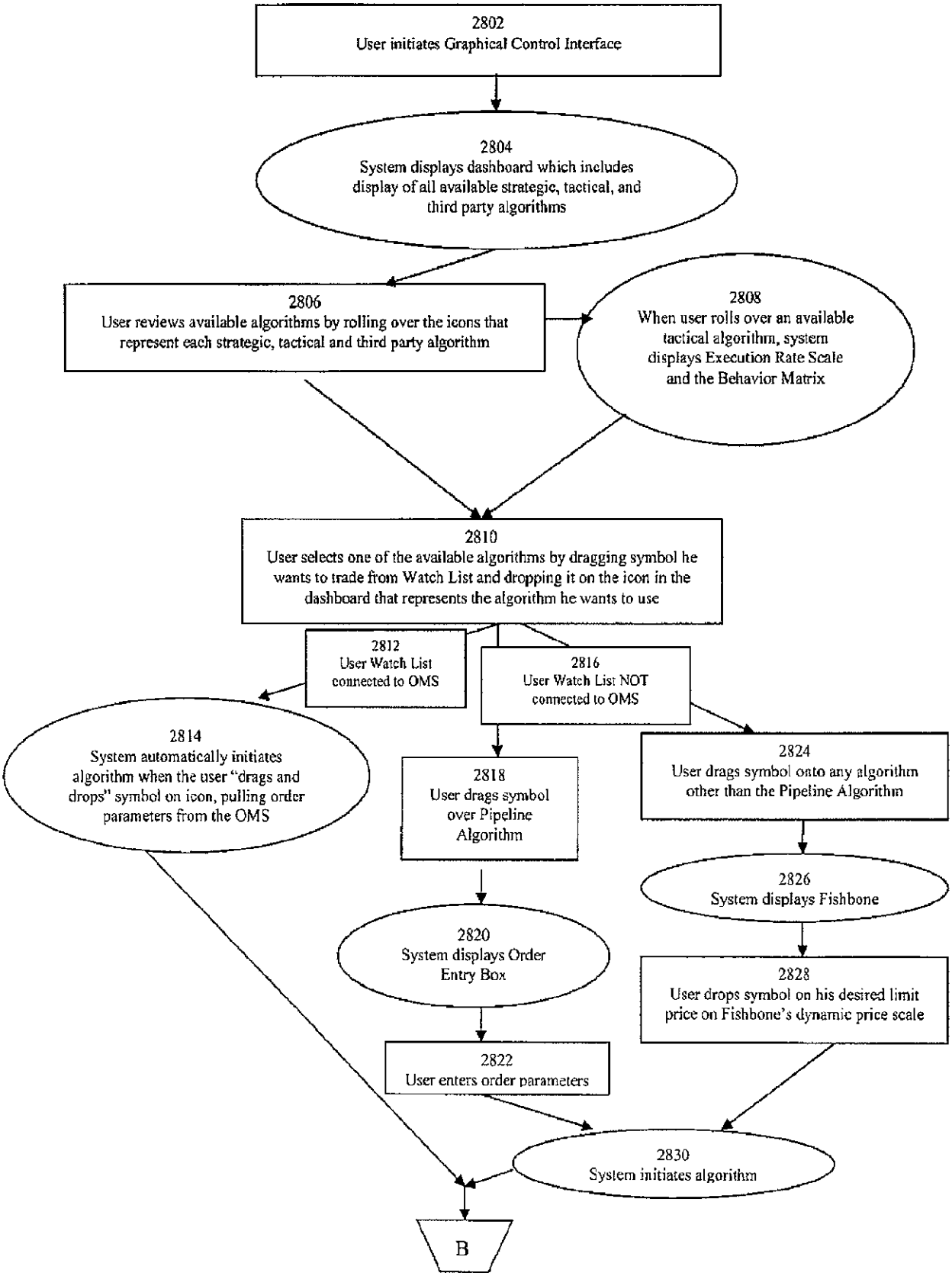

2802
User initiates Graphical Control Interface
2804
System displays dashboard which includes display of all available strategic, tactical, and third party algorithms
2806
User reviews available algorithms by rolling over the icons that represent each strategic, tactical and third party algorithm
2808
When user rolls over an available tactical algorithm, system displays Execution Rate Scale and the Behavior Matrix
2810
User selects one of the available algorithms by dragging symbol he wants to trade from Watch List and dropping it on the icon in the dashboard that represents the algorithm he wants to use
2812
User Watch List connected to OMS
2816
User Watch List NOT connected to OMS
2814
System automatically initiates algorithm when the user "drags and drops" symbol on icon, pulling order parameters from the OMS
2818
User drags symbol over Pipeline Algorithm
2824
User drags symbol onto any algorithm other than the Pipeline Algorithm
2826
System displays Fishbone
2820
System displays Order Entry Box
2828
User drops symbol on his desired limit price on Fishbone's dynamic price scale
2822
User enters order parameters
2830
System initiates algorithm
B

Figure 28B

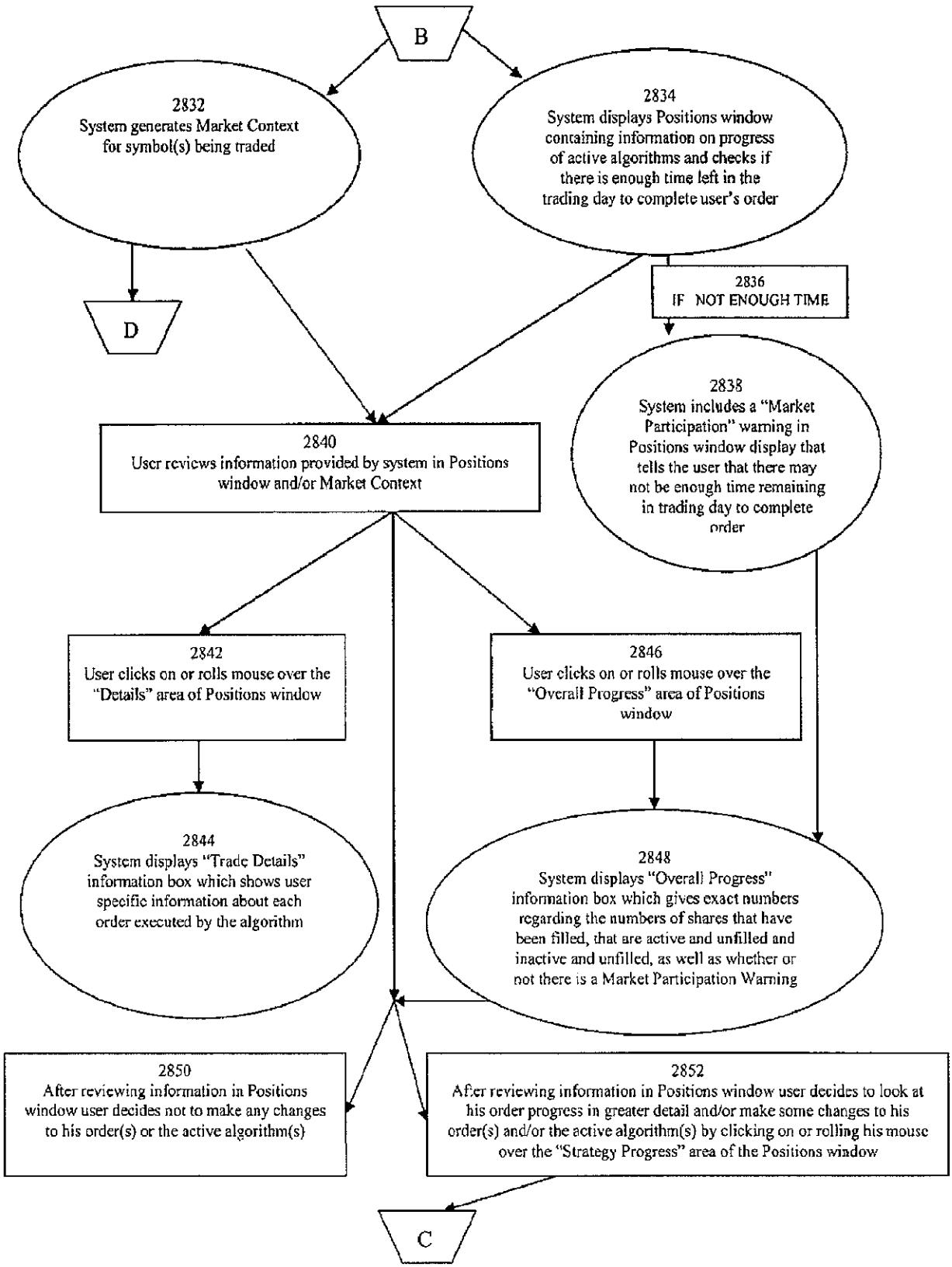

B
2832
System generates Market Context for symbol(s) being traded
2834
System displays Positions window containing information on progress of active algorithms and checks if there is enough time left in the trading day to complete user's order
D
2836
IF NOT ENOUGH TIME
2838
System includes a "Market Participation" warning in Positions window display that tells the user that there may not be enough time remaining in trading day to complete order
2840
User reviews information provided by system in Positions window and/or Market Context
2842
User clicks on or rolls mouse over the "Details" area of Positions window
2846
User clicks on or rolls mouse over the "Overall Progress" area of Positions window
2844
System displays "Trade Details" information box which shows user specific information about each order executed by the algorithm
2848
System displays "Overall Progress" information box which gives exact numbers regarding the numbers of shares that have been filled, that are active and unfilled and inactive and unfilled, as well as whether or not there is a Market Participation Warning
2850
After reviewing information in Positions window user decides not to make any changes to his order(s) or the active algorithm(s)
2852
After reviewing information in Positions window user decides to look at his order progress in greater detail and/or make some changes to his order(s) and/or the active algorithm(s) by clicking on or rolling his mouse over the "Strategy Progress" area of the Positions window
C

Figure 28C

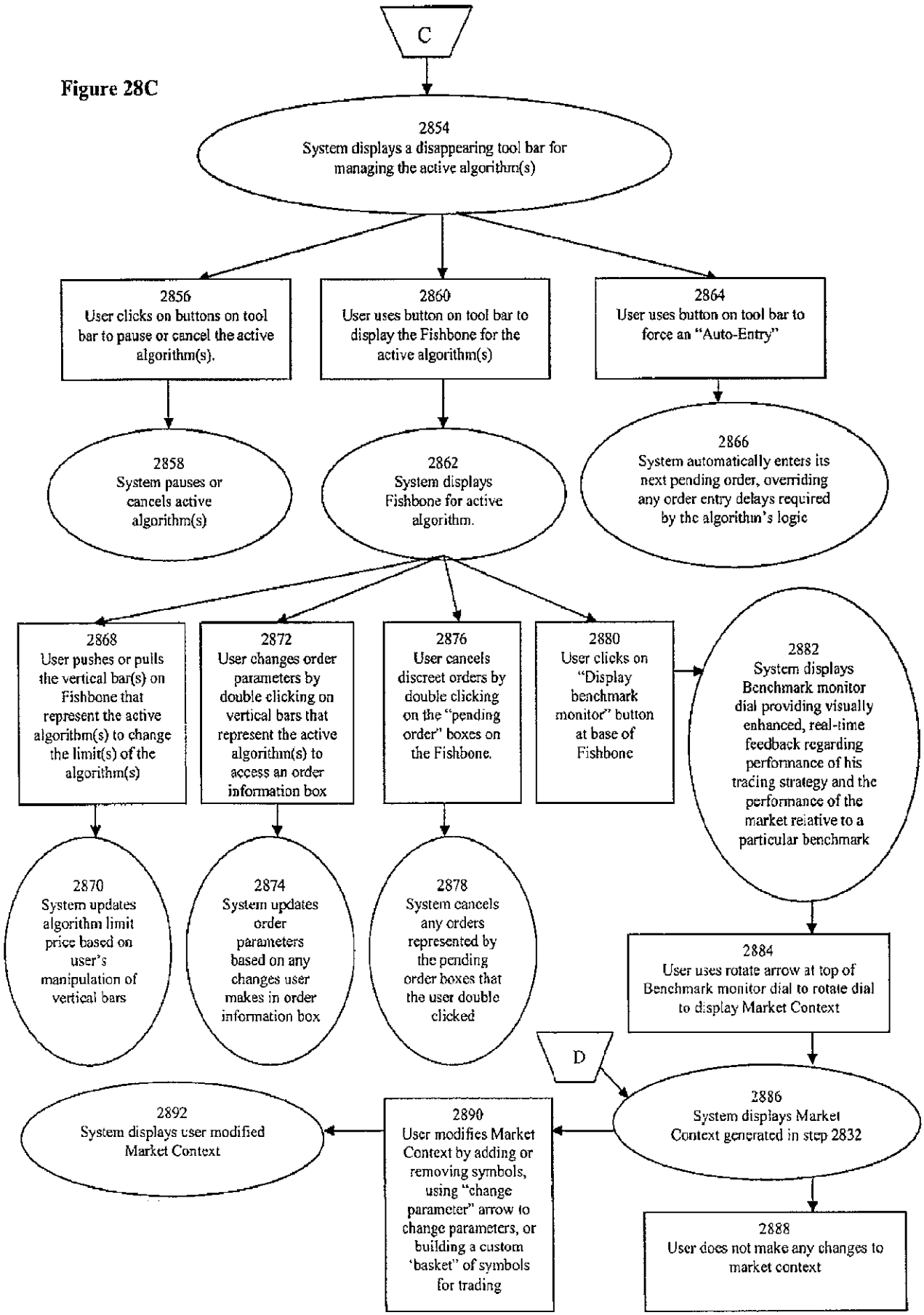

C
2854
System displays a disappearing tool bar for managing the active algorithm(s)
2856
User clicks on buttons on tool bar to pause or cancel the active algorithm(s).
2860
User uses button on tool bar to display the Fishbone for the active algorithm(s)
2864
User uses button on tool bar to force an "Auto-Entry"
2858
System pauses or cancels active algorithm(s)
2862
System displays Fishbone for active algorithm.
2866
System automatically enters its next pending order, overriding any order entry delays required by the algorithm's logic
2868
User pushes or pulls the vertical bar(s) on Fishbone that represent the active algorithm(s) to change the limit(s) of the algorithm(s)
2872
User changes order parameters by double clicking on vertical bars that represent the active algorithm(s) to access an order information box
2876
User cancels discreet orders by double clicking on the "pending order" boxes on the Fishbone.
2880
User clicks on "Display benchmark monitor" button at base of Fishbone
2882
System displays Benchmark monitor dial providing visually enhanced, real-time feedback regarding performance of his trading strategy and the performance of the market relative to a particular benchmark
2870
System updates algorithm limit price based on user's manipulation of vertical bars
2874
System updates order parameters based on any changes user makes in order information box
2878
System cancels any orders represented by the pending order boxes that the user double clicked
2884
User uses rotate arrow at top of Benchmark monitor dial to rotate dial to display Market Context
D
2886
System displays Market Context generated in step 2832
2892
System displays user modified Market Context
2890
User modifies Market Context by adding or removing symbols, using "change parameter" arrow to change parameters, or building a custom 'basket" of symbols for trading
2888
User does not make any changes to market context

Figure 29

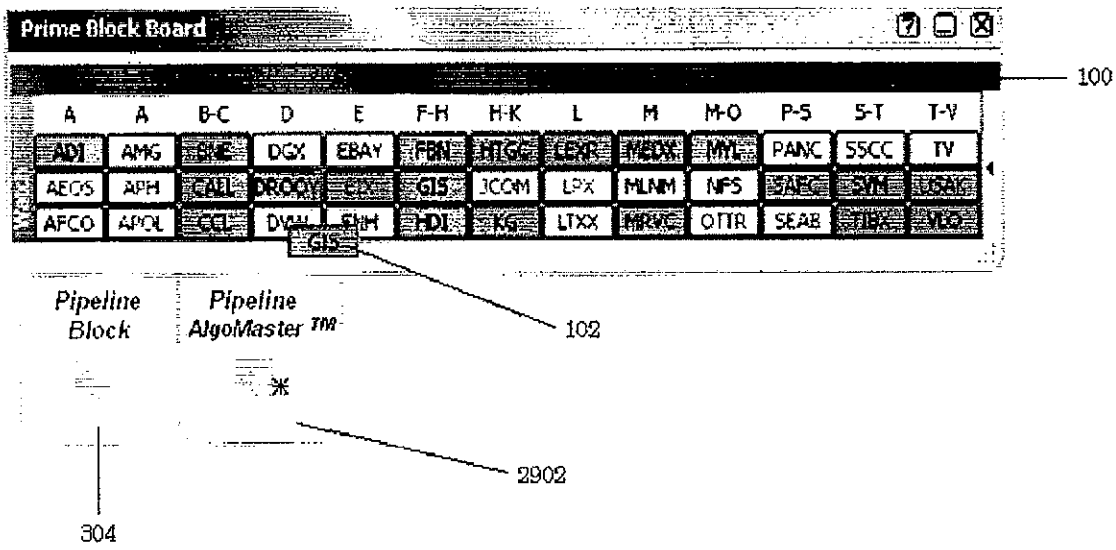

Prime Block Board
100
A
A
B-C
D
E
F-H
H-K
L
M
M-O
P-S
S-T
T-V
ADI
AMG
DGX
EBAY
PANC
55CC
TV
AECS
APH
LPX
MLNM
NFS
AFCO
APOL
LTXX
OTTR
SEAB
GIS
102
Pipeline Block
Pipeline AlgoMaster ™
2902
304

Figure 30

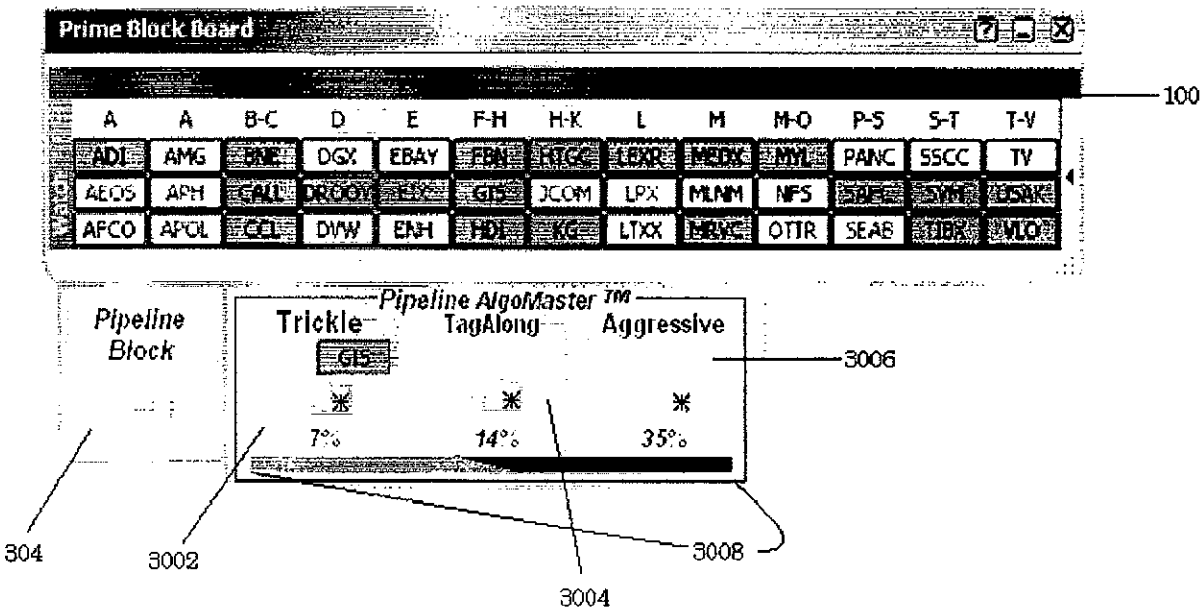

Prime Block Board
A A B-C D E F-H H-K L M M-O P-S S-T T-V
ADI AMG BNE DGX EBAY FBN HTGC LEXR MEDX MYL PANC SSCC TV
AEOS APH CALL DROOY EIX GIS JCOM LPX MLNM NFS SAFE SVM USAK
AFCO APOL CCL DVW ENH HDI KG LTXX MRVC OTTR SEAB TIBX VLO
100
Pipeline Block
Pipeline AlgoMaster ™
Trickle
TagAlong
Aggressive
GIS
7%
14%
35%
3006
304
3002
3004
3008

Figure 31

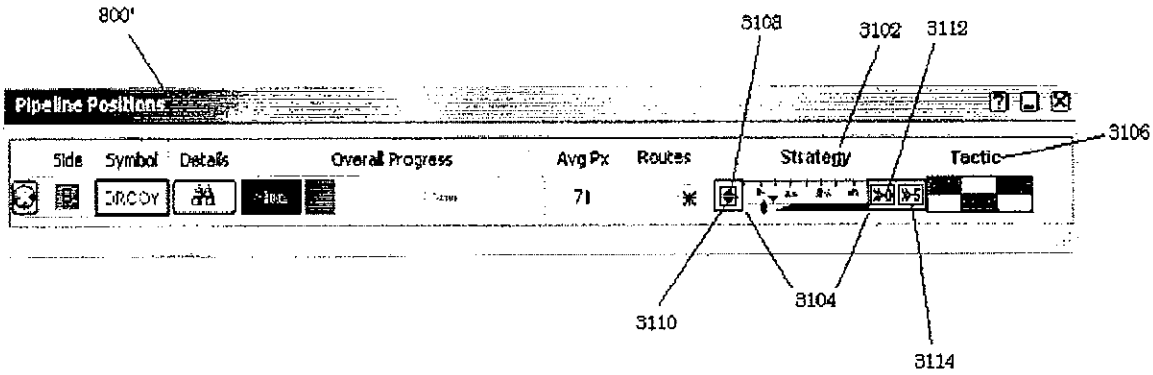

800'
3108
3102
3112
3106
Pipeline Positions
Side
Symbol
Details
Overall Progress
Avg Px
Routes
Strategy
Tactic
71
3110
3104
3114

Figure 32

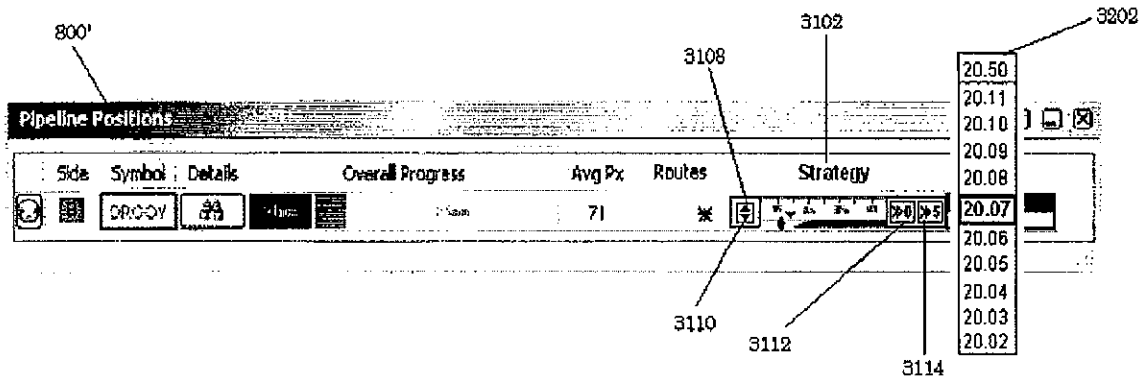
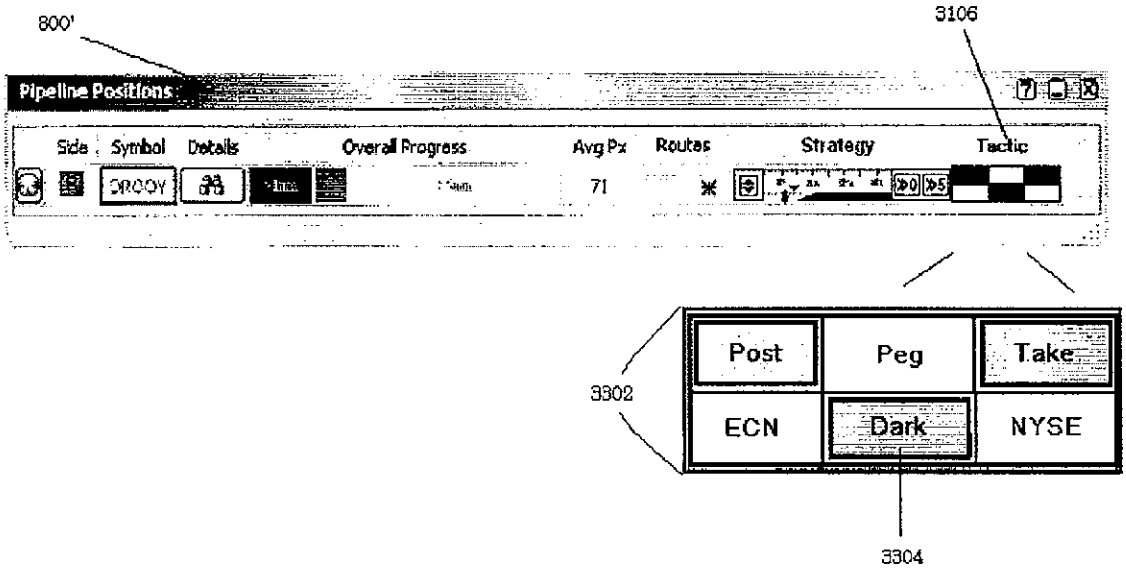

800'
3102
3108
3202
Pipeline Positions
Side
Symbol
Details
Overall Progress
Avg Px
Routes
Strategy
71
20.50
20.11
20.10
20.09
20.08
20.07
20.06
20.05
20.04
20.03
20.02
3110
3112
3114

Figure 33


800'
3106
Pipeline Positions
Side
Symbol
Details
Overall Progress
Avg Px
Routes
Strategy
Tactic
71
3302
Post
Peg
Take
ECN
Dark
NYSE
3304