

United States District Court,  
E.D. Texas, Lufkin Division.

**Vernon F. MINTON,**  
Plaintiff.

v.

**NATIONAL ASSOCIATION OF SECURITIES DEALERS, INC,**  
et al Defendant.

No. CIV.A. 9:00CV19

**Aug. 1, 2001.**

Owner of patent for method of trading securities sued competitor for infringement. Construing patent claim, the District Court, Cobb, J., held that: (1) claim placed no restriction or limitation on identity of "individual" traders; (2) ranking was required only when three or more offers were made; and (3) called-for ranking steps were relative to other factors.

Claim construed.

6,014,643. Construed.

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George E Chandler, Lufkin, TX, for Nasdaq Stock Market, Inc.

***MEMORANDUM OPINION AND ORDER ON CLAIMS CONSTRUCTION OF THE '643 PATENT***

**COBB, District Judge.**

On April 16, 2001, the Court held a Markman hearing with reference to the construction of U.S. Patent No. 6,014,643 ('643 patent) as has become standard practice since *Markman v. Westview Instruments, Inc.*, 52 F.3d 967 (Fed.Cir.1995)( *en banc* ). From the bench, the Court directed the parties to submit the prosecution history of the '643 patent, which the Court has now received and considered. The construction of the disputed claim terms of the '643' patent follows.

As presented to the Court, the parties contest interpretation of the following claim terminology as used in the '643 patent:

1) whether an "individual" and "individuals":

includes brokers, market makers, and specialists acting on behalf of non-brokers, or excludes brokers, market makers, and specialists in any capacity;

2) whether **all** offers to buy or sell a given security must be ranked in the ranking step; and

3) whether ranking first by price and secondly by quantity is to be considered absolute or relative to other factors.

### **Person of Reasonable Skill in the Art**

[1] To understand what the patent claims and teaches, the Court must examine it from the view point of a reasonably skilled person in the art, sometimes termed the "person of ordinary skill in the art" ("POOSA"). *Intellicall, Inc. v. Phonometrics, Inc.*, 952 F.2d 1384, 1387 (Fed.Cir.1992). Examining the subject matter of the patent, it is apparent that the POOSA must know more than just how to trade securities. Although claim one is a method claim, claim three is a means-plus-function apparatus claim, and thus the POOSA must possess a broad computer technology background to implement the structure required to practice the patent, including a knowledge of computer programming, client-server architectures, hardware configuration, network configuration and messaging protocols, graphical user interfaces, and finally, electronic securities trading.

### **Intrinsic vs. Extrinsic Evidence**

[2] [3] [4] Intrinsic evidence consists of the claims, the specification, and the prosecution history. FN1 See *Vitronics Corp. v. Conception, Inc.*, 90 F.3d 1576, 1582 (Fed.Cir.1996). Extrinsic evidence is comprised of everything else, and is not to be considered if the claims can be construed solely from the intrinsic evidence. FN2 There are two notable exceptions. First, the Court may examine extrinsic evidence for education regarding the technical background of the invention. *Pitney Bowes, Inc. v. Hewlett-Packard Co.*, 182 F.3d 1298, 1309 (Fed.Cir.1999). Second, dictionaries have been given a special position by the Federal Circuit of late in that dictionaries may be used to ascertain the normal meanings of words as long as there is no contradiction with the patent. *Interactive Gift Express, Inc. v. Compuserve, Inc.*, 231 F.3d 859, 866 at fn. ' \* ' (Fed.Cir.2000) (citations omitted).

FN1. Note the use of "consists" rather than "comprises."

FN2. Indeed, the Federal Circuit states that extrinsic evidence is necessary only in rare cases.

[5] [6] [7] [8] [9] [10] Intrinsic evidence has a hierarchy of weight: the claims, then the specification, and last the prosecution history, FN3 if in evidence. FN4 *Vitronics* at 1582. If the inventor does not engage in lexicographical ledgerdemain, then the specification need only be consulted to insure that fact. *Id.* Otherwise, the specification must be used to determine the meanings that the inventor has given to his claim terminology. *Id.* Care must be taken, however, to avoid improperly importing limitations from the specification that are not contained in the claims. *Intervet Am., Inc. v. Kee-Vet Lab., Inc.* 887 F.2d 1050, 1053 (Fed.Cir.1989). A typical mistake is to use the preferred embodiment as a limitation. See generally *Compuserve* (reading several improper limitations from the specification into the claims. After considering the intrinsic evidence, the Court sees no reason to go beyond the intrinsic evidence). FN5

FN3. The prosecution history is used to determine if the inventor has created an estoppel during prosecution. When claims have been rejected by the examiner, and the inventor places new limitations on his claims to

traverse the rejection he may not regain that ground via the doctrine of equivalents; however this is examined during the infringement analysis, and it is not the subject of the Markman proceeding.

FN4. Although the parties entered portions of the prosecution history, the Court directed the submission of the entire history for context and completeness.

FN5. A word on Defendants' Proposed Markman Statement. Defendants' statement is fraught with irrelevant concerns, such as references to the alleged infringing device. Indeed, the infringing device is *never* a consideration in claims construction. Also, defendants frequently mixes intrinsic and extrinsic references (perhaps placing them in the guise of intrinsic evidence); followed by sections labeled "Extrinsic Evidence Support." In the worst example, a single sentence of actual intrinsic evidence is followed by numerous extrinsic references. This makes it particularly difficult to identify an argument based purely on intrinsic evidence, and is a practice that should be avoided.

### **Limitations of Step and Mean-plus-function Claims**

[11] The expression of claims is not restricted to the description of defined structures (e.g. "[a] first leg bone having a distal end and a proximal end; and an ankle bone is connected to the distal end of the first leg bone...") 35 U.S.C. 112, para. 6 allows the expression of the invention as a so-called means-plus-function claims. When this format is used, the claims are restricted to the required structures that have been disclosed in the specification and equivalents. *Symbol Technologies, Inc. v. Opticon, Inc.*, 935 F.2d 1569, 1575 (Fed.Cir.1991). However, only the minimum, critical structures may be so imported into the claim. It does not narrow the claim to only those structures defined in the specification. Note especially that in *WMS Gaming Inc. v. Int'l Game Technology*, 184 F.3d 1339 (Fed.Cir.1999), the computer programmed to carry out an algorithm received special treatment. When the recited structure in the specification is a general purpose computer, the protected structure is the "special purpose computer" created by the program running on the general purpose computer. Identifying such structural limitation(s) is the last step in claim construction.

With this in mind, the Court addresses the disputed claim terms.

### **"Individual" and "Individuals"**

The membership of "individuals" is perhaps the most contested issue of the asserted claims. Individual(s) appears both in the preamble and the body of the claim. The effect of such usage deserves comment.

### **Usage in the Preamble**

Defendants seek to define "individuals" as it is used in the preamble, and allow that definition to filter to the rest of the claim. This may be crucial to Defendants' position since the operational use of "individual" and "individuals" in the body of the claims is possessive and relates back to the "offer(s)", thus it appears to be less important who enters the offer(s) than who the offeror and the offeree might be.

[12] Generally, the text of the preamble of a claim is not a limitation on the claims. *DeGeorge v. Bernier*, 768 F.2d 1318, 226 U.S.P.Q. (BNA) 758 (Fed.Cir.1985). Further, if the effect of the preamble is "at best ambiguous ... a compelling reason must exist before the language can be given weight." *Arshal v. United States*, 223 Ct.Cl. 179, 621 F.2d 421, 430-31, 208 U.S.P.Q. (BNA) 397, 406-07 (Ct.Cl.1980).

[13] In a Jepson claim, the preamble generally recites prior art elements and has been determined to be a

substantive limitation of the claim. Here, the preamble text is: "A method for trading securities between individuals, comprising [ ]." The focus of the inquiry is whether or not "for trading securities between individuals" is merely a statement of intended purpose and thus merely informative and not an actual limitation. Clearly, the claim steps that follow the preamble describe just what the preamble says. Security is introduced in the first step as is the concept of the trading and the individual. A fair reading of the entire claim without that phrase gives a firm idea of the nature of the invention. It certainly can not be said that the preamble text is necessary to breathe life into the claim. Thus, the Court concludes that the preamble text is a statement of intended use.

This does not end the inquiry as it does not resolve the issue of whether certain persons might be excluded from the term individual as used in the body of the claim.

[14] In this case, the specification describes the invention as relating "specifically to systems which allow individuals to trade securities directly with other individuals who are not brokers, specialist [sic] or market makers." (c. 1, ll.11-13) What it does not say is: "systems which allow individuals, who are not brokers; specialists; or market makers, to trade securities directly with other individuals, who also are not brokers; specialists; or market makers." FN6 The description of the prior art describes the system whereby brokers profited from executing customer transactions by pocketing the "spread." The import of the invention is to strip away this veil of secrecy, and allow the Joe Q. Individual to obtain the optimum buy/sell price by being able to view and select the best offer in the available market. Thus, when Minton describes the need for "a data processing system and a network of data processing systems whereby individuals can buy and sell directly from each other, with only minimum involvement from a broker" (c. 2, ll.47-49) there appears to a paradox in how to define individuals.

FN6. Henceforth, "brokers, specialists, and market makers" will be identified solely by "brokers."

On the one hand, there appears to be two identifiable groups of individuals: one of which clearly excludes brokers and one which is silent. On the other hand, a single group of individuals which excludes brokers. However, there is a third possibility: "individuals" includes everyone who is a buyer or seller, and that brokers may be excluded based on other limitations.

### **The First Office Action**

In his initial rejection of claims, the examiner first cited Adams, U.S. Patent No. 3,573,747 ('747 patent) as prior art, noting that he equated the usage of individuals in the '643 application with "subscribers or buyer [sic] and sellers" in the '747 patent.FN7 Defendants attack a broad interpretation of individuals by claiming that the examiner excluded brokers by this statement; however that position ignores the context of the examiner's usage, and here the context is crucial. This was not an isolated assertion but a reference for establishing how the '747 patent anticipated several claims in the '643 application. Referencing the specification of the '747 patent, the Court observes no specific reference to brokers.FN8 It explicitly does include "institutional investors", which the Court interprets to include retirement plans, insurance funds, and mutual funds; some of these may be broker managed funds. The closest the '747 patent comes to broker is "intermediary," which is placed in the context of removing the intermediary between the institutional investor and the trader, however this is overshadowed by the purpose given in the background of the '747 that stated that the "subscribers may be *any* buyers and sellers desiring to trade any of said fungible properties."('747 c. 1, ll. 38-40) (emphasis added.) The strongest support comes from the summary that states:

FN7. After reading the '747 patent, the Court concludes that the examiner made a clerical errors and intended to say "buyers" as that term appears in the '747 specification.

FN8. Remember that matter considered in the prosecution history is intrinsic evidence. The '747 patent was discussed explicitly in the rejection of claims, thus it is more than mere "prior art" such as other references that may have been disclosed in the IDS.

"It is a further object...wherein the trading [of securities] can be effectuated without the necessity of a human negotiator between buyers and sellers." ('747 c. 1, ll. 47-50).

Essentially, Adams sought to eliminate the trading floor in which brokerage houses (which include institutional investors) could engage in a preference system through their floor traders; not exclude the presence of brokers altogether.

[15] Thus, the Court finds that the purpose of the examiner's statement was to inform Minton as to how the '747 was compared to his invention for prior art purposes, and not to place a limitation on any claim. Note also that Minton altered his claims in response to an objection, not a rejection. Thus, prosecution history estoppel does not arise against him with respect to this statement. The Court further notes that the '747 patent allowed the creation of offers without a price value and a quantity value, and thus did not teach the necessity of price and quantity in creating an efficient transaction system.

### **Plain Language Usage in the Claims**

Defendants argue that "individual" excludes all persons who are brokers acting in any capacity. Clearly, this is incorrect as can be demonstrated here. Assume that three persons, Merrill; Lynch; and Pierce, all happen to be sitting comfortably at their home computers, and Merrill offers to buy a stock that Lynch and Pierce are both offering for sale through E-trade. The fact that they are also brokers (i.e. members of NASDAQ or NYSE) would not mean that they were not trading as individuals for their own sake. Thus, the definition for "Individuals" offered in one proposed order of construction is far too broad, resulting in far too narrow a claim.

Further, Defendants have a fundamental and clear misconception regarding the function of "an individual" in the context of the claims. In one proposed order, the first clause:

"Entering the offer of a first individual to trade a security on a first data processing system" is to be interpreted as a limitation:

"...this step requires that a first individual perform the step of entering the first individual's offer to trade in a first computer." (Def. order at 2).

Yet, nowhere in that clause is there any limitation as to who or what might enter the offer into a first computer.FN9 Nor is any such limitation created by any other clause in the asserted claim. Rather, than repeat the above example for each clause, it should be apparent that the explicit language of the claims places no restriction or limitation on the identity of the traders.

FN9. A clause supporting Defendants' position would be: "Entering the offer to trade a security of a first individual by the first individual on a first data processing system" or even, "a first individual entering the offer of the first individual to trade a security on a first data processing system."

### **Item # 2: Ranking All Offers**

[16] [17] Defendants argue that all offers to buy or sell a given security must be ranked. None of the asserted claims uses the word "all" as a limitation. Rather, the only numeric limitation that may be read from the claims is "three or more." The claim language explicitly describes "entering an offer of a first individual..." In claim parlance, this unequivocally refers to a single offer. Additionally claim 1 describes "transmitting...additional offers to trade in the security formed by additional individuals" and then "ranking the offer of the first individual and the additional offers..." When the plural form of a noun is used in a claim, the proper interpretation is "two or more." Combining the two elements then results in an interpretation of three or more "three or more," not all.

Thus, it is only necessary that a minimum two offers be transmitted in the transmitting step and that three or more offers to trade in a security be ranked by the ranking step and then displayed by the displaying step. It is not necessary that all offers be transmitted, ranked, or displayed.

### **Item # 3: Ranking by Quantity and Value**

Plaintiff asserts that any ranking scheme in which sorting by quantity precedes sorting value is within the claims. Defendant argues that sorting must occur first by price value before any other criteria may be used, after which all offers of the same quantity must be sorted by quantity before any remaining criteria may be used. FN10 Both are incorrect to some degree.

FN10. Both parties agree that additional processing after ranking by price and value is not precluded by the claims.

### **The Ordering of Steps**

[18] When claimed subject matter is a process or method, it may be expressed a number of steps. It is well established that the steps may be performed in any order unless restrictions are at least an implicit requirement of the claims and/or specification. *See* *Loral Fairchild Corp. v. Sony Corp.*, 181 F.3d 1313, 1322 (Fed.Cir.1999). An example of such a claim might be:

A process comprising:

the first step of heating a solid until it becomes a liquid; and the second step of pouring the liquid into a mold.

In the above situation, decisions of the Federal Circuit indicate that other steps can occur between the first step and the second step, unless additional limitations are placed on the claim, such as:

the second step of pouring the unadulterated liquid into a mold immediately after the solid to liquid transition is complete.

Alternatively, the specification might be drawn towards a process such as the "lost wax" method of jewelry making. Although not explicitly stated, it would be obvious to a jeweler that the metal to be used would require the heating step before the pouring step.

The specification clearly contemplates some level of processing on the universe of offers that exists before arriving at the step of ranking. Referring to claim one, it would also be apparent to a person skilled in the art that at least some portion of these steps can be performed in multiple orders. As new orders to buy and sell a particular security may originate constantly over time, the transmitting of additional offers step will in all likelihood occur before the entering of the first offer. However, the entering a reply step must occur after the

entering an offer step because "wherein the reply is in response to the offer" appears as a limitation in the reply step.

### **Pre-processing, Intervening Sorts, and Post-processing**

Sorting is a fundamental operation performed by computers. Frequently, it is one of the first programming assignments given to new students of the information sciences. Numerous sorting algorithms were developed in the early days of the information age, and these methods continue to be used today. There are single pass and multiple pass algorithms. There are sort-in-place algorithms that require more processor time but less memory, and there are "memory hog" applications that use hashing functions to increase the speed of the sort by guessing the probable final location of a data item on the first pass. Additionally, the most efficient methods of sorting do not actually move the data items; they only arrange pointers to the physical data.

The '643 patent places no limitation on what kind of algorithm is used. The ranking step of claim 1 includes the limitation of ranking the offers "according first to a price value, then secondly, according to a quantity value." FN11 At first blush, this would seem to limit processing that may occur between ranking by quantity and price. Defendants argue for an interpretation that once the specific step begins, such as the ranking step, it must be completed before another step begins.

FN11. "Secondly" places an explicit restriction on the ordering. According to the Oxford English Dictionary Online: secondly (adv.) "2. In the second place; as the second in serial order. [ ] 3. In the second place in order of importance, secondarily." This definition does not conflict with the specification.

However, *Compuserve* does not support this as a principle of claim construction. *Compuserve* at 875-7. In analyzing the process claim of the Freeny patent, the panel noted that the critical steps taught by the specification were embodied in the claims, not just out of order, but also were also broken across clauses of the steps, such that part of one step was performed, another step was performed, and then another part of the first step was performed. FN12 *Compuserve* noted specifically that an ordering which did not read on the preferred embodiment would be nigh unto impossible, and require strong evidentiary support for a contrary interpretation. Applying this principle would allow the offers by the additional individuals to be ranked by the first criteria, then the offer of the first individual could be entered in the entering step, well before the list is ranked by the second criteria.

FN12. "In the preferred embodiment, the following sequence of events occurs (the parenthetical notations referring to the sequence of steps recited in exemplary claim 1):(1) the user provides a request reproduction code to the IMM (step two) and the IMM receives it (step four); (2) the IMM sends the request reproduction code to the ICM (not claimed); (3) the ICM provides an authorization code to the IMM (step three) and the IMM receives it (step four); and (4) the IMM copies the information onto a material object (step four). As indicated in the parenthetical remarks, the steps of claim 1 are not performed in order by the preferred embodiment. They are not even performed serially in their entirety because part of step four is performed before step three, and part is performed after step three. Thus, if the claim was construed to require that the steps be performed in order, the claim would not read on the preferred embodiment."

In fact, this is quite likely because the steps of entering and ranking are occurring on different data processing systems (i.e. the first data processing system and the second data processing system). In this respect, the position that no processing between the ranking by the quantity and price criteria is unsupportable; however, that does not mean that all kinds of processing between the two ranking operations is permissible.

Assume that there is a list of 10 items. Each item contains three data elements and a unique identifier as in Figure # 1 (see attachment). The first column contains the unique identifier. The remaining columns contain quantity, price and time values respectively. If this list were sorted in an ascending order by price, then quantity only. Then, a possible resulting order of unique identifiers might be 4, 5, 8, 7, 1, 9, 10, 2, 3, 6 ("Result A"). There is a possible variation because the third criteria is not fixed, and more variations are possible if list items possess identical price and quantity values. If the list was additionally sorted using the time value, then the resulting order would be 5, 4, 7, 8, 1, 10, 9, 2, 3, 6. Either of these results are encompassed by the claims. ("Result B")

However, sorting the list by price, time, and then quantity yields 5, 7, 4, 8, 1, 10, 9, 6, 2, 3 ("Result C") as shown in Figure # 2 (see attachment). Examining the first four entries, it is obvious that all of the items priced at \$1 are not shown in either an ascending or descending order, although sorting did occur first by price, and later by quantity. Herein lies the distinction argued by the parties. If "first" and "secondly" are used in an absolute sense, then Result A & B are covered by the claim, whereas Result C is excluded. If used in a relative sense, then Result C is also covered by the claim.

However, the C result makes little sense in light of the written description as a whole as the quantity values, although technically sorted in the order given by the claim, would be out of order in the accepted generally meaning of sorted-by-key to the POOSA.

Finally, pre-processing and post-processing of information stored in list form is another standard practice for those skilled in the art. Defendants argue that no pre-processing on the list of offers is supported by the specification. To the contrary, the specification does describe some forms of pre-sort processing before the critical ranking step begins. When a trader selects the market to trade in, the universe of offers is filtered to exclude offers outside that market. So called "all-or-nothing" transactions which exceeded his offer to buy would not be responsive to the offer, and thus might be excluded. Neither side disputes post-processing.

After a long hard look at all of the possibilities, the Court concludes that various operations may occur before the step of ranking by price value begins, particularly filtering. Ultimately, there is a set of offers that will be displayed. All of the displayed offers must be ranked absolutely: first by price, then by quantity.FN13 Other sorting criteria may be applied afterwards. There is no limitation on any sort by ascending or descending value. Irrespective of the internal sorting methodology or algorithm that is used, when the final set of offers to trade (composed of at least three offers) is displayed, the viewer of the display will perceive the entire list of offers to be sorted with price as the primary key and quantity as the secondary key, while other sorting keys may be applied as tertiary key(s).

FN13. Not to be confused with all of the offers that are known to the network or universe.

### **Structural Identification of Claim 3 FN14**

FN14. There was no specific mention of an structural dispute at the Markman hearing nor did the Court observe any reference to it in the briefing of the parties, save one of the earlier proposed construction orders submitted by the Defendants. As such, the Court finds that structural limitations were not at issue. Nevertheless, the Court finds sufficient structural references in the written description that would not render the claim indefinite.

When a patentee elects to claim his invention using "means-plus-function" language, the final step requires identifying the minimal function required by the claim and identifying the corresponding structure in the

specification; however, care must be taken to avoid importing any surplus structure as a limitation to the claim. See *Acromed Corporation v. Sofamor Danek Group, Inc.*, 253 F.3d 1371, 1382-83 (Fed.Cir.2001).FN15

FN15. Additionally, CompuServe observed that functional boundaries of computer system components were malleable absent explicit language to the contrary. The Court also observes that client-server technology and many networking technologies are well known in the art and thus detailed description of these structures is unnecessary as the POOSA will be able to practice the invention without such references. In fact, the term "server", standing alone, is sufficient to conjure the image of a family of computer systems capable of performing high-speed or complex tasks.

Broken down by element,

entering means for entering the offer of a first individual...	In the strictest sense, the only structure required for entering the offer is the data entry device, which might be a keyboard, keypad, or even a mouse plus a visual display; however the practical nature of enter an offer requires the minimal special purpose computer of patent Figure 1 affixed with at least one structure of man-machine interaction such as keyboard 24, mouse 32, or microphone 44 (voice recognition software could be used for data entry).
transmitting means for transmitting the offer...	The transmitting means refers to patent Figure 1, modem 34 or network adapter 38.
entering means for entering the reply...	As in the first 'entering means.'
executing means for executing a trade of the security...	The function "executing" is essentially the smallest part of the invention, in that it requires only a status change in a one or possibly two memory location(s). It is that switching of state where offer and acceptance come together to form a contract. The structure for this function necessarily includes the computer system that contains the memory location that experiences the change of state that 'seals the deal' so to speak one of the representative computer systems in the 'server farm' [FN16] described as server 316 (c. 7, ll. 46-53; also c. 8, ll. 8-21.)
transmitting means for transmitting the offer to a server...	As in the first transmitting means.
obtaining means means for obtaining the approval of the offer...	The structure required for 'obtaining' is similar to 'executing'. The broker can be working directly on the representative server system in the server 316 or on a Figure 1 client system. In the case of pre-approval as described in c. 8, ll. 15-21, the obtaining structure is server 316.
transmitting means for transmitting to the second data processing system...	As in the first transmitting means.
ranking means for ranking the offer...	The 'ranking' structure is the may be processor 22 or one of the representative computer systems in server 316.
displaying means for displaying the offer...	The structure for 'displaying' is display screen 30 and processor 22.

FN16. In commonly-used, modern computer terminology.

	Element	#Quantity	Price	Time	
	1	100	\$2	4:01	
	2	100	\$3	4:02	
	3	100	\$3	4:03	
	4	200	\$1	4:02	
	5	200	\$1	4:01	
	6	200	\$3	4:01	
	7	300	\$1	4:01	
	8	300	\$1	4:02	
	9	300	\$2	4:02	
	10	300	\$2	4:01	

Figure # 1-An unsorted list

	5	200	\$1	4:01	
	7	300	\$1	4:01	
	4	200	\$1	4:02	
	8	300	\$1	4:02	
	1	100	\$2	4:01	
	10	300	\$2	4:01	
	9	300	\$2	4:02	
	6	200	\$3	4:01	
	2	100	\$3	4:02	
	3	100	\$3	4:03	

Figure # 2

An improper sort using Price, Time, and Quantity as key values in that order.

E.D.Tex.,2001.

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