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**Datasheet for the decision  
of 4 February 2009**

**Case Number:** T 1096/06 - 3.5.01

**Application Number:** 01129858.5

**Publication Number:** 1321870

**IPC:** G06F 17/60

**Language of the proceedings:** EN

**Title of invention:**  
Integrated order pre-matching system

**Applicant:**  
DEUTSCHE BÖRSE AG

**Opponent:**  
-

**Headword:**  
Order pre-matching system/DEUTSCHE BÖRSE

**Relevant legal provisions:**  
-

**Relevant legal provisions (EPC 1973):**  
EPC Art. 56

**Keyword:**  
"Inventive step (no)"

**Decisions cited:**  
-

**Catchword:**  
-



Case Number: T 1096/06 - 3.5.01

**D E C I S I O N**  
of the Technical Board of Appeal 3.5.01  
of 4 February 2009

**Appellant:** DEUTSCHE BÖRSE AG  
60485 Frankfurt am Main (DE)

**Representative:** Grünecker, Kinkeldey,  
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Leopoldstrasse 4  
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**Decision under appeal:** Decision of the Examining Division of the  
European Patent Office posted 23 November 2005  
refusing European application No. 01129858.5  
pursuant to Article 97(1) EPC 1973.

**Composition of the Board:**

**Chairman:** S. Steinbrener  
**Members:** S. Wibergh  
P. Schmitz

## Summary of Facts and Submissions

- I. This appeal is against the decision of the examining division to refuse European patent application No. 01129858.5.
- II. According to the decision appealed, the invention as defined in the then main request and sole auxiliary request did not involve an inventive step. The auxiliary request was initially the fifth in a set of six auxiliary requests, the others having been withdrawn at the oral proceedings before the examining division.
- III. With the statement setting out the grounds of appeal dated 3 April 2006, the appellant requested that the decision be set aside and a patent be granted based on claims 1-27 according to the main request, or claims 1-27 according to auxiliary request 1, or claims 1-27 according to auxiliary request 2, or claims 1-26 according to auxiliary request 3, or claims 1-25 according to auxiliary request 4, or claims 1-23 according to auxiliary request 5, all filed together with the grounds of appeal.
- IV. Claim 1 of the main request reads:
- "Computer system operated in a security trading system (200) providing a reference market, the computer system being arranged for processing orders and comprising:  
means for receiving a message indicating a quote, the quote including quote parameters implicitly defining a buy limit order and a sell limit order;  
a quote storage (250) for storing the quote parameters;

means for receiving an order; and  
a pre-match control unit (255) for determining whether the order matches the quote; the pre-match control unit being arranged for executing the order against the quote if the order matches the quote, or automatically forwarding the order to the reference market for execution if the order does not match the quote".

V. Claim 1 of auxiliary request 1 reads:

"Computer system operated in a security trading system (200) comprising an order book unit (260) providing a reference market, the computer system being arranged for processing orders and comprising:  
means for receiving a message indicating a quote, the quote including quote parameters implicitly defining a buy limit order and a sell limit order;  
a quote storage (250) for storing the quote parameters;  
means for receiving an order; and  
a pre-match control unit (255) for determining whether the order matches the quote; the pre-match control unit being arranged for executing the order against the quote outside the order book unit if the order matches the quote, or automatically forwarding the order to the reference market for execution by the order book unit if the order does not match the quote".

VI. Claim 2 of auxiliary request 2 reads:

"Method for processing orders in a security trading system (200), the method comprising the steps of:  
operating an order book software component (260) providing a reference market; and

operating a pre-match software component (255) combined with said order book software component in one trading software, said step of operating the pre-match software component comprising:

receiving (310) a quote, the quote including quote parameters implicitly defining a buy limit order and a sell limit order, from a quote storage of the security trading system;

receiving (320) an order at the pre-match software component providing the only interface for entering the order into the pre-match software component and for entering the order into the order book software component;

determining (330, 540, 610-640) whether the order matches the quote;

if so, executing (330, 560, 670) the order against the quote; and

otherwise, automatically generating (330) order data and forwarding (580, 680) the data to the reference market for executing the order by the order book software component".

VII. Claim 1 of auxiliary request 3 reads:

"Computer system operated in a security trading system (200) providing a reference market, the computer system being arranged for processing orders and comprising:  
means for receiving a message indicating a quote, the quote including quote parameters implicitly defining a buy limit order and a sell limit order;  
a quote storage (250) for storing the quote parameters;  
means for receiving an order; and  
a pre-match control unit (255) for determining whether the order matches the quote;

the pre-match control unit being arranged for executing the order against the quote if the order matches the quote, or automatically forwarding the order to the reference market for execution if the order does not match the quote and

the pre-match control unit being further arranged for automatically forwarding the order to the reference market for execution if the order placing participant is indicated in a permission storage (245) of the computer system to be not entitled to have orders executed against the quote, the order type of the received order does not match a predetermined order type registered in a type storage fo /sic/ the computer system as being generally executable against the quote, and/or a time period in which the quote is valid has expired".

VIII. Claim 1 of auxiliary request 4 reads:

"Computer system operated in a security trading system (200) providing a reference market, the computer system being arranged for processing orders and comprising: means for receiving a message indicating a quote, the quote including quote parameters implicitly defining a buy limit order and a sell limit order; a quote storage (250) for storing the quote parameters; means for receiving an order; and a pre-match control unit (255) for determining whether the order matches the quote; the pre-match control unit being arranged for executing the order against the quote if the order matches the quote, or automatically forwarding the order to the reference market for execution if the order does not match the quote,

wherein the security trading system includes an order book (260),  
wherein the quote includes a bid leg and an ask leg, each specifying the quote parameters,  
wherein one of the quote parameters is a relative limit value and another one of the quote parameters is a boundary value, the relative limit value being a limit value referring to the actual situation in the order book, the relative limit value being positive for the bid leg and negative for the ask leg, the boundary value indicating an upper boundary for the bid leg and a lower boundary for the ask leg, and  
wherein said pre-match control unit is adapted for determining an execution price depending on the relative limit value, determining the execution price that would be applicable when executing the order against the quote, determining whether the determined execution price exceeds the upper boundary for the bid leg or falls below the lower boundary for the ask leg, and if so, returning a determination result value indicating that the order does not match the quote, to indicate that the order is to be automatically forwarded to the reference market for execution".

IX. Claim 1 of auxiliary request 5 reads:

"Computer system operated in a security trading system (200) providing a reference market, the computer system being arranged for processing orders and comprising:  
means for receiving a message indicating a quote, the quote including quote parameters implicitly defining a buy limit order and a sell limit order;  
a quote storage (250) for storing the quote parameters;  
means for receiving an order; and

a pre-match control unit (255) for determining whether the order matches the quote;  
the pre-match control unit being arranged for executing the order against the quote if the order matches the quote, or automatically forwarding the order to the reference market for execution if the order does not match the quote,  
wherein said security trading system includes an order book (260);  
wherein the quote includes a bid leg and an ask leg, each specifying the quote parameters;  
wherein one of the quote parameters is a maximum size value indicating the quote size for the order when executing the order against the quote;  
wherein the received order includes an execution identifier (ID) identifying a market participant (230) registered to the computer system as quote specifying entity; and  
wherein the step of determining whether the order matches the quote comprises the steps of:  
determining (610) the trading phase of the security trading system at the time the order is received; and  
if the determined trading phase indicates a running auction (810) within a continuous trading phase (800), a volatility interruption, or a market order interruption of an auction, returning a determination result value indicating that the order does not match the quote, to indicate that the order is to be automatically forwarded to the reference market for execution; otherwise:  
determining (620) the market participant (230) identified by the execution identifier of the received order;



determining (620) the market participant (205-225) that has placed the order; and  
determining (620) whether the order placing participant is entitled to have orders executed against the quote;  
and  
if the order placing participant is not entitled, returning a determination result value indicating that the order does not match the quote; otherwise:  
determining (630) the order type of the order; and  
comparing (630) the determined order type with predetermined order types registered for being executable against the quote; and  
if the determined order type does not match one of the predetermined order types, returning a determination result value indicating that the order does not match the quote, to indicate that the order is to be automatically forwarded to the reference market for execution; otherwise:  
if the order is a buy order, comparing the size of the order with the quote size for the ask leg;  
if the order is a sell order, comparing the size of the order with the quote size for the bid leg; and  
determining (640) whether the size of the order exceeds the respective maximum size value; and  
if so, returning a determination result value indicating that the order does not match the quote, to indicate that the order is to be automatically forwarded to the order book for execution".

- X. In a communication accompanying the summons to oral proceedings arranged at the appellant's auxiliary request, the Board stated in respect of the main request that it tended to agree with the reasoning in the decision under appeal. The Board would decide at

the oral proceedings whether or not to give consent to auxiliary requests 1, 2 and 5, which concerned features some of which had been included in requests withdrawn at the oral proceedings before the examining division. In any case these requests did not seem more promising with respect to patentability than the other requests.

XI. By letter dated 30 December 2008, the appellant withdrew its request for oral proceedings and requested that a decision according to the state of the file be issued.

XII. Oral proceedings, which the appellant did not attend, were held on 4 February 2009. The Board verified that the appellant had requested that the decision under appeal be set aside and a patent be granted on the basis of the claims according to the main request or one of the auxiliary requests 1 to 5, all filed with the statement setting out the grounds of appeal dated 3 April 2006.

XIII. At the end of the oral proceedings the Board announced its decision.

## **Reasons for the Decision**

### **1. The invention**

The present invention relates to a method and system for processing orders in a security trading system. As explained in the description (paragraphs [0001] to [0023]), electronic trading systems have become important places where securities are bought and sold.

Electronic order processing made it possible for orders to be entered in the system and automatically matched. Orders placed by investors in a given stock formed an order book. In some markets intermediaries (brokers) did not necessarily forward their investors' orders to the market place but withheld them in order to execute them themselves. This was called internalization of order flow. Internalization took place for various reasons, the simplest being that the broker wants to save the market places' execution or transaction fees.

The conventional trading systems were disadvantageous for a number of reasons. In particular, the exchange trading software (the order book) and the presently existing internalization platforms formed a disjunctive system, meaning that investors or brokers had actively to choose the execution venue. Once the order had been placed at the internalization platform it had to be actively pulled back from the platform and sent to the order book if internalization was not possible. In this process, different interfaces applied.

One object of the invention was to provide a method of operating a computer system for processing orders in a security trading system that provided an internalization functionality without the need to re-submit an order that could not be internalized to the order book.

*The main request*

2. The Board agrees with the examining division that the invention, a computer system, is not excluded from patentability under Article 52(2) EPC. The reason for

the refusal being lack of an inventive step, the Board will proceed with this issue, starting out from the conventional trading systems mentioned in the description.

3. Inventive step

3.1 The appellant argues that the invention solves a number of technical problems by "integrating the reference market and pre-match control functionalities into a single security trading software but nonetheless providing them as two separate components of the embracing trading software" (statement setting out the grounds of appeal, p.4). The description mentions that brokers internalize orders in particular to save transaction fees. If for this reason the market place desired to take over the internalization functions, which the Board regards as a non-technical aim, it would naturally have to provide the necessary software. The old and the new software must be connected in some way but would constitute more or less independent functional modules. These steps appear obvious, even inevitable, in view of the non-technical aim.

3.2 In claim 1, the integration is expressed mainly by the features that the system is "providing a reference market" besides performing pre-matching, and that an order is automatically forwarded to the reference market if it does not match the quote (ie the parameters defining buy or sell limit orders). This could be regarded as a straightforward automation of the prior art where an order is "actively pulled back" (paragraph [0012]) from the internal platform and sent on (in some way) to the market place.

Thus, the additional features represent modifications of the prior system that were obvious in view of the non-technical aim. It follows that the subject-matter of claim 1 does not involve an inventive step (Article 56 EPC 1973).

*Auxiliary request 1*

4. Compared with the main request, the computer system according to auxiliary request 1 includes an "order book unit providing a reference market". According to the description (paragraphs [0004] and [0005]), order book trading is one of the two concepts that presently form the basis of securities trading, the order book being formed by orders placed by investors in a given stock "according to well defined principles". The feature is thus a (known) commercial concept, the addition of which cannot render the claimed subject-matter inventive (Article 56 EPC 1973).

*Auxiliary request 2*

5. Claim 24 is an independent claim directed to a computer system arranged for performing the method of claims 2-22. Independent method claim 2 specifies in particular that the pre-match software component is combined with the order book software component in one trading software, and that there is only one interface for entering an order into the pre-match software component and into the order book software component. These features should be seen in the light of the overall aim of integrating exchange trading and internalization into a single system, held by the Board to be of a

commercial nature. Even if the single interface might have technical character, it cannot be inventive (but rather a first choice) to provide a single interface for entering orders into a single integrated system. Thus, the computer system according to auxiliary request 2 also lacks an inventive step (Article 56 EPC 1973).

*Auxiliary request 3*

6. This request corresponds to the main request before the examining division. The appellant states that the subject-matter of claim 1 overcomes the technical obstacle of undesirable network load caused by order routing between individual system components (grounds of appeal, p.8). The Board assumes that this argument refers to the pre-match control unit, which may execute orders itself without sending them on to the reference market. It is however self-evident that a unit need not send on tasks to another unit that it can perform itself. The alleged advantage is in fact more the inevitable technical consequence of the non-technical concept than a true technical effect. Similarly, the conditions for forwarding an order to the reference market are entirely business-driven and may be implemented in a straightforward way. Thus, the subject-matter of claim 1 does not involve an inventive step (Article 56 EPC 1973).

*Auxiliary request 4*

7. This request corresponds to the auxiliary request before the examining division. Compared with claim 1 of auxiliary request 1, the additional features mainly

define the execution price and the rules for deciding whether it is within the predetermined limits for a pre-match. The limits are "relative" since they refer to the situation in the order book.

The Board notes that pricing generally belongs to the field of economics. The appellant argues that the invention solves the "technical problem of system overload due to continuous adaptations when quoting in absolute prices combined with boundaries which are in turn defined as absolute prices", the trading model itself not requiring relative quotation (grounds of appeal, p.8). The examining division was nevertheless of the opinion that relative pricing was part of the trading rules (decision under appeal, point 6.3), and this is also the Board's view. If the price should always be a predetermined amount lower or higher than the current best bid or ask (a commercial constraint), relative pricing must be used whether or not the market is computerized. Thus, this subject-matter does not involve an inventive step (Article 56 EPC 1973).

*Auxiliary request 5*

8. The additional features in claim 1 include:
- a maximum size value indicating the quote size for an order,
  - an execution identifier (ID) included in the order serving to identifying a market participant,
  - the determination of the trading phase of the security trading system at the time the order is received, and
  - the determination of the order type.

On the basis of these data the system determines whether or not to forward the order to the reference market for execution.

The Board cannot see that these features are associated with a technical effect (besides the trivial one of transmitting data electronically). They are rather of a commercial nature since they serve to determine where to execute an order. Thus, similar to the features of the previous request, they are trading rules that may be straightforwardly implemented. It follows that also this subject-matter does not involve an inventive step (Article 56 EPC 1973).

## **Order**

**For these reasons it is decided that:**

The appeal is dismissed.

The Registrar:

The Chairman:

T. Buschek

S. Steinbrener