

NOTIFICATION OF THE STOCK EXCHANGE OF THAILAND
Re : Trading of Securities through the Exchange's Trading System, 2005

By virtue of Clause 4, 8, 16, 17 and Clause 37 of the Regulations of the Stock Exchange of Thailand Re: Trading, Clearing and Settlement of Securities in the Exchange (No. 2), 1999 dated August 31, 1999, the Stock Exchange of Thailand hereby issues the following regulations:

1. This Notification shall come into force on November 1, 2005.

Effectiveness

2. The following shall be repealed:

(1) The Regulations of the Stock Exchange of Thailand Re: Trading of Securities through the Exchange's Trading System (No. 1), 1998 dated May 20, 1998;

(2) The Regulations of the Stock Exchange of Thailand Re: Trading of Securities through the Exchange's Trading System (No. 2), 2003 dated November 13, 2003.

Definition

3. In this Notification:

“system developer” means a developer of computer systems or computer programs.

Chapter 1
General Provision

4. In case of doubt or problem concerning trading through the trading system, the President shall be empowered to make decisions and issue orders.

empowered to make decisions in case of doubt or problem concern

5. The member may file an application to the Exchange to issue a deal confirmation and the Exchange may authorize its officer to issue the deal confirmation.

issue a deal confirmation

Chapter 2
Member's Computer System linked up With the Trading System
Part 1
Installation of Member's Computer System

6. The member shall procure a computer system (broker front office) which shall consist of computer equipment and computer programs for trading and shall be link up with the trading system. The functions of such computer system must meet the standards prescribed by the Exchange in the Appendix attached hereto.

Procurement of member's computer system according to SET's standards

7. The member shall install its computer equipment to use for trading linked up with the trading system at each of its offices only. The member must obtain permission from the Exchange in case of the member shall install its computer equipment in otherwise.

installation the computer equipment

The member shall inform in writing to the Exchange about the places where the computer equipment is installed as well as the types and number of such computer equipment under the first paragraph within the period prescribed by the Exchange.

8. The member shall install the computer equipment “terminal” used for making a bid or an offer at the place approved by the Exchange.

installation the terminal

9. Except in the case of using the computer program prescribed by the Exchange, the member may use the computer program in the member's computer system linked up with the trading system after the member has submitted documents or media showing details of the computer program to the Exchange and the member must obtain permission from the Exchange to using the such computer program .

**Using the
computer
program**

The member must provide a certification that its computer system is operating in a manner which is not in violation of and is in accordance with the regulations of the Exchange governing trading, does not cause damage to the trading system, and has the functions that meet the standards as prescribed by the Exchange according to Clause 6.

In case that the member's computer system or computer programs for trading linked up with the trading system are developed by a system developer, the system developer must possess the qualifications under Clause 10 and the member shall arrange for the system developer or a provider examiner of computer systems or computer programs to examine and certify the functions of the computer system or computer programs under the second paragraph.

The Exchange may require the member to procure or change the examiner who examine and certify the functions of the computer system or computer programs, as it may deem appropriate.

10. The member's system developer shall possess and maintain the qualifications as follows:

**Qualifications of
a system
developer**

(1) having a stable financial status or a paid-up capital not less than Baht 20 million;

(2) having experience in developing and providing services related to computer programs for not less than 2 years before the filing of application, or within a period as the Exchange deems appropriate;

(3) having the executives who are capable and honest, and have business ethics and experience in the business of computer system development;

(4) having the management system for development and service of computer programs that is recognized by the international standards or the standards recognized by the Exchange;

(5) having adequate personnel who are knowledgeable, capable and experienced in the development and the service for computer programs that are related to the trading system.

11. In case where the Exchange finds that the member's system developer cannot maintain the qualifications under Clause 10, or has incorrectly certified the functions of the member's computer system or computer programs for trading linked up with the trading system which may cause damage to the trading system, the Exchange may prohibit the member from using the computer system or computer programs of such system developer or require the member to change its system developer or to do any other act as the Exchange deems appropriate.

**Supervision of
system developer**

12. The member shall not allow any other persons to link his computer equipment with the member's computer system linked up with the trading system so as to allow such person to directly enter bid or offer order into the member's computer system, or to bid or offer directly into the trading system, except in the case under Clause 13 or linking and enter bid or offer order in accordance with the form and conditions prescribed by the Exchange.

Prohibition any other persons to link his computer equipment with the member's computer system

13. The member may allow any non-member securities company to link their computers equipment with the member's computer system linked up with the trading system so that such non-member securities company can enter bid or offer order into the member's computer system directly. The member shall procure a computer system or the member's authorized officer to enter the bid or offer order into the trading system.

Linking of non-member securities company

The computer system used by the member to enter the bid or offer order under the first paragraph must meet the standards prescribed by the Exchange in the Appendix attached hereto.

In entering the bid or offer order into the member's computer system under the first paragraph, the member shall procure that the non-member securities company shall have its authorized officer to do the entry, and the regulations or notifications of the Exchange concerning the authorized officers shall apply *mutatis mutandis*.

The member shall proceed to have the non-member securities company agree to and comply with Clauses 7 through 9, Clauses 25 and Clauses 32 and in any case the member shall be liable to any damage incurred to the trading system caused by the non-member securities company's computer equipment and computer programs or by direct entry of bid or offer order into the member's computer systems.

Part 2

Change or Modification Related to the Member's Computer System

14. In the event that the member wishes to change or alter the computer system as prescribed below, the member must obtain permission from the Exchange and must file the application together with documents or media showing details of the computer program in the form as prescribed by the Exchange and certify that the computer program changed or adjusted is operating in a manner which is not in violation of and is in accordance with the regulations of the Exchange governing trading and does not cause damage to the trading system and has functions that meet the standards as prescribed by the Exchange according to Clause 6;

Major change which obtain permission from the SET

- (1) Change of system developer;
- (2) Change of computer program technology;
- (3) Change of network architecture of the member's computer system linked up with the trading system;
- (4) Change of functional specification of the member's computer system linked up with the trading system;

(5) Change of installation site of the servers used for linking with the trading system;

(6) Other matters as prescribed by the Exchange.

Other than as stated in the first paragraph, in case that the member's computer system or computer programs for trading linked up with the trading system are developed by a system developer, The member must arrange for the system developer or a provider examination service of computer systems or computer programs to examine and certify, that such change or alteration does neither cause the computer system to operate in a manner which is in violation of and is not in accordance with the regulations of the Exchange governing trading nor result in damage to the trading system and has functions that meet the standards as prescribed by the Exchange according to Clause 6;

15 In case where the member makes any change or alter related to its computer system as prescribed below, the member shall report it to the Exchange in the form and within the time prescribed by the Exchange:

Minor change which requires reporting to the SET

(1) Change of network architecture of the member's branch office;

(2) Change of functional specification of part of the member's computer system which is not related to its trading transactions;

(3) Change of location of computer system's server of the member's branch office;

(4) Change or alteration of the security management;

(5) Other matters as prescribed by the Exchange.

16. In case where a non-member securities company under Clause 13 makes any change or alteration related to its computer system according to Clause 14 or Clause 15, the member shall cause such non-member securities company to submit a report on such change or alteration to the Exchange within the time prescribed by the Exchange.

Change or addition by non-member securities company

17. In case where the Exchange makes any change to the trading system, or issues or amends its regulations or any resolutions of the Board of Governors of the Exchange or Circular Letters related to the trading, the member shall test its computer system as required by the Exchange and submit a report on the results of such test to the Exchange every time. A report on the results of final test before the commencement of operation of the computer system must be certified by an authorized person as the member has notified the Exchange.

Participation in test of system upon change of system or regulations of the SET

18. In case where the member assigns the system developer to make any change or alteration to its computer system linked up with the trading system, the member shall have measures to strictly control and oversee the implementation thereof in order to prevent any damage that may be caused to the trading system.

Measures for controlling system developer

Part 3
Criteria for Preparation for Use of the Member's Computer System

19. The member must have the security management and control which meets the standards prescribed by the Exchange in the Appendix attached hereto as follows:

**security
management**

(1) Having security system in the installation site of the member's computer equipment for trading linked up with the trading system and the terminal of authorized officer (Physical Security);

(2) Having network security measure to prevent unauthorized person from entering into the system and being able to acquire or change data from the trading (Network Security);

(3) Having authentication measure to confirm that the customer is using the system by himself as well as availability of customer privacy protection (User Authentication and Privacy); and

(4) Having the information security standard;

20. The member must provide a certification every two years that its computer system is operating in a manner which is not in violation of and is in accordance with the regulations of the Exchange governing trading, does not cause damage to the trading system, and has the functions that meet the standards as prescribed by the Exchange according to Clause 6.

**Criteria for
Preparation of
the Member's
Computer System**

In case that the member's computer system or computer programs for trading linked up with the trading system are developed by a system developer, the member must arrange for the system developer or a provider examination service of computer systems or computer programs to examine and certify the functions of the computer system or computer programs under the first paragraph every two years.

The Exchange may require the member to procure or change the examiner who examine and certify the functions of the computer system or computer programs, as it may deem appropriate.

21. The member must have in place the backup plan and backup system for its computer system linked up with the trading system, which must be capable of immediate implementation for the case where the member's computer system that is linked with the trading system is malfunctioning.

**Member's backup
plan and backup
system Computer
System**

The member must report details of the backup plan and backup system for its computer system under the first paragraph to the Exchange within the time prescribed by the Exchange, and arrange a test of such backup system at least once a year.

22. The member must be prepared for and participate in a test of the backup trading system and the use of the backup computer system which the Exchange provides for the member in case that the member's backup system is malfunctioning. The member shall participate in such test as required by the Exchange.

**Readiness to
participate in
a test of backup
system**

23. The member must have in place a environment test system for testing the functions of its computer system linked up with the trading system as if it were the member's computer system.

Procurement of test environment

24. The member shall have sufficient personnel in charge of overseeing its computer system linked up with the trading system in order to coordinate with the Exchange during and outside the business hours.

Personnel in charge of overseeing member's computer system

25. The member must store data related to the recording of trading orders by the customers according to the standards of the Exchange in the Appendix attached hereto, and to deliver such data to the Exchange in case of its request.

Storing data

Chapter 3 Data from the Trading System

26. The member shall not provide or distribute data received from the trading system to its customers or other persons by any means, except the disclosure of data under Clause 27 or data as permitted by the Exchange under Clause 28 or the disclosure of data to any other persons as permitted by the Exchange.

Prohibition from providing or distributing data from trading system

27. The following data from the trading system shall be disclosed to customers present at the member's office by the member during the business hours:

(1) names of the securities, spread and the lowest and highest prices of all securities capable to be traded during such trading day;

(2) the highest bid, the lowest offer and the latest traded price of all securities at the time;

(3) the highest and lowest price traded as well as the first price traded of all securities during such trading day;

(4) the latest price traded in the preceding business day and, the change of latest trading price of all securities at that moment compared to the latest trading price of such securities in the preceding business day;

(5) volume, price and number of transactions of each security at that moment;

(6) number of securities traded at the highest bid and two price next to such price as well as at the lowest offer price and two prices next to such price of all securities at that moment;

(7) prices forecast by the trading system to be or as the opening prices;

(8) the Exchange's index and the changes of such index compared to the index of the preceding business day;

(9) the letters according to the regulations of the Exchange such as NP, NR, H, SP, XR and XD; and

(10) information which the Exchange informs members through the trading system.

The member may provide the following data from the trading system to each customer present at the member's offices during their business hours:

- (1) bid or offer order's status of such customer; and
- (2) buy or sell price consummated according to bid or offer order of such customer.

28. The member may allow a customer to link its computer equipment with the member's computer system linked up with the trading system so that the customer can retrieve trading data from the trading system but not being able to transmit a trading order outside the member's office, provided that the member must obtain permission from the Exchange and comply with the standards as prescribed by the Exchange in the Appendix attached hereto and must arrange for a certification of the functions of its computer system according to Clause 9.

Permitting customer to retrieve trading data outside member's office

In case where the member makes any change or alteration to its computer system which the customer is allowed to have its computer equipment linked up with according to the first paragraph, the member shall submit a report on such change or alteration to the Exchange within the time prescribed by the Exchange.

29. The Exchange may order the member to suspend the provision or distribution of data derived from the trading system to its customer or other persons. The member shall do so immediately upon being notified by the Exchange.

suspending the provision or distribution of data

Chapter 4 Authorized Officer

30. The authorized officer shall specify his personal code prescribed by the Exchange for use the trading through the trading system.

authorized officer code

31. The member and its authorized officers shall not inform or disclose the personal code to other persons. In case of doubt or any person accesses to the personal code of the authorized officer, such authorized officer shall cancel and change their personal codes to the Exchange immediately.

Prohibition to disclose the authorized officer code

Chapter 5 Supervision

32. In order to supervise the use of the member's computer system to ensure compliance with the standards prescribed by the Exchange according to Clause 6 and to prevent any damage to the trading system, the Exchange may take action as follows:

Supervision

- (1) Inspect the computer equipment and computer programs for trading linked up with trading system;
- (2) Order the member to change or alter the computer equipment and computer programs for trading linked up with trading system ; and
- (3) To prohibited the member for using all or any part of the computer equipment or computer programs for trading linked up with the trading system within the period of time as the Exchange considers appropriate;
- (4) To prohibit the member from increasing number of its customers.

Chapter 6 Transitional Provisions

33. The member whose computer system for trading linked up with the trading system prior to the coming into force of this Notification shall proceed as follows:

Transitional provisions

(1) The member shall provide a certification that its computer system is operating in a manner which is not in violation of and is in accordance with the regulations of the Exchange governing trading, does not cause damage to the trading system, and has the functions that meet the standards as prescribed by the Exchange according to Clause 6 within the time prescribed by the Exchange.

(2) In case that the member has used the computer system or computer programs for trading linked up with the trading system and developed by the system developer before the date of coming into force of this Notification, the member must arrange for the system developer or a provider of a service for inspection of the computer systems or computer programs, to audit and certify the functions of the computer system or computer programs under (1) within the time prescribed by the Exchange.

Notified on this 20th day of October 2005.

(Signed Kittirat Na-Ranong)

(Mr. Kittirat Na-Ranong)
President

Rationale of the Notification: The Exchange deems it appropriate to revise the rules relating to the use of computer system and computer programs for trading linked up with the trading system, the prescription of standards of operation and security precaution of the member's computer system linked up with the trading system, the criteria on the preparation and the use of data from the trading system, as well as the supervision of the use of the member's computer system in order to create confidence in the trading system. Therefore, it is expedient to issue this Notification.

**Computer Standards for Member's Computer System (broker front office)
linked up with the Trading System¹**

The Exchange is aware that member's computer system linked up with the trading system may affect security of the trading system. Therefore, the Exchange has established relevant standards for compliance by the members as follows:

I. Computer Configuration Standards for Member's Computer System (broker front office) linked up with the Trading System

- Composition of member's computer system (broker front office) linked up with the trading System
- Composition of the trading of securities of non-member securities company
- Security Management
 - Physical Security
 - Network Security
 - User Authentication and Privacy
 - Information security standard

II. Order Screening System²

- Order which intervenes the queue of and conceals another person's order Pursuant to the following details;

I. Computer Standards for Member's Computer System (broker front office) linked up With the Trading System

Composition of member's computer system (broker front office) linked up with the trading system

1. Having broker front office which performs the function of linking with the Exchange's trading system.
2. The security systems must be standard systems.
3. There must be a system for screening improper trading orders as prescribed by the Exchange.

Composition of the trading of securities of non-member securities company

¹ By virtue of clause 6 of the Notification of the Stock Exchange of Thailand Re: Trading of Securities through the Exchange's Trading System, 2005.

² The essence material of Order Screening System are following the Standards of the Trading of Securities Through Internet which is notified on March 22, 2005.

1. System or Module of non-member securities company to enter the bid or offer order should be specially allocated and separated from the member's authorized officer to enter the bid or offer order.
2. Non-member securities company must have a separate computer system for linking a member's computer system.
3. The security systems of non-member securities company must be standard systems equally member's security systems.

Sample of System Connection

Figure 1 is samples of the system connection configuration for member's computer system (broker front office) linked up with the trading system, whereas

- Broker Front-Office means a computer system which performs the function of linking with the Exchange's trading system;
- Application Server means member's computer system for providing trading information data, entering the bid or offer order;
- Sub Broker Front-Office means a computer system which performs the function of linking system between member with non-member securities company.

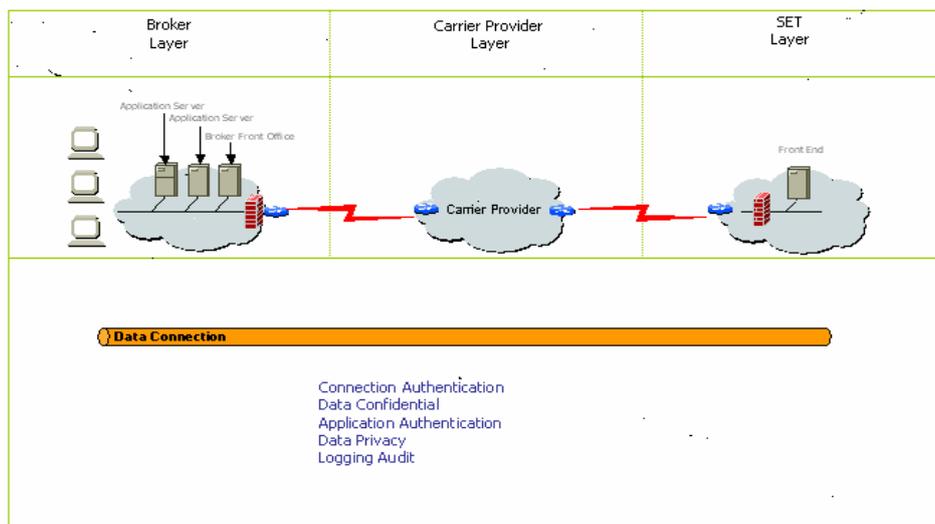


Figure 1: Sample of linking of computer system (broker front office) linked up with the trading system,

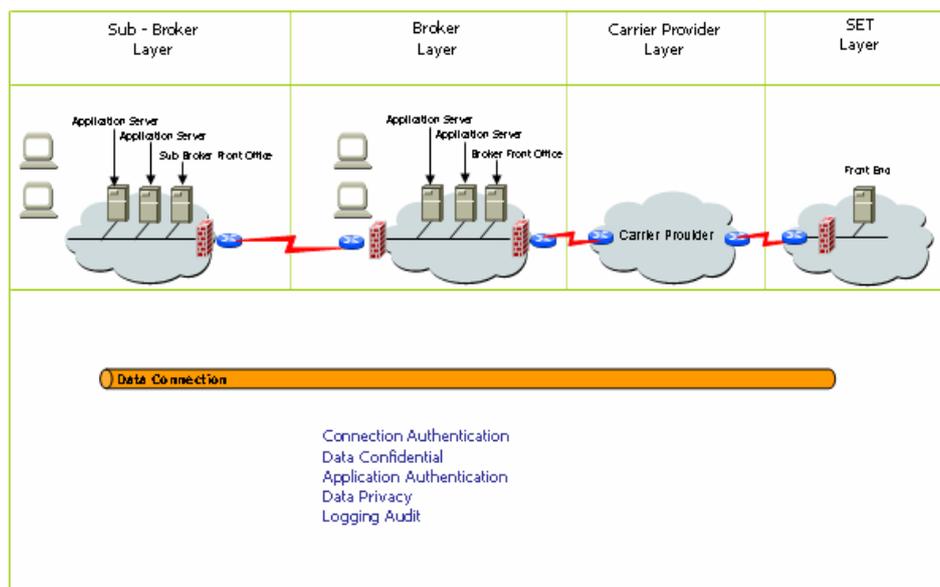


Figure 2: Sample of linking of the trading of securities of non-member securities company

Security Management The management and control of security systems and computer system according to standards to ensure the availability of proper standards of security precaution in the performance of works in general, including any extra measures implemented for security precaution, which shall cover confidentiality integrity and availability such as user administration and security alert etc. The standard systems include:

- **Physical Security** A security system available in the installation site of equipment used in the provision of service.
 - A computer room should be specially allocated and separated.
 - A computer room should be installed with a standard security system; for example, the access to/exit from a computer room shall require the use of access control card and be monitored by an officer throughout 24 hours.
 - All accesses to/exits from a computer room and reasons for the accesses shall be recorded
 - Trader's computer must specially allocated and separated from client service area.
- **Network Security** A system that prevents unauthorized persons from accessing to the network system and causing damage such as the hacking or change of data or disruption of the system, etc. to allow them to have access to or change data from the trading transactions.
 - Record of usages and event logs of various network equipment shall be maintained for at least 1 month for the purpose of examination or resolution of problems, and should be immediately available for examination upon request by the Exchange.
 - The types of services of all kinds of security and network equipment that are linked in the network must be prescribed according to actual usage.

Suggestion

- Basic security precaution tool such as Firewall, etc. should be available between member's computer equipment linked up with the trading system of the Exchange
- Service level of various network equipment should be prescribed, such as the readiness for use, servicing or replacement schedule, etc.
- User Authentication and Privacy The authentication of system users to ensure that they are the actual authorized users and not the false ones, including the protection to ensure that only personal data can be retrieved and recorded and that no person other than the owner will be allowed to have access to such data.
 - System Security
 - Before accessing to the Server, all users must be authenticated to ensure that they are the actual authorized users and not the false ones. Any authentication measures or technologies may be implemented such as the identification of user and password. The password shall meet the minimum recommendations as follows:
 - Each password should consist of at least 8 characters and include letters, special and numeric characters.
 - There should be a policy on change of password at every appropriate interval such as every 3 months.
 - Password should not be displayed in a form of clear text.
 - Software or technique that allows any computer equipment or device related to the trading system to record a password for its automatic retrieval in the future should not be used.
 - In case of failure of login attempt for more than 5 times consecutively, the login of such account should be locked.
 - Application Security
 - Before the member authorized officer access to the trading system, they must be authenticated to ensure that they are the actual authorized persons and not the false ones. Any authentication measures or technologies may be implemented such as the identification of user and password. The password shall meet the minimum recommendations as follows:
 - Each password should consist of at least 6 characters
 - Password should not be displayed in a form of clear text.
 - Software or technique that allows any computer equipment or device related to the trading system to record a password for its automatic retrieval in the future should not be used.
 - The process of allocation and delivery of username and password to clients must be adequately secured.
 - In case of failure of login attempt for more than 5 times consecutively, the login of such account should be locked.

Suggestion

- Password should comprise letters (Thai – English), special and numeric characters
 - Password should complicate and hard to guess such as
 - Password should not find out in the dictionary
 - Password should not be easy to guess i.e 12345678, QWERTY, @\$%^&*(
 - The time-out should be set at no longer than 60 minutes to prompt an automatic logout after idle time.
- Information Security Standard
- System Security
 - Storage of password data server shall require encryption.
 - All Servers shall have only necessary services for the trading system transactions.
 - Record of usages and event logs of all Servers, such as user logins, use of Web Server, use of database, should be maintained for the purpose of examination for at least 1 month, and should be immediately available for examination upon request by the Exchange.
 - Application Security
 - Storage of password data shall require encryption.
 - Order log of the application must be maintained for examination for at least 2 years. The log shall include details of the orders i.e. office of the member (such as member's office, member's branch Terminal ID, IP Address, date, time, Client ID, Designated Trader ID, trading information. Such log should be immediately available for inspection upon request by the Exchange.

***II. Order Screening System**

According to the requirements of the Exchange, a member's computer that is connected to the trading system must be equipped with an Order Screening System to screen some types of improper orders, for which the forms can be predefined. **However, for the recording of orders to avoid detection by the Order Screening System, and for some types of improper orders which the Order Screening System cannot detect, the Exchange will monitor trading transactions, executed by customers, by taking into account the trading behavior, intent, and prevailing market conditions, according to normal procedures.**

The types of improper trading orders for which a screening system is implemented are as follows:

1. Orders which intervene the queue and conceal another person's order; and
2. Orders which unduly influence the price.

1. Orders which intervene the queue of and conceals another person's order

This refers to the transmission of a bid or offer at a price substantially higher or lower than the projected price, which cannot be matched, or the transmission of a bid or offer which is not intended to give rise to trading at such price, irrespective of whether such order is cancelled later or not, with the intent to intervene the queue or conceal another person's order. An order of this type is as described below.

	Type of Securities	Examination Period	Examination Criteria
1	Securities traded on the main board, in the case of the first trading day (IPO), or in other cases where there are no ceiling and floor ¹ .	Pre-opening and pre-closing sessions.	The trading system will not accept orders transmitted at the prices which are 50% higher than or 50% lower than the following prices: <ol style="list-style-type: none"> 1. the projected opening price or the projected closing price; 2. if there is no projected opening price or projected closing price during such time, the last sale price shall be used; 3. if there is no last sale price: <ul style="list-style-type: none"> ▪ the IPO price shall be used in the case of securities on the first trading day, ▪ the system will not make an examination in other cases where there is no ceiling and floor¹.
2	Securities traded on the foreign board and having characteristics as follows: <ul style="list-style-type: none"> - Being the first trading day (IPO) of such securities on the main board. - Other cases where such securities that are traded on the main board have no ceiling and floor¹. 	Pre-opening and pre-closing sessions.	The trading system will not accept orders transmitted at prices which are 50% higher or 50% lower than the following prices: <ol style="list-style-type: none"> 1. the projected opening price or the projected closing price; 2. if there is no projected opening price or projected closing price during such time, the last sale price shall be used; 3. if there is no last sale price during such time, the last sale price of such securities on the main board shall be used; 4. if there is no last sale price of such securities on the main board: <ul style="list-style-type: none"> ▪ the IPO price shall be used in the case of securities on the first trading day, ▪ the system will not make an examination in other cases where there is no ceiling and floor¹.

Remarks: The last sale price means the last executed price on a day on which orders are recorded, excluding the closing price on the previous business day (previous closing price).

¹ For example, securities that are traded on the first day after a period of more than 1 year from the SP, or securities that are subject to capital decrease by means of reduction in number of shares, etc.

2. **Orders which unduly influence the price of securities**

This refers to the transmission of a bid or offer at a price which is substantially higher or lower than the projected price, in order to control the price of securities. The member must have in place an examination system as follows:

	Type of Securities	Examination Period	Examination Criteria
1	Securities trade on the main board in the case of the first trading day (IPO), or in other cases where there is no ceiling and floor ¹ .	Opening session.	The member must prepare a warning message for any trading orders transmitted by investors at prices which are 30% higher than or 30% lower than the last sale price.
2	Securities traded on the foreign board and having characteristics as follows; - Being the first trading day (IPO) of such securities on the main board. - Other cases where such securities that are traded on the main board have no ceiling and floor ¹ .	Opening session.	The member must prepare a warning message for any trading orders transmitted by investors at prices which are 30% higher or than 30% lower than the following prices: 1.the last sale price; 2.if there is no last sale price during such time, the last sale price of such securities on the main board shall be used.

**Amended March 23, 2009.

Market Control Department
The Stock Exchange of Thailand