



# Specialist Working Group for Recurrence Prevention Measures (3<sup>rd</sup> meeting)

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## Total smart exchange

Tokyo Stock Exchange, Inc.

December 4, 2020

1. Opening Remarks
2. Explanation from the Secretariat

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- (1) Clarification of Standards, etc. for Trading Resumption under Contingency Plan
- (2) Development of Rules Regarding Handling of Orders and Procedures for Resuming Trading in the Event of a System Failure, etc.
- (3) Policy on Responses, etc. to Inconsistency after the Start of Trading
- (4) Responses in the Event of a FLEX Failure

[Update on Discussions in the 2nd WG (Last Meeting)]

- (5) Handling of Orders Entrusted by Customers in the Case of Order Cancellation by the Exchange
- (6) Draft Information Provision Policy in the Event of a System Failure

3. Discussion
4. Closing

# **(1) Clarification of Standards, etc. for Trading Resumption under Contingency Plan**

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# Current Major Issues and Our Responses

- The major issues and our responses related to the contingency plan are summarized below.
- The details of our responses are on the following pages.

## Major Issues

## Our Responses

## Item No.

Current contingency plan contains no standards for trading resumptions.



In addition to standards for trading suspensions, clarify those for trading resumptions.

1 – 1

Standards for deciding on trading suspensions or resumptions need to be clarified.



Increase foreseeability by clarifying basic policies on trading hours after recovery or in natural disasters.

1 – 2  
2

Procedure for gathering opinions to decide on trading resumptions is not transparent.



Clarify contact persons, persons in charge, the method, etc. for a procedure for gathering opinions and develop a framework for this.

3

- For trading resumptions, exchanges need to ensure fair price formation and liquidity based on a certain level of investor diversity and trading volume in the same way as the standards for trading suspensions.
- Thus, based on the above intention, not only the share of trading value but also the rate of possible retail investors participation could be used as a numerical standard.
- The above approach will also apply to the standards for trading suspensions.

## [Standards for Trading Suspensions/Resumptions]

- Trading will be resumed when the following standards, (1) and (2), are met.
  - (1) The share of trading value of trading participants who are able to participate in trading is **approx. more than 50%**.
    - This standard will be established to ensure liquidity in the entire market.
  - (2) The sum of retail orders brokered by trading participants who are able to participate in trading is **approx. more than 30% of trading value by retail investors.**
    - This standard will be established to ensure a certain level of investor diversity and fair price formation.
    - The scope of trading participants engaged in brokering retail orders and the share of trading value by retail investors will be determined/calculated based on the surveys on investment trends by investor category.

- After recovery, in order to secure a minimum amount of time for order acceptance and provide opportunities trading on the day as far as possible, we should enhance transparency and foreseeability on its responses by preliminary setting order acceptance time and trading hours that have to be secured for resumptions.

## **[Standards for Order Acceptance Time and Trading Hours that Have to be Secured after Recovery]**

- Order acceptance time: Secure approx. 15 min. for resending orders, correcting orders, etc. after recovery.
- Trading hours: Resume trading for even a short period of time to provide trading opportunities on the day as far as possible.

### ➤ **Resume trading if order acceptance can be resumed by around 14:40 (JST).**

(Example: Order acceptance starts at 14:40 (JST) and trading resumes at 14:55 (JST).)

\* The above proposed standard references a current rule specifying a 15 min. trading suspension to disseminate a material fact, and rules in other countries for order acceptance (15-20 min.) in trading resumptions.

\* At least 15 min. will be secured for reconnecting systems (including receiving multicast routing maintenance messages and reconnecting virtual servers) before starting order acceptance.

\* If it is impossible to resume trading during normal trading hours, should the closing time be extended to provide trading opportunities? What perspectives should be considered with regard to providing trading opportunities, and what issues would there be for implementing them?

## 2. Response to Trading Suspension/Resumption in a Natural Disaster, etc.

- The current contingency plan states that TSE will comprehensively consider various factors in addition to the share of trading value of trading participants that are unable to participate in trading (generally 50%) in the event of an earthquake, wind/flood damage, terrorist act, failure in social infrastructure including power/telecommunications networks, etc. However, the plan does not describe a decision-making framework, which should be appropriately clarified to increase the foreseeability and transparency of our responses.
- In the event of a natural disaster, etc. (a powerful typhoon, the Tokyo Inland Earthquake, etc.), unlike a system failure related to the exchange market, when comprehensively considering various factors, we also have to take into account that the event involves the safety of human lives and that the financial market is interlinked and functions as a whole. Also, if the market was closed, after the situation has settled, trading opportunities should be provided promptly and unnecessary delays in trading resumption are not desirable.

### [Considering the Necessity of Reviewing the Policy on Trading Suspension/Resumption in a Natural Disaster, etc.]

- Under such circumstances, **it may not be appropriate to decide based mainly on numerical standards.**
  - \* For instance, when a powerful typhoon is expected to cause significant damage, it may be difficult to use numerical standards to decide whether a trading suspension is required because they were determined beforehand. Also, when considering resumption in the aftermath of a disaster, resumption may be possible with the aim of providing trading opportunities even if the share of trading value of available trading participants is below 50%.
- Also, in order to understand the actual situation, information needs to be shared with the authority and relevant organizations (such as Japan Securities Dealers Association; the Investment Trusts Association, Japan; Japan Investment Advisers Association; Japan Securities Depository Center, Inc.; and the Bank of Japan). As such, we should create **a framework to determine trading suspensions/resumptions based on communication with these parties.**

# 3. Development of Procedure for Gathering Opinions

- In the event of a system failure, we need to quickly assess whether the trading resumption standards have been met in an effective and highly transparent manner. Thus, it should create a framework which preliminarily specifies contact persons of each trading participant and receives their reply about possibility of their participation after trading resumption based on a notice sent by the Exchange with necessary information.

## [Procedure for Gathering Opinions on Trading Resumptions]

### (1) Persons subject to the procedure

- Gather opinions from **all trading participants through persons responsible for securities trading.**

- \* The rules will be amended to specify a procedure for gathering opinions through the persons responsible for securities trading.
- \* To secure a contact when said persons cannot be reached, we will ask for information on multiple contact persons.
- \* In addition, we will check the situations at system vendors and information vendors.

### (2) Details on the method for opinion gathering

- After determining when recovery operations can be completed, the Exchange will promptly notify trading participant representatives and persons responsible for securities trading through Target.
- Said notice will describe recovery procedures (necessity of resending orders, connection procedure, etc.), a tentative schedule (time for starting reconnection, etc.), and a response deadline (e.g., respond within 30 min. ahead of a final decision on resumption).
- **Responses are assumed to be registered via Target** as a general rule.
  - \* If Target is unavailable, we will separately check with persons responsible for securities trading of the top 30 trading participants by share of trading value.
- Trading participants can expect to choose from four responses: (1) can participate within the day, (2) can participate only in wholesale operations within the day, (3) can participate only in retail operations within the day, and (4) No immediate prospects on participation/Unknown.
  - \* The above procedure for gathering opinions may not be conducted if trading can be resumed in the event of a system failure by having trading participants reconnect according to the connection procedures as per normal.
  - \* This procedure is also expected to be used to allow trading participants to report whether they can participate in the event of a natural disaster, etc.



# (Ref.) Contingency Plan with Regard to Trading in the TSE Market (excerpt)

Possible Situations	Measures to be taken by TSE	Rationale	Regulatory Basis
I. In the event of a failure in TSE trading systems	<p>1. Matching Systems: - TSE will halt trading of issues for which continued trading is difficult.</p> <p>2. Order Placement Systems: (1) Stocks and the like - <u>TSE will consider whether to halt trading of securities tradable through arrowhead, comprehensively taking into account the past market share based on trading value of trading participants that are unable to participate in trading (generally above 50%) and the state of the system failure (including the number of trading participants, etc. that are unable to participate in trading and their attributes).</u> - If only specific divisions of a trading participant are unable to participate in trading due to a failure in individual TSE systems, the past market share based on trading value of the affected trading participant shall be the total trading share of the participant through the numbers of the inter-system connection virtual servers (hereinafter "virtual server numbers") that are unable to participate in trading only if the trading participant declares such virtual server numbers to TSE in a prescribed form. - Failures involving trading participants that account for market share above a certain level are considered to have a material impact on market liquidity. - However, ToSTNeT trading will continue as long as any trading participant is able to place orders.</p>	<p>- It is impossible, as a matter of fact, to execute trades manually.</p> <p>- Failures involving trading participants that account for market share above a certain level are considered to have a material impact on market liquidity.</p>	<p>- Rule 29, Item 4 of the Business Regulations, etc.</p> <p>- Rule 29, Item 4 of the Business Regulations, etc.</p>
II. In the event of a failure in the TSE Market Information system	<p><u>- If a failure is likely to distort price formation in the market, such as an overall system failure or where normal quote information is not distributed, TSE will halt trading.</u></p> <p>- In the event that appropriate price checks cannot be conducted for the auction trading price due to a failure in the information distribution function, TSE will halt only ToSTNeT trading.</p>	<p>-If investment continues without sufficient dissemination of market information in a situation such as where there is a failure in the arrowhead information distribution function, it is considered that price formation in the market is likely to be distorted.</p>	<p>- Rule 29, Item 3 of the Business Regulations, etc.</p>
V. In the event of a system failure on the side of trading participants	<p>1. Stocks and the like <u>- TSE will consider whether to halt trading of securities tradable through arrowhead, comprehensively taking into account the past market share based on trading value of trading participants that are unable to participate in trading (generally above 50%) and the state of the system failure (including the number of trading participants, etc. that are unable to participate in trading and their attributes).</u> - If only specific divisions at a trading participant are unable to participate in trading due to a failure in the trading participant's internal system, the past market share based on trading value of the affected trading participant shall be the total trading share through the virtual server numbers that are unable to participate in trading only if the trading participant declares such virtual server numbers to TSE in a prescribed form. - However, ToSTNeT trading will continue as long as any trading participant is able to place orders.</p>	<p>- Failures involving trading participants that account for market shares above a certain level are considered to have a material impact on market liquidity.</p>	<p>- Rule 29, Item 3 of the Business Regulations, etc.</p>

# (Ref.) Contingency Plan with Regard to Trading in the TSE Market (excerpt)

Possible Situations	Measures to be taken by TSE	Rationale	Regulatory Basis
<p>VI. In the event of an earthquake, wind/flood damage, terrorist act, failure in social infrastructure including power/tele-communications networks, etc.</p>	<p>1. When TSE is unable to monitor trading in securities, etc.                      - If TSE concludes that it is difficult to continue operations and is unable to monitor trading in securities, etc. sufficiently in the event that employees of TSE are forced to evacuate the building due to disaster, terrorist act, etc., TSE will halt trading in such securities, etc.</p> <p>2. When trading participants are unable to participate in trading in stocks and convertible bonds, etc.                      (1) Stocks and the like  <u>- TSE will consider whether to halt trading of securities tradable through arrowhead, comprehensively taking into account the past market share based on trading value of trading participants that are unable to participate in the market (generally above 50%), the state of the disaster or system failure (the number of trading participants, etc. that are unable to participate in trading and their attributes, the state of the entire financial market, etc.), and its social roles.</u>                      - If only specified divisions of a trading participant are unable to participate in trading, the past market share based on trading value of the affected trading participant shall be the total trading share of the participant through the virtual server numbers that are unable to participate in trading only if the trading participant declares such virtual server numbers to TSE in a prescribed form.                      - However, ToSTNeT trading will continue as long as any trading participant is able to place orders.</p> <p>3. When clearing/settlement is impossible at the clearing organization or settlement organization(s)                      - In the event of a system failure at the clearing organization (JSCC) or the settlement organization(s) (Japan Securities Depository Center, Inc., the Bank of Japan, fund-settlement banks, etc.), the handling of the settlement date, etc. shall be governed by the provisions of JSCC.                      - If it will take several days for the recovery of the systems at the clearing organization or the settlement organization (s), TSE may temporarily halt trading entirely.</p>	<p>- In order to prevent settlement risk from increasing due to the accumulation of unsettled transactions.</p>	<p>- Rule 29, Item 3 of the Business Regulations, etc.</p> <p>- Rule 4 of the Business Regulations, etc.</p>

## **(2) Development of Rules Regarding Handling of Orders and Procedures for Resuming Trading in the Event of a System Failure, etc.**

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# Outline of Discussions in the 2<sup>nd</sup> Meeting and Discussion Schedule

#	Item	Outline of Discussions in the 2nd Meeting	Schedule Going Forward
<b>1</b>	<b>Development of rules for handling orders to enable trading to resume on the day of the system failure, etc.</b>		
1-1	Clarification of cases for implementing non-acceptance of orders, trading suspension, etc.	Discussed the proposal for non-acceptance of orders and trading suspension in the case where the impact of the system failure cannot be foreseen if orders are accepted (or where inconsistency might occur).	Priority of measures for order non-acceptance will be revised from the original proposal (refer to page 14). Response measures after starting order acceptance will also be clarified. Based on the discussion results, the connection specifications, etc. will be revised and the measures will be clarified.
1-2	Handling, etc. of orders entrusted by customers in the case of order cancellation by the Exchange	While trading participants should in principle resend orders entrusted by customers when orders are cancelled by the Exchange, WG discussed alternative handling that could be considered as appropriate.	Outline of rule revision will be compiled based on the last discussion (refer to pages 28-30). WG also plans to compile the examples and underlying considerations for orders that should not be resent.
<b>2</b>	<b>Development of procedures for resuming trading in the case of an irregular trading suspension</b>		
2-1	Handling of orders affected by invalidation of already accepted orders by the Exchange	Discussed the proposal for manual invalidation of already accepted orders by the Exchange as one means of resolving inconsistency in the case where the Exchange deems that clearing the order book will contribute to a smooth resumption of trading.	Connection specifications, etc. shall clearly describe the operational procedures when there is manual invalidation of already accepted orders by the Exchange in the event of a system failure.
2-2	Inconsistency resolution by system reboot (before the start of trading)	Discussed the proposal for resuming trading by a system reboot before the start of trading as one means if inconsistency can only be resolved by rebooting the system.	With the measures proposed in the 2 <sup>nd</sup> meeting as basis, specific procedures, etc., to enable a smooth response by trading participants will be proposed in or after the 4 <sup>th</sup> meeting.
2-3	Inconsistency resolution by system reboot (after the start of trading)	-	In preparation for inconsistency in execution data, etc. confirmed by trading participants and those confirmed by the Exchange, which result from a system failure during a trading session, the Exchange will clarify how to handle such inconsistency in advance (to be discussed in the 3 <sup>rd</sup> WG meeting). System procedure will be discussed in or after the 4 <sup>th</sup> WG meeting.

# Response, etc. Depending on the Time of Failure Occurrence

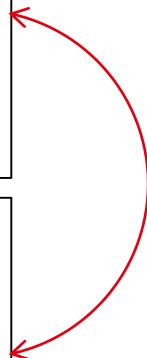
- Measures for cases where the Exchange cannot be expected to resolve inconsistency between rules-based handling and the system on its own as well as recovery measures that can be taken in the event of an inconsistency will be clarified as follows depending on the time of failure occurrence.

Topics discussed in the 3<sup>rd</sup> meeting are indicated in red.

	The Exchange's initial response	Response for recovery	Expected impact
Before starting order acceptance		- Recovery operations on the Exchange side	- Start time of order acceptance and trading as well as FLEX information distribution time, etc. may be changed.
Accepting orders (No executed trades)	- Non-acceptance of orders and trading suspension for all issues *If the impact of the failure can be determined on the Exchange side, non-acceptance of orders or trading suspension (with order acceptance) could be implemented for certain issues, as per normal.	[Implement the following measures depending on the nature of the system failure] - Manual invalidation of orders by the Exchange - System reboot	- In the case where the Exchange invalidates orders but is unable to send invalidation notice messages, trading participants will need to invalidate orders upon receiving information by means other than notice messages. - The schedule for trading hours and FLEX information distribution time, etc. may be changed.  [The following impacts are expected in the case of a reboot.] - System events after the start of system online are expected to occur one more time (However, the durations of events past their initially scheduled times will be shortened as needed)  E.g.: In the case of a resumption from the afternoon session, information on the status of the morning session will be provided, an initial order acceptance session will not be provided, and the trading hours will be shortened.
After start of trading (Trades executed)	- Swift information provision	[Implement the following measures depending on the nature of the system failure] - Manual invalidation of orders by the Exchange - <b>Resolution of inconsistency, etc. in order execution data, etc.</b> - System reboot *Reboot procedures including handling of order execution data will be discussed in or after the 4 <sup>th</sup> meeting.	- Various types of sequence numbers including notice sequence numbers will be reset (TSE is deliberating ways to distinguish the numbers before and after reboot). • <b>FLEX information: Sequence numbers will be rounded up</b>  In addition to the above, for failures after the start of trading, handling of partially executed orders will need to be discussed (to be discussed in or after the 4 <sup>th</sup> meeting together with other topics.)

Among the response measures for order non-acceptance in the case where the impact of a system failure cannot be foreseen with the acceptance of orders, for "Send the market administration message (Order Status: Accepting Orders) but do not accept orders", considering opinion that it would be difficult to handle orders, the priorities of the response measures will be revised (Second priority → Third priority).

[Before starting order acceptance] Measures for Order Non-Acceptance	
First priority	<p><b>Change the start time of order acceptance and do not send the market administration message (Order Status: Accepting Orders) at the normal time.</b></p> <p>*Orders placed in this situation are returned as acceptance errors (Outside Order Acceptance Hours). *A market administration message (Order Status: Accepting Orders) is sent out at the altered start time of order acceptance.</p>
Second priority	<p><b>Disconnect virtual servers before the start of order acceptance.</b></p> <p>*For resumption, a market administration message (Order Status: Accepting Orders) is sent after connections are recovered.</p>
Third priority	<p><b>Send the market administration message (Order Status: Accepting Orders) but do not accept orders.</b></p> <p>*Orders placed in this situation are returned as acceptance errors (such as (1) During Temporary Halt, (2) No Order Allowed for the Participant, or (3) Prohibition of Orders from Virtual Server). Furthermore, (1) will be a case of a trading suspension with orders not accepted. In such case, Warning Information Message (Warning Information Type: Trading Halt (Not Accepting Orders)) is sent.) In addition, in FLEX, an ST tag (Not Accepting Orders) is disseminated. Warning Information Messages are sent to notify of resumption of order acceptance and trading.</p>



Priority revised from the proposal in the 2<sup>nd</sup> meeting

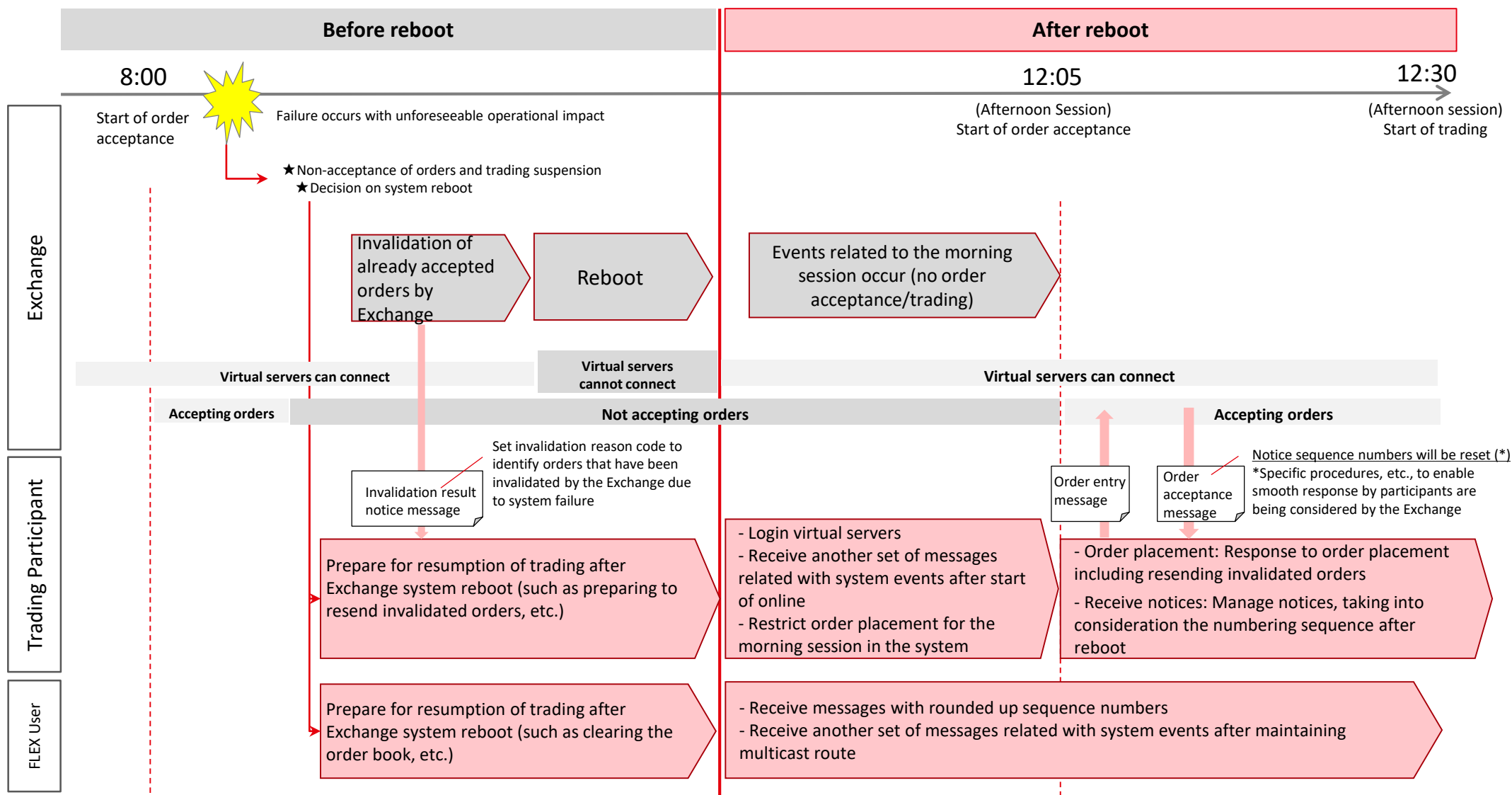
# Response Measures for Order Non-Acceptance (After starting order acceptance or during trading hours)

- If a failure occurs after starting order acceptance (including during trading hours) and the impact from starting (or continuing) order acceptance cannot be foreseen, measures that involve suspending order execution processing should be prioritized from the perspective of avoiding confusion due to wrong order execution.

	[After starting order acceptance] Measures for Order Non-Acceptance	Trading System Status
First priority	<p><b>Send the market administration message (Order Status: Outside Order Acceptance Hours)</b></p> <ul style="list-style-type: none"> <li>*Orders placed in this situation are returned as acceptance errors (Outside Order Acceptance Hours).</li> <li>*A market administration message (Order Status: Accepting Orders) is sent out when resuming order acceptance.</li> <li>*The number of market administration messages per day would be different from a normal trading day (increase due to suspension/resumption) E.g.: Market administration messages if order acceptance is suspended at 8:10 and resumed at 9:00 8:00 (Accepting Orders) →8:10 (Outside Order Acceptance Hours) →9:00 (Accepting Orders) →11:30 (Outside Order Acceptance Hours)→12:05 (Accepting Orders) →15:00 (Outside Order Acceptance Hours)</li> </ul>	<p>Suspend order acceptance Suspend order execution processing</p>
Second priority	<p><b>Do not send market administration message (Order Status: Outside Order Acceptance Hours) and do not accept orders (1)</b></p> <ul style="list-style-type: none"> <li>*Orders placed in this situation are returned as acceptance errors (During Temporary Halt).</li> <li>*Warning Information Message (Warning Information Type: Trading Halt (Not Accepting Orders)) is sent. In addition, in FLEX, an ST tag (Not Accepting Orders) is disseminated.</li> <li>*Warning Information Messages are sent to notify of resumption of order acceptance and trading.</li> </ul>	
Third priority	<p><b>Disconnect virtual servers</b></p> <ul style="list-style-type: none"> <li>*Operation implemented on October 1, 2020.</li> <li>*A market administration message (Order Status: Accepting Orders) is sent after connections are recovered.</li> </ul>	<p>Unable to establish connection <b>Do not suspend order execution processing</b></p>
Fourth priority	<p><b>Do not send market administration message (Order Status: Outside Order Acceptance Hours) and do not accept orders (2)</b></p> <ul style="list-style-type: none"> <li>*Orders placed in this situation are returned as acceptance errors (expected messages include No Order Allowed for the Participant, or Prohibition of Orders from Virtual Server).</li> <li>*Warning Information Message (Warning Information Type: Trading Halt (Not Accepting Orders)) is not sent.</li> </ul>	<p>Suspend order acceptance <b>Do not suspend order execution processing</b></p>

# (Ref.) Recovery in the Event of a System Failure between the Start of Order Acceptance and the Start of Trading

- The following illustrates the case where trading is resumed from the afternoon session by a reboot in the event of a system failure that occurs between the start of order acceptance and the start of trading.



[Notes]

- The above illustration focuses on system-related responses. Information on the failure and recovery operations will be disclosed appropriately.
- The timings of the various decisions and system reboot are provisional.



### **(3) Policy on Responses, etc. to Inconsistency after the Start of Trading**

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## 1. Current trade cancellation rules and approach

- The rules on cancellation of executed trades were introduced based on discussion about past large-scale erroneous order placement as well as Exchange business continuity in the event of an emergency such as a large-scale disaster.
- The basic approach since the rules were introduced is that once a trade is executed, it should, in principle, not be cancelled from the perspective of fairness and continuity of the market, and such rules should only be applied when it is deemed that there will be significant confusion in the market. Accordingly, the Exchange should, in principle, make every effort to develop frameworks to prevent erroneous order placement and develop backup systems for data preservation.
- However, since we are unable to completely eliminate the possibility of market confusion due to erroneous order placement or partial loss of execution records despite such efforts, the rules on cancellation of executed trades were established to address such situations.

[Rule 13 of the Business Regulations, Rule 54 of the Brokerage Agreement Standards, etc.]

## 2. Exchange response in the event of a system failure, etc.

- Even in the event of an Exchange system failure, the basic principle remains that executed trades should not be cancelled and that the Exchange should take various measures to preserve data, etc. Accordingly, the basic approach is that a trade shall be considered valid when it is executed and the execution notice is sent, and that the execution shall be finalized based on the data preserved by the Exchange.
- Depending on the type of failure, there could be cases where the execution data in the Exchange system is lost. Only in such situations will the rules on cancellation of executed trades be applied. (The current rules do not clarify such application and will be revised accordingly.)

- If a failure occurs after a trade is executed, inconsistency due to the failure needs to be resolved in order to maintain market order and ensure the security of trading and settlement as well as investor protection.
- For this purpose, (1) executed trades need to be finalized by both the Exchange and trading participants, and (2) the approach to price continuity and how the rules should be applied need to be considered in the Exchange system.

## **1. Response between the Exchange and trading participants**

- For the purpose of finalizing executed trades and resolving inconsistency, the following main points need to be conducted based on data in the Exchange system.
    - (1) In principle, trades for which execution notices have been returned to the trading participants shall be considered executed trades.
    - (2) In the event of inconsistency in the sending status of the execution notices for a transaction, the inconsistency should be resolved in some way by having the Exchange convey the execution data to the trading participants.
- \*Handling of partially executed orders need to be discussed. (To be discussed in the WG together with other discussion topics.)

## **2. Approach to price continuity and application of the rules**

- Since the order book mid price and the application of the rules will be reset to the conditions in the morning due to a reboot, the following main points need to be considered.
  - (1) Order book mid price: Adjust to the most recent execution price or flexibly renew quotations for the purpose of controlling the impact at an early stage
  - (2) Application of the rules:
    - Issues subject to a trading halt due to the occurrence of corporate information before the system failure will continue to be halted after the resumption of trading.
    - Issues subject to short selling price restrictions will require some response based on the purpose of the restrictions after the resumption of trading.

## Business Regulations

### Rule 13. Cancellation of Transactions

1. Where a transaction is effected because of an erroneous order, if it is extremely difficult to conduct the settlement and the Exchange deems that the market is likely to be confused, the Exchange may cancel the transaction specified by the Exchange as prescribed by the Exchange.
2. Where transaction records in the Exchange's systems are lost due to unavoidable reasons including act of providence, if the Exchange deems it difficult to restore all the lost records, the Exchange may cancel transactions which it designates on a case-by-case basis.
3. Where the Exchange cancels a transaction pursuant to the provisions of Paragraph 1 or the preceding paragraph, such transaction shall be deemed as if it were never effected at all.
4. Even where a trading participant suffers damage because the Exchange cancels a transaction pursuant to the provisions of Paragraph 1, the trading participant shall be unable to claim for compensation for the damage against the trading participant which has placed an erroneous order; provided, however, that the same shall not apply to cases where deliberate action or gross negligence is deemed to have been seen in a trading participant.
5. Where a trading participant suffers damage because the Exchange cancels a transaction pursuant to the provisions of Paragraph 1 or Paragraph 2, the trading participant shall be unable to claim for compensation for the damage against the Exchange; provided, however, that the same shall not apply to cases where deliberate action or gross negligence is deemed to have been seen in the Exchange.

## Brokerage Agreement Standards

### Rule 54. Effect of Cancellation of Transactions, etc.

1. In cases where the Exchange cancels a transaction, rights and obligations between a customer and a trading participant pertaining to such cancelled transaction shall be deemed as if they had not existed at all.
2. Even if a customer suffers loss or damage because the Exchange cancels a transaction, the customer may not claim compensation for the damage against the trading participant who has placed an erroneous order; provided, however, that the same shall not apply if willful intent or gross negligence on the part of the trading participant is deemed to have occurred at the time of placing the erroneous order.
3. Even if a customer suffers loss or damage because the Exchange cancels a transaction, the customer may not claim compensation for the damage to the Exchange; provided, however, that the same shall not apply if willful intent or gross negligence on the part of the Exchange is deemed to have occurred.

## **(4) Responses in the Event of a FLEX Failure**

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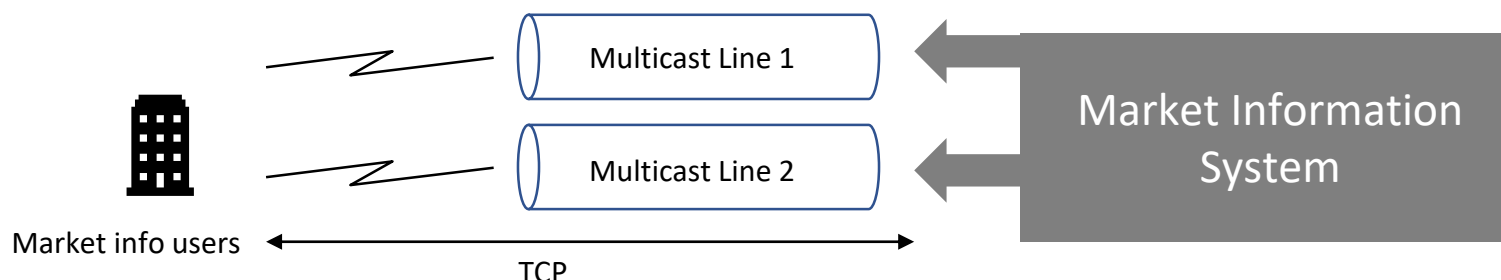


# Arrangements in the Event of a Failure of Market Information System in the Connection Specifications

- TSE provides four types of market information services (FLEX Service) depending on data and bandwidth.

Bandwidth	100M	Wideband (WB)
Data	Standard	Standard (WB)
10 BBO	Standard	Standard (WB)
Full-depth	Full	Full (WB)

- For FLEX Service, redundancy with two multicast lines (two circuits) is required. In the event of a failure on one line, this configuration assumes recovery on the other line or via TCP transmission.



- FLEX Connection Specification (System Operations) describes impacts in the event of a failure of the Market Information System and expected responses on the user side. The following scenarios are included.
  - ✓ Failure in Market Data Feed Server (Real-time)
  - ✓ Failure in Market Data Feed Server (Issue Information)
  - ✓ Failure in TCP Transmission Server
  - ✓ Failure in Trading Server
  - ✓ Failure in Network
- Under the current operation procedures, a decision on whether to trigger the contingency plan is made based on FLEX Standard (WB) (effective after the launch of the new system in Nov. 2019). In the event of a failure of both lines of FLEX Standard (WB), it is assumed that trading will be suspended.

Known Issues  
(Situation on Oct. 1)

Current  
Situation

Proposed  
Response

- Communication start message (scheduled at 7:10) and health check messages (at one-minute intervals) were not disseminated.
- Issue information (7:38) was disseminated later than scheduled.
- Base price information and multicast group number information (7:40) were not disseminated.
- With the above conditions, quote information was disseminated at the start of order acceptance at 8:00.
- In user systems, although communication start and/or health check messages are not usually part of the critical path for business operations, such messages are used to monitor the normality of communications and are considered to have some impact on user systems.
- Issue information, base price information, and multicast group number information are considered necessary for business operations and have impact on user systems.
- Due to Exchange system specifications, issue information, base price information, and multicast group number information for the day cannot be obtained via TCP transmission until multicast dissemination has been completed.
- For quote information, it is disseminated after the above basic information has been disseminated or provided. As such, to prepare for a case where message dissemination will be based on an irregular schedule, we propose to **specify an expected recovery plan in the connection specifications in advance** and conduct recovery accordingly in the event of a failure.
- For issue information, base price information, and multicast group number information for the day, we propose to **modify Market Information System to allow the information to be obtained via TCP transmission** even if multicast transmission is not possible. (This behavior will be specified in the connection specifications as operations in the event of a failure.)
- [Common to the day's/next day's information] For issue information, base price information, and multicast group number information, we propose to **specify in advance the file format** for publishing said information and **clearly state it in the connection specifications.**

# (Ref.) Expected Recovery Plan (Draft)

- Below is a draft of expected recovery plan for FLEX in the case where the communication start message and other messages are not disseminated but subsequent events continue to occur.

Time	Event	Dissemination Status	Remarks
7:00	Multicast routing maintenance start	○	
7:10	Communication start	×	
	Health check start (1-min. intervals)	×	
7:38	Send issue information	○	
7:40	Send base price information	×	
	Send multicast group information	×	
8:00	Start of order acceptance	○	
:			
8:10	Complete system recovery	—	<u>Assume system recovery is completed by 8:10</u>
8:20	Notify recovery process	—	<ul style="list-style-type: none"> <li>• Notify the schedule of events after dissemination of communication start message</li> <li>• To be posted on the JPX website, as mentioned at the 2nd WG meeting</li> </ul>
	(Secure time necessary to let the notification become known)		
8:30	Send communication start	○	*In the recovery process, messages will also be disseminated in the same order starting from the communication start message.
	Send health check	○	
8:38	Send issue information	○	*Information that had been already disseminated will be disseminated again in the recovery process.
8:40	Send base price information	○	
	Send multicast group information	○	
From 8:45	Send backup / refresh	○	The latest snapshot of the orderbook is disseminated by multicast transmission



## Known Issues (Situation on Oct. 1)

- If a system reboot is conducted during the day due to a system failure, etc., message sequence numbers before the reboot will be duplicated.
- For quote information before the reboot, order book clear information will not be disseminated.
- For execution information before the reboot, delete information for executions that were invalidated will not be disseminated, or execution information for valid executions will not be disseminated after the reboot.

## Current Situation

- While some users may reboot their systems upon an Exchange system reboot, if any user system cannot be rebooted, under the current operation procedures, in the case where the message sequence numbers are duplicated and cannot be received on the user side, then it will be difficult to recover operations during the trading day if the handling of messages received before the reboot is not clarified.
- Descriptions in the connection specifications do not consider "reboot", "duplication of message sequence numbers", and "invalidation (deletion) of execution information".

## Proposed Response

- In the event of a system reboot due to a system failure, etc., in order to avoid duplication of message sequence numbers, we propose to **"round up message sequence numbers"**. (This will be specified in the connection specifications as operations in the event of a failure) .
  - If there is a system reboot, all events in the one-day operation schedule will occur from the start regardless of the actual trading hours (i.e., status change information for the morning session will be disseminated even if the morning session was not conducted).
- For order book clear information, we propose that, **as a general rule, it will be disseminated from the Exchange**; however, in preparation for the case where it cannot be disseminated from the Exchange, we propose to **specify in the connection specifications that users may actively clear the data**.
- For trading resumption, we propose to give a priority to the recovery of quote information necessary for recreating the order book and **publish corrections to other information (assuming information such as OHLC prices, trading volume, trading value, VWAP, and index values disseminated by TSE) after the day's market close**. (We propose to specify in advance the file format for publishing said information and clearly state it in the connection specifications.)

# Summary of Responses in the Event of a FLEX Failure

Implementation dates will be adjusted with other tasks



No.	Response	Implementation Date
1	Specify the expected recovery plan in the connection specifications	By March 2021
2	Specify the file format for publishing information (issue basic information, information after market close) in the event of a failure, in the connection specifications	By March 2021
3	Specify scenarios in the event of a system reboot (e.g. rounding up message sequence numbers) in the connection specifications	By March 2021
4	Specify the operations that users may actively clear the order book data in the connection specifications	By March 2021
5	Modify the TCP transmission function in the system and accordingly revise the connection specifications	TBD (To be announced when determined)
6	Conduct failure test for the above responses on non-business day	To be conducted continually after revising the connection specifications

# Update on Discussions in the 2<sup>nd</sup> WG (Last Meeting)

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## **(5) Handling of Orders Entrusted by Customers in the Case of Order Cancellation by the Exchange**

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- Handling of entrusted orders needs to be clarified in advance as there is likely to be a case where the Exchange has no choice but to cancel already accepted orders from transaction participants due to the impact of a system failure, etc.
- For handling of orders entrusted by customers in the case of order cancellation by the Exchange, default rules will be established. At the same time, necessary revisions will be made to clarify that a separate arrangement(s) can be made when necessary based on the nature of the entrusted orders or operational needs, as below.

Item	Description	Additional Comments
1. Cancellation of Bid/Offer	<ul style="list-style-type: none"> <li>Clarify that the Exchange may cancel bids/offers from trading participants in the case of not only a trading suspension but also a system failure, etc.</li> </ul>	<ul style="list-style-type: none"> <li>The current rules provide that the validity of bids/offers in the case of trading suspension will be "specified on a case by case basis".</li> </ul>
2. Validity of Entrusted Orders	<ul style="list-style-type: none"> <li>Clarify that, as a general rule, orders entrusted by customers with trading participants will remain valid, even after bids/offers from trading participants are cancelled by the Exchange.</li> </ul>	<ul style="list-style-type: none"> <li>The current rules provide that entrusted orders will remain valid even after trading suspensions.</li> </ul>
3. Necessity for Resending Entrusted Orders	<ul style="list-style-type: none"> <li>Clarify that, as a general rule, trading participants need to resend orders entrusted by customers, even after bids/offers are cancelled by the Exchange.</li> <li>Also clarify that whether it is necessary for trading participants to resend entrusted order will depend on an arrangement(s) made in advance between the trading participant and its customer or an instruction by the customer.</li> </ul>	<ul style="list-style-type: none"> <li>If provisions on whether to resend orders, etc. are included in the general conditions, it will be deemed that an arrangement(s) is made in advance between the trading participant and its customer.</li> </ul>
4. Implementation Date	<ul style="list-style-type: none"> <li>Gather public comments in January 2021 and implement rules around April 2021.</li> </ul>	

# Examples of Orders for which Resending Is Inappropriate

- In the survey sheet, etc. comments were received on whether to resend entrusted orders for the following order types.
- We would like to receive comments such as on what order types, including the following, a consensus should be built on between trading participants and investors on what aspects, in terms of operations or systems, would make it difficult or inappropriate to resend orders.

Order Types	Summary of Comments Received	TSE Response (Draft)
Orders from Institutional Investors	<ul style="list-style-type: none"> <li>• Whether to continue executing all orders will be checked as a business practice.</li> <li>• However, predetermined arrangements on handling will be need to be agreed with overseas investors as it is not possible to check with them.</li> </ul>	<ul style="list-style-type: none"> <li>• It is possible to check with customers whether to continue executing their orders.</li> <li>• On the other hand, it is possible to specify rules for resending orders, including with overseas customers.</li> </ul>
DSA Orders	<ul style="list-style-type: none"> <li>• It is necessary to check with customers individually whether to execute their orders as per prior instructions at unusual trading hours. (e.g. algorithms that calculate market impact based on a full day of order executions)</li> <li>• We would like to remove the need to check with individual customers whether to resend orders.</li> </ul>	<ul style="list-style-type: none"> <li>• Some consider that it is necessary to check with customers their intentions, while others do not. It seems to be difficult come to a consensus.</li> </ul>
DMA Orders	<ul style="list-style-type: none"> <li>• It is necessary for customers to resend orders or prepare alternative measures.</li> </ul>	<ul style="list-style-type: none"> <li>• Does the nature of these orders make it difficult for trading participants to resend such orders?</li> </ul>
VWAP Orders	<ul style="list-style-type: none"> <li>• It is necessary to check with customers their intentions.</li> </ul>	<ul style="list-style-type: none"> <li>• It will be possible i) to check with customers individually or ii) to agree on arrangements with customers in advance.</li> </ul>
On-open/on-close Orders	<ul style="list-style-type: none"> <li>• It may be necessary to check with customers their intentions based on market conditions.</li> </ul>	<ul style="list-style-type: none"> <li>• It will be possible i) to check with customers individually or ii) to clarify with customers in advance that orders will be executed on open/close after trading resumption.</li> </ul>

## **(6) Draft Information Provision Policy in the Event of a System Failure**

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# Draft Information Provision Policy in the Event of a System Failure (1)



- To enrich information dissemination to investors and market users in the event of a system failure, we will disseminate information as follows.
- The contents of this policy will be revised as needed to reflect failure response drills, etc.  
\*Updates from the last meeting are indicated in red.

Item	Description	Notes
1. Location of posted information	<p>(1) JPX website</p> <ul style="list-style-type: none"> <li>- A web page will be launched to enable various stakeholders to access information compiled specific to system failure. It will include information such as whether trading is affected and details of system failure.</li> <li>- If trading is affected as in the case of a trading suspension, an alert for notification will be conspicuously posted on the homepage to bring attention to it.</li> </ul> <p>(2) Target</p> <ul style="list-style-type: none"> <li>- If trading is suspended, notification will be issued through Target in addition to (1).</li> </ul>	<ul style="list-style-type: none"> <li>- See below for an image of the dedicated web page.</li> <li>- In the event of a failure that does not affect operations, such as when an automatic switchover normally occurs, a notification will not especially be posted on the homepage.</li> </ul>
2. Updated frequency	<p>(1) JPX website</p> <ul style="list-style-type: none"> <li>- The first notification will be posted immediately after a failure is detected and as soon as <b>possible when</b> the extent of impact, etc. is confirmed. (However, if order acceptance must be suspended immediately, such as in the case of a trading server failure, the first notification will be posted even if confirmation of the failure impact has yet to be fully completed.)</li> <li>- Afterwards, whenever the extent of impact, event summary, etc. updates, that information will also get updated each time.</li> <li>- Even if there are no updates (no developments in the situation), it will be updated, <b>as a general rule</b>, every 30 minutes from the most recent update with a status of no updates.</li> </ul> <p>(2) Target, email to contact person in the event of a system failure, Twitter, <b>etc.</b></p> <ul style="list-style-type: none"> <li>- When the JPX website is updated, the information will also be sent through these tools. (push-based information delivery)</li> </ul>	<ul style="list-style-type: none"> <li>- Even if system recovery occurs immediately, "a system failure occurred but is now restored" notification will be posted.</li> <li>- Emails will be sent to email address of "contact person(s) in the event of a system failure" registered via arrowface (Up to three (3) addresses can be registered.)</li> </ul>



# Draft Information Provision Policy in the Event of a System Failure (2)



Item	Description	Notes
3. Published contents	<p>The following information will be disclosed on the JPX website:</p> <ul style="list-style-type: none"> <li>✓ Operational status of arrowhead and ToSTNeT system (whether trading is affected or not)</li> <li>✓ Details of the system failure such as he affected system(s), the extent of impact, and event summary</li> <li>✓ Updated information in chronological order, etc.</li> </ul> <p>The above disclosure steps assume the following:</p> <ol style="list-style-type: none"> <li>(1) Event detection (system failure)</li> <li>(2) Operational impact (possible event in the future in addition to an event occurring at that time)</li> <li>(3) Possibility of a trading suspension</li> <li>(4) Trading suspension</li> <li>(5) Expected timing of trade resumption (in the case of a trading suspension)</li> <li>(6) When trade resumption is determined, the resumption procedures and schedule (in the case of a trading suspension)</li> <li>(7) Trading schedule on the next business day, etc.</li> </ol>	<p>- Information in English will be promptly disclosed after being disclosed in Japanese.</p> <p>- Every effort will be made to provide details of the failure or causes. However, in case the situation is not identifiable immediately, information sent on systems operations, impact on trading and its recovery will take priority.</p>
4. Information dissemination	<ol style="list-style-type: none"> <li>(1) Target, email to contact person(s) in the event of a system failure - Notification will also be issued via Target and email to contact person(s) in the event of a system failure, as before.</li> <li>(2) Twitter, etc. - For information on possible system failure that will affect trading, Twitter, etc. (official JPX account) will also be used to inform the general public of information posted on the JPX website.</li> </ol>	