



ASX Market Management

**Consultation Paper on the
Management of the ASX Market**

21 March 2018



Invitation to comment

ASX is seeking submissions on the management of the ASX Market canvassed in this paper by 30/04/2018. Submissions should be sent to:

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Attention: Ben Jackson

ASX prefers to receive submissions in electronic form. Submissions not marked as 'confidential' will be made publicly available on ASX's website.

If you would like your submission, or any part of it, to be treated as 'confidential', please indicate this clearly in your submission. ASX is available to meet with interested parties for bilateral discussions on the management of the ASX Market.

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Executive summary

Following the outage of the ASX trading platform (ASX Trade) in September 2016, ASX has reviewed how certain aspects of the equity market infrastructure work. The ASX review identified areas where some enhancements could be made and this paper is seeking feedback from market users on these proposals.

ASIC also conducted a review and issued a report with a series of recommendations ([link](#)). ASIC identified some areas where ASX could enhance its incident management processes, including the implications of ASX's decisions on stakeholders and their dependencies on ASX's systems and processes.

This paper is the final of three consultations following the ASX Trade outage in September 2016. The first paper addressed ASX market closing price calculations and ASX Clear settlement price calculations ([link](#)). The second paper addressed the interdependency between ASX listing operations and ASX's trading platform for the cash market, ASX Trade ([link](#)). This paper seeks feedback from stakeholders on the market management of ASX Trade (ASX's equity and equity derivative trading platform) during market issues.

This consultation paper follows a review of actions taken by the ASX during technical issues or outages, including:

- the application of session states (e.g. Enquire and Adjust);
- the management of orders during incidents;
- communication with the Market during incidents;
- the current ASX market practice of staggered group openings; and
- action when only a subset of securities are available for trading.

ASX is also taking the opportunity to consult on the management of orders following a code change for an ASX listed entity.

The approach that ASX adopts for each incident will depend on the specific facts and circumstances as ASX understands them at the time. In most circumstances the market management proposals set out in this paper should be followed. However, it may be that the approach adopted for a particular incident may differ from the specified approach if ASX considers it necessary in order to meet its licence obligation to operate a fair, orderly and transparent market.

It is intended that this consultation paper will also serve as an opportunity for stakeholders to review and provide feedback on market management practices more generally. Written submissions should be made by 30 April 2018. ASX is open to arranging meetings with interested parties to discuss the issues raised and intends to meet with industry bodies to elicit further feedback.

Background

On 19 September 2016 a partial hardware failure on the primary ASX Trade database server occurred. This initial technical failure led to a number of events that impacted the ASX market throughout the trading day, including a delayed open and early close. Additional information relating to the ASX Trade outage can be found [here](#).

ASX has well established processes for the management of issues that disrupt the proper functioning of ASX Trade. These existing processes are tested on a regular basis both internally and with external stakeholders in scheduled Business Continuity Planning events. The feedback received from all stakeholders, including customers, other approved market operators and ASIC post the ASX Trade outage have led to a review of a number of these processes as they apply during outages and during normal market operations. A summary of this feedback has been outlined in the sections below.

Operational management of the ASX equity market during a market disruption

Trading Session States

ASX Trading Session States determine whether market participants can enter, amend and cancel their orders and if orders can match. Session states are either applied at a market-wide level, such as Pre-Open, Open and Close or at an individual security level to handle exceptions to the trading session, such as Trading Halt or Suspend. A full list of ASX session states and parameters are set out in the ASX Operating Rules ([link](#)).

ASX recently consulted on changes to the operation of session states (e.g. trading halts and suspensions) for individual securities and is currently finalising those new procedures.

The key session states used to manage individual securities are:

Pre_NR	A trading pause is applied when a price sensitive announcement is received during normal market opening to allow investors time to consider the details of the announcement before trading recommences.
Trading Halt	ASX may grant a trading halt at the request of a listed entity. A company is moved into the 'Trading Halt' session state when there is a requirement to halt trading for a longer period than usual, during which material information pertaining to the company is finalised and released to market.
Suspend	ASX may at any time suspend an entity's securities from quotation at the request of the entity or to prevent a disorderly or uninformed market. If Cash Market Products are suspended from quotation or trading, the market for those products will be suspended.
Reg_Halt	Used to refresh (via an auction) the Extreme Trade Range (ETR) Reference Price of an instrument where an instrument's price limit threshold or recent traded prices approach or meet the ETR.

The key session states used to manage market-wide events are:

Enquire	This session state locks the market so no trading messages/orders may be entered, amended or cancelled. Used while an investigation into the cause and implications of the issue is undertaken.
Adjust	The Adjust session state is less restrictive than Enquire and will allow order cancellations and modifications (provided their ranking In Price/Time Priority is not improved).

Trading Session States during a market disruption

Consideration has been given to the appropriate Trading Session States that are applied during a trading disruption, including where ASX Trade is unavailable for trading for an extended period of time due to technical issues.

Generally, ASX's practice when there is a technical or operational outage on ASX Trade is to place the market into the Enquire session state. This session state is used while an investigation into the cause and implications of the issue is undertaken. This session state locks the market so no trading messages/orders may be entered, amended or cancelled (this includes all trade reports). This is important to allow ASX to investigate technical problems in a stable environment, rather than one where the order book is dynamically changing.

Once the problem has been identified and resolved, the market transitions to a Pre-Open state for a period of time prior to the resumption of trading.

ASX examined practices in other international exchanges to understand what market-related activities (or parameters) are permitted during technical issues or outages on their markets¹. In summary ASX has identified that in these other markets:

- The overarching principle in managing outages is to act in the interests of the broader market.
- Most exchanges have a variety of session states available to choose from depending on the severity of the incident and likelihood of an immediate resumption of trading.
- Some exchanges limit their session states to Open, Close and Halt. BATS only have one Halt session state, but the exchange will identify if the cause is regulatory or a technical problem.
- Many exchanges (e.g. LSE, SGX, HKEX) have a session state available, similar to Enquire, that completely halts the market with no order entry, modification or cancellation permitted.
- Some exchanges (e.g. Deutsche Boerse) distinguish between persistent (Good-till-Cancel) and non-persistent orders (day only) and will only permit deletions of the latter during a technical interruption.
- Some exchanges (e.g. South Africa's JSE) allow order cancellation during market outages.
- In all cases, once the technical issue has been resolved, there is a Pre-Open (price discovery) period prior to trading recommencing.

Throughout the review of ASX's market management, feedback has been received regarding the use of Enquire. Some stakeholders have indicated that locking the order book to enable the exchange to investigate technical problems in a stable environment is the correct course of action. Others indicated that one of the impacts of using the Enquire session state during an outage on ASX was the effect on customers that are looking to continually manage their order books in real-time, across multiple trading venues.

The Enquire session state enables ASX to investigate technical problems in a locked data environment. ASX will always ensure that customers are granted an opportunity to cancel remaining orders prior to the ASX market re-opening. While a Pre-Open period is always provided by ASX to allow participants time to manage their orders, some participants provided feedback that they require a longer time period to receive instructions from their clients.

ASX considers that there could be scenarios where the use of the Adjust session state would allow participants to modify existing orders (including cancellation) during an outage. Once the technical problem

¹ Information was sourced from Asian exchanges such as HKEX, SGX and Bursa Malaysia, European exchanges including LSE, Deutsche Boerse, Euronext and the Nordic exchanges and from North America including NYSE and TMX.

has been resolved, the market would still transition to a Pre-Open state for a period of time prior to the resumption of trading.

ASX proposes to transition from the Enquire to the Adjust session state during an outage once it is confirmed there is no further risk to ASX Trade and where feasible. This will occur where ASX determines that:

- a locked static order book is no longer critical for technical diagnosis and/or recovery of the trading system; and
- allowing order cancellations or modifications will not be detrimental to the timely resolution of the technical or operational issue or compromise the trading system; and
- the proposed recovery schedule offers participants sufficient time to manage existing orders during a period of Adjust prior to the Pre-Open period.

The actions permitted in Enquire and Adjust include:

	Order Matching	Order Entry	Order Modification	Order Cancellation	Trade Reports
Enquire	X	X	X	X*	X
Adjust	X	X	✓**	✓	✓
Pre-Open	X	✓	✓	✓	✓

* Currently 'Cancel Orders on Disconnect' functionality is available (this functionality is subject to review (see below)).

**Providing order priority is not improved.

Question

1. Do you have any views on ASX sessions states and the proposal to move the Market to the Adjust session state if ASX determines that it will not be detrimental to the resolution of the technical problem or delay the reopening of the ASX market? Please provide reasons for your answer including the practical impact on your operations of being unable to amend or cancel standing orders whilst the market is in an Enquire session state.

Cancel Orders on Disconnect Functionality

ASX Trade offers participants the use of 'Cancel Orders on Disconnect' functionality. This functionality was introduced in 2006 when ASX transitioned from the SEATS platform to ITS. It allows a participant to request ASX to set, on a per user session basis, whether nominated orders will be retained or automatically inactivated (purged) in the event that a user session is disconnected from ASX Trade. A disconnection event is where a user session loses connection with ASX Trade (for any reason) without submitting a normal 'Log Out' request.

This functionality provides market participants with the flexibility to have their orders automatically managed by ASX Trade if such events occur. The parameters can be set when the user session is set up or can be put in place (or modified) at a later time.

In discussions with participants during the course of the review a number indicated that they were unaware that ASX currently offers this functionality. ASX will undertake an information program that makes all users aware of the functionality and how it operates.

Disconnection events

There are three options available to participants to set when there is a disconnection event:

1. Keep – all orders will be retained
2. Inactivate Day – all 'day' orders will be set to inactive and automatically purged at end of day; all other orders will be retained
3. Inactivate All – all orders will be set to inactive and automatically purged at end of day

Once an order is set to inactive it will be removed from a securities order book. A Participant may choose to re-activate an order once it has been inactivated, however order priority will have been lost.

ASX has reviewed how each of the session states interact with the 'Cancel on Disconnect' functionality. Currently, all ASX Trade session states, including Enquire, are configured to allow order inactivation. The Enquire session state should lock the order book whilst investigation into a possible technical or operational issue is performed. Allowing orders to be inactivated does not achieve this and may be detrimental to the resolution of the issue or compromise ASX Trade. ASX is proposing to remove the 'Cancel on Disconnect' functionality from the Enquire session state but would continue to allow it for all other session states.

While the 'Cancel on Disconnect' functionality will be removed from the Enquire session state, it is ASX's intention during technical disruptions to move from the Enquire to the Adjust session state (where appropriate). The Adjust session state allows order amendment and cancellation only.

Question

2. Do you have any views relating to the impact on participants of a proposal to remove the 'Cancel on Disconnect' functionality during the Enquire session state?

Notification of a delay to the market open

ASX seeks, wherever possible, to resolve technical issues before they require the ASX market to be closed (or the opening of the market to be delayed). ASX also aims to ensure the ASX market receives notice as soon as practicable of the issue and any decisions made by the ASX to delay an open or halt trading.

On the morning of the ASX Trade outage in September 2016, ASX endeavoured to resolve the technical issues prior to the scheduled equity market open of 10:00am. Whilst the majority of the ASX Trade components had been recovered prior to that time, some issues remained. ASX therefore notified the market 15 minutes before the scheduled commencement of the market opening rotation (9:45am) that there would be a delay. Subsequent feedback received from stakeholders indicated a longer notice period would have been beneficial to market participants.

In response, ASX proposes to notify the market by 9:30am should it become aware of an operational or technical issue that may not be resolved and may require a delay to the normal market opening. This will assist market users by providing more notice to make alternative trading arrangements and to consider their trading options. Notification of the decision to delay the open will be published via the ASX Trade market message facility as well as the [ASX System Status webpage](#).

Question

3. Is 30 minutes a sufficient notification period to advise the market that there is a technical issue that may delay the market opening? If not, please provide reasons.

Notification of a resumption to market trading

Following the resolution of a technical or operational issue, it is existing practice for ASX to generally provide a minimum of 20 minutes notice prior to transitioning into a Pre-Open (price discovery) session state. A further 20 minute Pre-Open period is also provided prior to the market then transitioning into an Open session state. The result is that the market is generally given 40 minutes notification prior to trading resuming.

This balances the need to restart trading as soon as practicable with the need to allow participants and their customers to consider how best to manage their orders.

The actions permitted in Pre-Open include:

	Order Matching	Order Entry	Order Modification	Order Cancellation
Pre-Open	X	✓	✓	✓

Market resumption timers will be published via the ASX Trade market message facility as well as the [ASX System Status webpage](#).

Question

4. Is the proposal to provide 20 minutes notification prior to the transition into the Pre-Open session state (price discovery) and a further 20 minutes of Pre-Open period prior to the resumption of trading sufficient? Please provide reasons for your response.

Opening rotation

The ASX equity market commences trading each day with a rotating series of opening auctions across five alphabetical groups of securities. The staggered open (opening rotation) has traditionally been in place to help facilitate order management by ASX market participants over the opening of the ASX equity market. The group opening times are approximately 2 minutes and 15 seconds apart, are randomly generated by ASX, and occur up to 15 seconds either side of the times specified below:

Group 1 10:00:00 am +/- 15 secs 0-9 and A-B (e.g. ANZ, BHP)

Group 2 10:02:15 am +/- 15 secs C-F (e.g. CPU, FXJ)

Group 3 10:04:30 am +/- 15 secs G-M (e.g. GPT)

Group 4 10:06:45 am +/- 15 secs N-R (e.g. QAN)

Group 5 10:09:00 am +/- 15 secs S-Z (e.g. TLS)

The timing between each Equity Market Group opening is extended to approximately 4 minutes on the day the SPI 200 Futures Contract expires each quarter.

If an operational or technical issue delays the ASX market open or requires resumption after a market-wide halt, ASX's standard practice has been to maintain this staggered open. This provides certainty that established processes are being followed. In accordance with this practice, once the ASX Trade technical issue was resolved on 19 September, a new staggered open was configured. In the review of the ASX Market outage, feedback was received from some stakeholders that due to changing market dynamics and to reduce complexity the staggered open should be replaced by a single ASX equity market opening auction.

In addition, ASX examined the practices of 34 other international exchanges. While there is some differentiation amongst exchanges regarding the opening, the ASX is the only one maintaining a staggered open.

There are a range of factors that may be taken into account when considering whether to change the staggered opening process, these include:

- Order book management - does the original rationale for the staggered opening, providing participants with the ability to manage a large number of orders on the open still hold?
- Does the fact that securities in different industry sectors currently open at different times and that some market indices and securities require all products to be open before calculating a price cause particular difficulties?
- Are there any scenarios where having an open rotation helps the orderly operation of the market (e.g. On an SPI expiry day)?
- Should a single market open be introduced on all trading days or only on the resumption of trading following a market outage?
- If a single market open was introduced, should it be set at a single point of time or should it be scheduled at a random time in a specified window (e.g. 10:00:00 +/- 15 secs)?

ASX seeks feedback on the impact of a proposal to remove/potential removal of the approximately 2 minute and 15 second staggered open between the five separate Equity Market Groups. This would be implemented for both the standard market opening and also in the event of a resumption of trade following a market disruption.

ASX is not proposing to change the existing market opening times or arrangements for any other market, e.g. Index Derivatives, ETOs, Warrants.

Questions

5. Do you support the proposed removal of the staggered opening auction process and move to a single open for the ASX equity market?
6. What impacts do you think this will have on the operation of the market?
7. Will it require you to make systems/operational changes to implement?

Unavailability of a subset of securities for trading

Questions have been raised about whether it is appropriate to open the market in circumstances where trading is only available for some, but not all, securities because of a technical issue.

The structure of security trading on ASX Trade is spread across a number of partitions to manage the throughput of trading (more than 1 million trades a day across over 2,200 entities).

Equity securities on ASX Trade are broken up into:

- **Five Equity Market Groups** organised alphabetically, for the purposes of managing the staggered opening auction process.
- **Four Equity Market Partitions** to support load balancing of orders and trades across the trading platform. Securities from each group trade across all four Partitions. Each partition is broadly aligned to a particular security industry sector:
 - Partition 1: Materials
 - Partition 2: Financials
 - Partition 3: Energy, Industrial, Index, Classification Pending
 - Partition 4: Consumer Discretionary; Consumer Staple; Healthcare; Information Technology; Telecommunications; Utilities; Agriculture

On 19 September 2016 ASX Trade experienced two separate issues where a subset of securities was not available for trading. The first issue occurred when securities in Groups 4 and 5 were not available to open as a result of an operational error. The second was a technical issue regarding the generation of trade confirmation broadcasts for trades executed in Partition 2.

ASX considered the circumstances where it may be appropriate for all, or for only a subset of securities, to be available for trading or for the whole market to be halted. In addition, the ASIC review received some feedback from participants that ASX should have ceased trading in all securities rather than continuing to remain open with only a subset of securities open or functioning correctly. It was noted that it is difficult to calculate market indices or to price certain securities (e.g. some exchange-traded funds, options, warrants and products over a basket of securities) when only a subset of the underlying securities is available for trading.

ASX's view is, based on some of the reasons listed above, that if an equity subset (Group or Partition) fails due to a technical error, the entire ASX equity market should be halted as soon as possible to avoid

investor/participant uncertainty and to enable system recovery. ASX would take all circumstances into account prior to this action.

In practice this means that failure of one partition, covering approximately one quarter of the market, representing one or more industry sectors would see the whole ASX market being closed. Although trading for all securities may still be available on an alternate platform.

Question

8. When a subset of securities are unavailable for trading, what is your opinion as to whether ASX market trading should continue in the other securities available for trading or should trading be halted across the entire ASX market? Please provide the rationale for your view.

Order behaviour for ASX Trade code change

ASX listed securities may be subject to a change in the listed three letter code representing them in the trading system. The established process is for all active orders to be transferred from the existing code to the new code on the effective date of the code change.

For example:

Due to a change in company name from XY Trading Limited (existing code: XYT) to XY Investing Limited the company has requested a new ASX code of XYI.

Currently all active orders under ASX code XYT at market close on the previous trading day will be transferred to the new ASX code XYI from the commencement of trading on the following day.

ASX has received some feedback that the established process should be changed so that all orders are purged when there is a code change. This feedback indicated that the complexity of how participant order management systems handle such code changes and subsequent transactions makes the transferring of existing orders problematic.

Question

9. When there is a code change for an ASX-listed security, should active orders be:
- transferred to the new security code and not purged, as per current process; or
 - automatically purged as the result of a code change

Please specify your preference and provide any reasons to support your position.



Next steps

ASX seeks feedback on the proposed changes to the management of the ASX Market. Written submissions should be made by 30 April 2018.

ASX welcomes the opportunity to discuss these proposals with interested parties (please refer to the contact details on page 2).

Subject to feedback, an implementation timeline for the above mentioned proposals will be published in the ASX response to consultation.