



SIX Swiss Exchange

Emergency and Outage Policy – A High Level Summary of Procedures on SIX Swiss Exchange

November 2021

Introduction

At SIX Swiss Exchange, operational stability is at the core of our daily business. We deploy a tremendous amount of effort to ensure that trading technology is robust and has full contingency capability. There are a significant number of contingency mechanisms embedded within the core technology that aim at minimizing the risk of an outage or serious production issues. All of which aim to ensure continuity of exchange operations.

We acknowledge the considerable number of industry discussions and publications about outage protocols in summer and fall 2021. This document summarizes key emergency procedures of SIX Swiss Exchange, provides links to existing public documents and points to relevant accessible information for our members located within the Member Section of our website. This document is split in 2 distinct sections. The first one talks about our system availability, back-up, data centre architecture and governance framework. The latter covers the topics raised in the industry papers and in particular focuses on emergency communications, order and trade cancellations and market re-open.

SIX Swiss Exchange Platform and Risk Management

System Availability

Technical outages of stock exchanges are rare occurrences but can happen on any market. On SIX Swiss Exchange we have not experienced any outage for the last 10 years. We have put in place a set of emergency procedures in case of an event. They are regularly tested and have been continuously updated to meet current market standards and regulatory obligations.

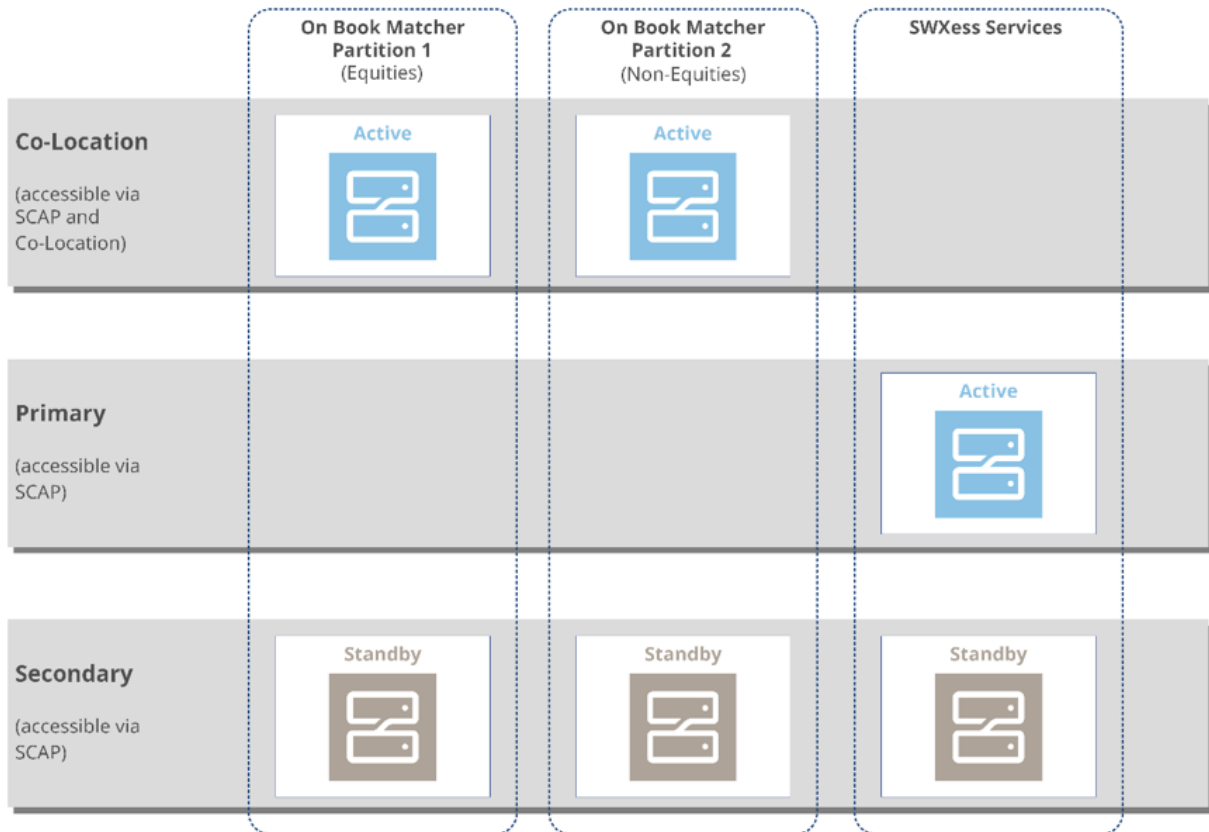
In order to ensure the continuous operation of the systems, the data centres of SIX Swiss Exchange are equipped with independent and redundant power supplies as standard. In the event of a long-lasting power cut, operations are switched to the backup data centre. We use business continuity management (BCM) to ensure our services remain available or can be rapidly restored. We have developed business continuity plans for all the relevant business processes and tests them regularly.

Back-up (system resiliency) / Data centre architecture

The component processes of the SWXess trading platform of SIX Swiss Exchange are all highly available. Our trading platform is distributed over three data centres with hot and cold standby functionality. Servers in each data centre have either active/active (hot) or active/standby redundancy. The actions necessary in case of an issue depends on a component's availability design.

The processing will either continue to run with the remaining instances or will restart automatically within minutes.

A Standby Disaster Recovery procedure is initiated should there be a complete failure of a primary operational data centre of SIX Swiss Exchange.



The 3 Lines of Defense – Principle at SIX and SIX Swiss Exchange.

The 3 lines of defense model is embedded into the governance framework of SIX Swiss Exchange and it applies to the trading platform operations:

1. First Line of Defense

Our first line of defense exists in the business units which include SIX Swiss Exchange and the corporate functions of SIX. It is at this level that our employees need to recognize risks and weigh them up appropriately in their day-to-day work.

2. Second Line of Defense

The company-wide risk and security organization assists and supports the first line of defense which includes the exchange with the monitoring and control of critical topics. The unit is also responsible for the reporting of financial and non-financial risks.

3. Third Line of Defense

The Board of Directors of SIX and the internal and external auditors constitute the third line of defense. They are responsible for independently monitoring and controlling the risks faced by SIX and SIX Swiss Exchange.

Emergency and Outage Protocols

Emergency Communications

As a regulated exchange we are obliged to have robust mechanisms in place to communicate with both our members and the wider community for a variety of reasons such as disclosures, market suspensions and indeed outages. Our members are obligated to keep the contact details we hold about them up-to-date which ensures we have a complete list of actors who should be contacted across multiple relevant and impacted business areas. The mechanisms include Official Notices, Newsboard, Exchange Messages and Press Releases and are publicly available on our website. These mechanisms have proven to be robust and effective.

Written and publicly available Emergency Communication includes the following information:

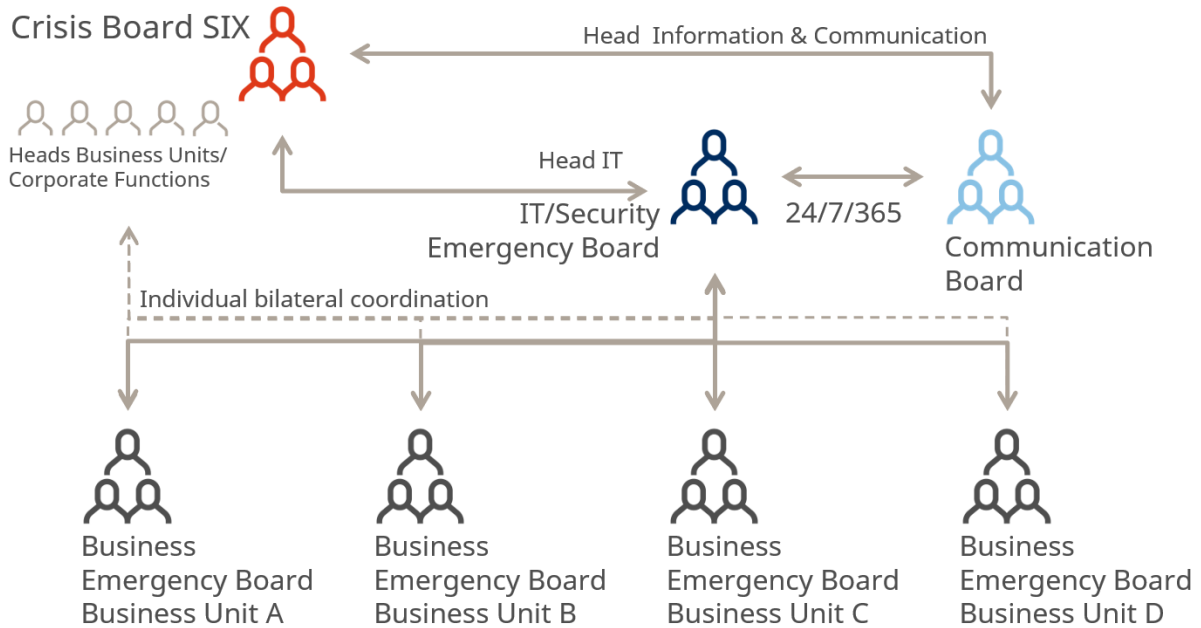
- Subject
- Message ID
- Broadcast time
- Priority
- Markets
- Products
- Problem description
- If available: expected resolution time
- Next update time
- If solved: market reopen time

Our internal business continuity team manages events such as outages and these individuals are dedicated and designated as part of our normal BCM planning activities so are fully aware of the requirements and processes in such events.

Our member-facing teams have dedicated contact details publicly available and will face off to members in the event of outages and other day-to-day issues that arise.

Calls with members would be facilitated by our relationship management teams to ensure they remain informed and can be part of the dialogue as we move through an event. The messages we would publish/discuss would be centrally coordinated by our BCM team.

Emergency and Crisis Management



Q&A

<p>What is the frequency of emergency communication?</p>	<p>The communication process is defined and will adapt to the severity of the incident, its criticality at the point of occurrence and the phase in which the market is currently operating, which is assessed by the BCM team.</p> <p>We will always issue a near immediate notification to the market through our normal message channels once we become aware on an incident.</p> <p>This message would indicate the facts as we know then at that point and indicate when we would issue a follow up notification. Each subsequent notification would indicate the status and any actions necessary by participants and the expected timing of any further notifications.</p> <p>This gives participants clarity on what is happening and certainty when they will receive subsequent updates.</p> <p>Once we have certainty of the situation and clarity when the market will re-open, we will inform participants of the expected timing in advance. This would then be followed by a subsequent confirmation notification. This means that participants would have clarity on timing and sufficient advance notification in which to prepare.</p>
<p>Does SIX Swiss Exchange provide information about the seriousness of an outage or issue?</p>	<p>Yes, our notifications will indicate the severity of the issue and the likely response time to remediate once this is clear.</p>
<p>Does SIX Swiss Exchange provide information to participants about the expected time</p>	<p>Yes, see above.</p>

until outage or issue is resolved?	
Does SIX Swiss Exchange run an open conference call line?	No, the current measures and communication channels (both written and verbal) were proven to be robust and sufficient.

Order and Trade Cancellation

Depending on the nature of the outage and the likely duration we would take the appropriate actions to protect the authenticity of the order book and mitigate the risk of uncertainty for members. We have robust protocols in place to enable members to cancel open orders and in certain circumstances to purge the order book ourselves. Any action in this area would be taken in consultation with our BCM team and members would be fully informed.

In the event that the incident resulted in executions which were not orderly we have measures within the exchange Rule Book; Directive 4: [Market Control Paragraph 6](#) to declare them void. If there were execution messages which had not yet been notified to members we would take the appropriate measures to inform them as soon as the data was available and robust.

Q&A

In case of an outage, are all orders cancelled and are participants informed? Do rules apply equally to all the trading interfaces: STI, OTI and QTI?	In case of a serious incident or an outage, no messages are generated on STI/OTI/QTI because either the engine is down (no message possible) or the consistent state is not guaranteed and so some users might get different messages which we avoid. As soon as the system is available, all users on all interfaces get an accurate snapshot of the new state of the market. All the detailed information about this is included in various sections of the SWXess Business Recovery Guide for Participants available on the Member Section https://secure.six-swiss-exchange.com/member_section/login.html File name: SWX-RECV-MAN-GUID600E.pdf
What happens to orders submitted during an outage?	During an outage no order entry is permitted until the system is available and all users have a consistent snapshot. The system always starts in order maintenance mode - not matching mode. Further detailed information on this is included in various sections of the SWXess Business Recovery Guide for Participants available on the Member Section https://secure.six-swiss-exchange.com/member_section/login.html

	File name SWX-RECV-MAN-GUID600E.pdf
Following an outage, would the exchange review any trades prior to the emergency event and consider their cancellation?	<p>Yes, there's no difference to our procedure or our judgement if a trade is wrong either during normal trading conditions or during an outage. Our mistrade regime is valid at any time. Trades outside the normal price control mechanisms will always be bust.</p> <p>The determination of the benchmark- and band-levels for the fair price always lies at the discretion of Market Control, under the conditions within our Rules & Regulations which aim to safeguarding market integrity, investor protection and equal treatment. This includes exceptional situations.</p> <p>More details can be found in public documents: Directive 4: Market Control Directive 3: Trading, under Paragraph 13</p>
How does the exchange proceed, when during an incident a subset of trading participants are unable to access the market?	<p>If a number of participants are unable to access the exchange, which would challenge market integrity due to a loss of liquidity or order book depth, we would evaluate, on a case by case basis. This could result in the need to halt the market until the conditions are back to normal and a review of any trade executions performed in that period violate the price control mechanisms.</p>

Market re-open

Depending on the severity, nature and duration of the incident we would keep members informed of the likely resumption timelines and would always give members a reasonable time window in which to prepare for the resumption of trading. As explained above our notifications would always indicate expected timings and expected resumption times in advance. If the market remained closed for an extended period, then the last available reference price would remain the valid reference price for the securities impacted.

Q&A

Following an outage, would the exchange reopen at a round increment?	<p>Depending on the nature and severity of the incident we would seek to restore the market in an orderly and controlled manner, whilst aiming to minimize the outage duration unnecessarily. There is no strict rule on timing and we would aim to be flexible whilst giving the market sufficient notification prior to reopening.</p>
Following an outage, would the exchange consult with market participants on whether to re-open and at what time?	<p>The exchange would be in contact with market participants and assess their readiness. The decision if and when to reopen will however always rest solely with the exchange.</p>

<p>In case the market cannot reopen for the day, what constitutes the reference price? Is it always the last traded price?</p>	<p>The current last trade price is used as the reference and if the market remained closed for an extended period the last available reference price would remain the valid reference price for the securities impacted.</p> <p>For detailed regime and differences between market making and non-market making segments please see: Directive 03: Trading, paragraph 14</p>
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Further Information

Security is our business: [Link](#)

Corporate Responsibility Report: [Link](#)

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