Virtu Europe Trading Limited

POSIT MTF Outage Plan

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1 Introduction

1.1 Overview

POSIT MTF EU ("POSIT") is operated by Virtu Europe Trading Limited ("VETL", the "Firm")).

This document provides trading participants with an overview on the handling of technical incidents at VETL, including the protocols on incident communication to the market, as well as an overview of internal operational procedures that are activated in the event of a technical incident.

VETL utilises stable and resilient systems and aims to minimize disruption and uncertainty for their trading participants. This is also reflected by the high average availability rates over the last 20 years.

VETL continuously improves its technology and processes with the goal to offer a robust infrastructure and, if necessary, the best incident handling possible. Trading participants have access to transparent and defined processes in case of a technical incident. MiFID II and in particular Articles 47 and 48 establish the framework defining requirements for trading venues to ensure systems resilience and orderly trading. VETL thereby adheres to and goes beyond those requirements to ensure high availability of their trading systems. VETL continuously strives for a highly resilient trading system and continuously works on improving business continuity measures to get close to a 100% availability and to keep chances of a technical incident to a minimum.

Consequently, such incidents are unlikely, but remain "plausible events" that require preparation. Where a technical incident does occur, VETL has established clear standards regarding incident communication and handling to minimize the impact and swiftly resolve the issue. By publicly communicating the standards described in this document, VETL aims to increase clarity and predictability for their trading participants regarding the operational procedures that are in place.

1.2 This Document

This playbook describes the incident communication and operational procedures at VETL :

- Firstly, VETL has established swift and transparent incident communication towards the market, which is done by way of publication of clear announcements in English with regular updates through its market status web page. Alongside trading participant communication, VETL also ensures efficient incident notification to the competent authority without any delay. The provision of the respective information to the responsible competent authority is based on well established procedures and in accordance with the legal notification obligations as per Art. 54.2 MiFID II.
- Secondly, VETL has operational procedures in case of a technical incident to ensure orderly trading and a safe reopening of the market.

This playbook is VETL's contribution to a broader industry discussion on best practices and common standards. It also considers and implements the principles within ESMA's Final Report on Market Outages.

VETL is committed to providing the best possible service and as such, is always open to improvements in addition to adapting its policies and procedures in line with technological progress.

Although the operational procedures followed during an incident may vary according to the incident's nature and complexity, these procedures are intended to provide a greater level of transparency and certainty to participants on how VETL will manage an incident.

2 Incident Prevention

2.1 Trading System Resilience

The core of the Firm's strategy is ensuring that POSIT has a high level of availability realized through the platform's architecture and physical hosting infrastructure (datacenter). The objective is to ensure that the platform can continue operating in the event that components of the infrastructure fail or falter. POSIT has been operating in Europe since 1989 and has never experienced a full day outage.

The datacenter has an average uptime of >99.999%. At the core of the high availability approach is a multi node architecture.

Each node is a discreet instance of POSIT and each has the full universe of securities loaded for the respective POSIT instance. Each node has the capacity to handle the entire load for the POSIT instance. In practice, POSIT load balances across the multiple nodes using 'routing rules'. This serves two purposes, the first is load balancing (capacity management) and the second ensures that all 4 nodes are live and operational with each node providing a hot standby to the other nodes, should they fail.

POSIT cannot operate without market data and therefore the market data infrastructure is of critical importance. The market data infrastructure is highly resilient, distributed across a primary and secondary physical site infrastructure, with a hot-hot fall back across both sites. The POSIT Price Servers, which consume the market data in each stack of the POSIT Nodes point to both sites.

Within our datacentre infrastructure, the policy is to remove single points of failure. Therefore the POSIT servers are distributed across multiple cabinets with each cabinet having multiple power supply and multiple switches (the component that connects all the cabinets and servers to the underlying network infrastructure).

The final key element is connectivity to participants. Connectivity is via infrastructure that follows the same principles as POSIT, with multiple nodes supporting both load balancing (capacity and latency) and with each node able to fall back to any of the other nodes.

2.2 Trading System Monitoring

The system is monitored by a dedicated support team. This team monitors the POSIT infrastructure when the system is operational in addition to ensuring systems are safe for the open and ensuring the systems handle the close correctly. The support team ensure the good health of the matching engine, the market data feeds, participant connections, regulatory reporting and all key components of the POSIT infrastructure.

3 Venue Outage

3.1 POSIT Outage Plan/Framework

3.1.1 Alerting Phase

1. When a potential outage incident occurs, VETL assesses its severity, which may trigger a serious incident event. In case of doubt, incidents are considered as serious incidents until more information is available.
2. When a serious incident is triggered, VETL will immediately convene a meeting of the relevant teams ("Incident Response Team", "IRT") to discuss the impact and severity of the incident, in addition to discussing next steps.
3. The initial assessment framework is based on the 'Issue, Impact, Risk ETA, Actions' approach.

3.1.2 Response Phase

The IRT ensures that a robust assessment takes place and looks to consider at least the following considerations:

1. Assessment of impacted infrastructure components, instruments, services, markets, POSIT segments and participants.
2. Assessment of technical impact and the critical IT system(s) involved, with estimated time to repair.
3. Assessment of business and regulatory impact .
4. Initial determination of potential downtime and time to recovery.
5. Immediate recommendation on how to update the market status web page.
6. Identification, validation and implementation of solutions.
7. Initiate communications processes to participants, regulators and any other stakeholders.
8. If required, initiation of crisis management / Business Continuity Management processes.
9. Identification and implementation of technical recovery solution(s).
10. Identification of root cause and application of permanent fixes.

3.2 Treatment of Incoming/Existing Orders

Depending on the impact and severity of the technical issue:

1. VETL will suspend matching while rejecting new incoming orders while allowing Cancels ; or
2. VETL will purge all existing orders in the event of an outage. It will furthermore reject any orders while the outage persists.

This will be communicated to participants via the market status web page.

3.3 Communication Protocols and Principles

The following lists the communication protocols that VETL will follow:

1. After discovery of a wide-ranging service degradation, it will be promptly reported via the market status web page.

2. The market status web page will be updated every 30 minutes thereafter (even if the situation remains unchanged), together with next steps for incident resolution and/or any other additional information or instructions.
3. VETL has dedicated staff as contact points, which are listed in the 'Contacts' section of this document.
4. The treatment of incoming and existing orders shall be communicated to participants via the market status web page.

3.4 Primary Market Data Outage

POSIT segment matching engines are reliant on market data from the primary listing venue. POSIT has inbuilt redundancy if particular market data feeds are down.

However, if the primary venue's feed is completely down, POSIT will no longer facilitate matches in the related instruments.

In this case, POSIT will treat the incident as an outage and will inform participants as soon as possible via the market status web page. As such an issue is not related to POSIT infrastructure, a meeting of the IRT is not necessarily required.

POSIT will facilitate matching as soon as the primary market data feeds are available and are safe to use.

4 Reopening Strategy

4.1 Restoration of Service

In the event of a major POSIT outage, once POSIT is satisfied it can restore service in a safe and orderly manner, it will communicate a status update and a re-opening time to participants 15 minutes prior to re-opening, detailing the planned re-opening time.

All segments resume service as per normal continuous trading conditions.

If trades have been executed under improper conditions at any stage, a participant may request to cancel such trades. This request will be assessed at the operators discretion as per Rule 8(i) of the POSIT Rulebook.

5 Contacts

Team	Email Distro	Phone Number
POSIT Support	emea-support-asd@virtu.com	+353 1 6338025
Compliance Team	compliance-eu-reports@virtu.com	+353 1 2466913

Market Status Page : https://www.virtu.com/market-status/