Customer Dress Rehearsal

Customer Dress Rehearsal

28 September 2019

5 October 2019

London Stock Exchange Group

Customer Dress Rehearsal

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1.0 Introduction

1.1 Scope

The purpose of this document is to describe the activities that will take place on **Saturday 28th September 2019 and Saturday 5th October 2019** during the 1st and 2nd Customer Dress Rehearsals scheduled for the **Millennium IT hardware refresh** project.

During the test both **Millennium IT and SOLA (including HSVF) trading platforms and GTP/GTPLite market data service will be available**. Customer are reminded that **MITCH service will be decommissioned** and will not be available during the CDRs.

The scope of the Disaster Recovery Test is to verify that all participants' applications can correctly connect to both Millennium IT and SOLA platforms, perform trading activities and receive market data.

During the test a **SDC invocation (Disaster Recovery)** will be simulated for Borsa Italiana MTA, MIV, AIM Italia-MAC, BIt GEM, MOT, ExtraMOT, ETFPlus, SeDeX and TAH markets and EuroTLX market running on the MIT platform, the IDEM, IDEX and AGREX markets running on the SOLA platform.

All participants are required to double check their logon procedures for all the enabled User IDs to both Primary Data Centre (until DR invocation) and Secondary Data Centre (after DR invocation), and to enter/amend/delete orders and quotes (single/double) and execute trades on both instances.

The scope of the Disaster Recovery Test is to verify the new failover mechanism (SDC invocation) with particular reference to Millennium IT platform. In fact together with the hardware refresh MIT platform for Borsa and EuroTLX markets will be configured according to the active-passive failover mechanism (SDC will not be always active and aligned in real time as it happens today but it will be activated just in case of failure of the PDC).

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1.2 Acronyms

In the document the following acronyms are used:

Acronym	Definition
CDR	Customer Dress Rehearsal
BCS	Bit Clearing Station
BTS®	Bit Trading Station
GTP	Group Ticker Plant
MIT	Millennium IT
TPS	Transactions per Second

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2.0 Trading Date and Available Instruments

The trading date for the CDRs will be set to:

- **Saturday 28th September 2019** for the first CDR

- **Saturday 5th October 2019** for the second CDR

For the **first CDR (28 September 2019)**:

- The MIT 305 reference data files for MIT markets will be dated **Saturday 28th September 2019**, and the instruments available will be the ones configured for the trading session of **Monday, 30th September 2019**
- for SOLA markets, the instruments available will be the ones configured for the trading session of **Monday, 30th September 2019**

For the **second CDR (5 October 2019)**:

- The MIT 305 reference data files for MIT markets will be dated **Saturday 5th October 2019**, and the instruments available will be the ones configured for the trading session of **Monday, 7th October 2019**
- for SOLA markets, the instruments available will be the ones configured for the trading session of **Monday, 7th October 2019**

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3.0   Test Overview

All market participants are required to logon to MIT, SOLA and to GTP/GTPLite/HSVF data feed services from all relevant applications.

The test is performed in the production environment and the services involved are:

- **MIT platform** for the MTA, MIV, AIM Italia-MAC, BIt GEM, MOT, ExtraMOT, ETFPlus, SeDeX, TAH and EuroTLX markets:
  - Native Trading Gateway
  - FIX Trading Gateway
  - Drop Copy Gateway
  - Post Trade Gateway
- **SOLA** (including SAIL, FIX and HSVF) platform for IDEM, AGREX and IDEX
- **GTP**
- **GTP Lite**
- **FTP reference data services**
- **BTS®: make sure to install the most updated version available on the website at the link** http://www.borsaitaliana.it/borsaitaliana/gestione-mercati/bts-bittradingstation/bts.en.htm
- **BCS** (Bit Clearign Station)

All trades executed during the test session will not be sent to the settlement systems and **will be cancelled at the end of the test** (trades executed on the derivatives markets will be visible on BCS during the test and cancelled right after).

Please note that the Trayport service is out of scope.

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4.0 Before the Test

The test will be performed in the standard production environment, customers will log in to production systems using the credentials already live in production environment for the relevant service. However, before the CDR customers are invited to test the connectivity in terms of successful telnets to both the Primary Data Centre and the Secondary Data Centre IP addresses. In particular:

- **Millennium IT production** (Primary and Disaster Recovery) IP addresses are listed:

  o for Borsa Italiana, in the MIT701 (TAH market) and MIT702 (main markets) documents available at:

     http://www.borsaitaliana.it/borsaitaliana/gestione-mercati/migrazionemillenniumit-mit/millenniumitmigration.en.htm

  o for EuroTLX, in the MIT701 document available at:
     https://www.eurotlx.com/en/manualsandtechnicaldocumentation

  We remind you that **MITCH service will be decommissioned** and will not be available during the CDR (during the CDR the market data feed for Borsa markets which run on MIT platform and EuroTLX will be available via GTP/GTPLite service only).

- **SOLA production** (Primary and Disaster Recovery) IP addresses are listed in the SOLA Connectivity guide available at:

  o http://www.borsaitaliana.it/borsaitaliana/gestione-mercati/migrazioneidem/migrazioneidem.en.htm

  SOLA SDC (Disaster Recovery) IP addresses are available for telnet (not login) during standard market hours.

- **GTP production** (A and B feed) IP addresses are available in the GTP004 published at:

  o http://www.londonstockexchange.com/products-and-services/millennium-exchange/documentation/documentation.htm

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Important: A and B feed are always disseminated. GTP B feed Reply and Recovery services are available only in case of failure of primary (A feed) ones.

C feed (tertiary feed) of GTP service will be decommissioned.

Customers are kindly reminded that:

- the Technical Documentation of **MIT Platform for Borsa markets** is available at the following link:

  http://www.borsaitaliana.it/borsaitaliana/gestione-mercati/migrazionemillenniumit-mit/millenniumitmigration.en.htm

- the Technical Documentation of **MIT Platform for EuroTLX market** is available at the following link:

  https://www.eurotlx.com/en/CDS_environment

- the Technical Documentation of the **SOLA platform** is available at the following link:

  http://www.borsaitaliana.it/borsaitaliana/gestione-mercati/migrazioneidem/migrazioneidem.en.htm

- the Technical Documentation of the **GTP service** is available at the following link:

  https://www.lseg.com/areas-expertise/technology/group-technology/group-ticker-plant

We remind you that the production IP addresses and ports of existing services will not differ from the ones currently in production and you have to connect to the same IP addresses and ports used to connect to the production environment during normal trading days.

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5.0 During the test

Customers are required to logon in the Primary Data Centre from all users for both Trading and Market Data Feed services. During the test in PDC customers shall perform the following activities:

- **Login Procedures**:
  - Connect to MIT and SOLA platforms with all configured Comp IDs/SOLA Users
  - Connect to GTP and GTP Lite services with all configured Users
  - Connect to HSVF
- **Trading and Quoting activities**:
  - Enter / Modify / Cancel Orders
  - Manage Trades
  - Enter Quotes
  - Delete Quotes
- **Market Data Feed reception**: check correct reception of real time feed (orders, trades and instrument status updates)

After the SDC invocation customer will be required to connect to the Secondary Data Centre with the same Comp IDs/Users previously connected to PDC and perform the same kind of market activity done while connected to the Primary Data Centre.

Customers should consider that:

- On **MIT Platform** once the Disaster Recovery Site is active all orders and quotes will be cancelled and the trading system will be re-started. Participants should note that no updated Execution Reports will be sent identifying those orders cancelled together with the activation of the DR site. All instruments will be reinstated in an auction call state. Instruments for which this is not applicable will be reinstated to a Pre-Mandatory Trading Session.

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Following recovery to the Disaster Recovery Site it is recommended for all participants to:

o execute an Own Trade Download to confirm which trades have been sent to clearing and settlement

o execute an Own Order Book Download to confirm that no orders are currently active

Once the Disaster Recovery Site is active all FIX message sequence numbers will be reset to 1 on the Exchange FIX Gateways. Customers must also reset their outgoing sequence numbers to 1 before reconnecting to Disaster Recovery Site

- on **SOLA Platform** once connected to SDC customer should execute and verify trades reception via BCS without detecting orders, quotes and trade numbers duplication (see details in Appendix 1). All trades executed during the test session will be available for customers via BCS GUI and BCS API.

- On **GTP service** following the Disaster recovery invocation:

o Feed B will be available in SDC and will be broadcasted in lower case.

o Customers should expect to experience a reset of message sequence numbers to one

Customers are reminded that the **C feed will be decommissioned**.

5.1 Orders Injection

During the test, orders will be artificially injected on a subset of instruments of MTA, ETFPlus, MOT, SeDeX, EuroTLX and IDEM markets in order to animate trading during the Continuous Trading session.

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5.2 High Volume Session

For 30 minutes between 11:00 and 11:30 CEST, an **High Volume Session** will take place on the market. During the session, an high volume of orders will be artificially injected on the market.

Details of the session are described below:

- a **background load** will be generated as follows:
    - 1.000 TPS on MTA
    - 3.000 TPS on ETF+
    - 1.000 TPS on MOT and SeDeX
    - 1.000 TPS on EuroTLX
    - 3.000 TPS on IDEM

- During the first minute of the High Volume Session, randomically for 1 or 2 seconds, a **peak volume** will be generated as follows:
    - 2.000 TPS on MTA
    - 8.000 TPS on ETF+
    - 5.000 TPS on MOT and SeDeX
    - 3.000 TPS on EuroTLX
    - 10.000 TPS on IDEM

- The **peak volume** (for each market mentioned above) will be generated **every minute** of the High Volume Session, each time with a quantity of the peak increased by 10% for a total of 5 times (5 minutes).

- The entire cycle will be repeated at least **2 times** during the High Volume Session.

Customers are asked to communicate to the Customer Relationship Management Technology team (Clients-Services@borsaitaliana.it) any problem in managing high volume data.

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6.0   At the end of the test

At the end of the test session, participants are required to implement all the actions required in order to have the system ready for the trading activity the following Monday.

7.0   Session timetable

The test will follow the standard market trading hours. A specific time window will be dedicated to the **High Volume Session** and to the **SDC invocation** as indicated below.

Start Time	End Time	Phase
8:30	N/A	Borsa Support available (market already in opening auction phase where applicable)
9:00	N/A	Borsa markets in Continuous Trading phase in **PDC**
11:00	11:30	**High Volume session**
12:00	14:00	**SDC invocation** and restore activities in SDC
14:00	15:00	Trading activity available in SDC
15:00	N/A	**End of the test**

Above times are in CEST (Central European Time, that is UTC+2, GMT+2 and BST+1).

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8.0   Test Results Confirmation

At the end of the test session, Customers are required to confirm the success of their day's testing with regard to:

- Logon procedures (both PDC and SDC)

- Trading and Market Making standard activity (both PDC and SDC)

- Clearing activities (if performed)

The preferred approach is for customers to send an email to clients-services@borsaitaliana.it (customers of EuroTLX are kindly requested to include also supervision@eurotlx.com).

9.0   Customer Support

During the test session participants can contact the Borsa Italiana **Service Desk** for assistance:

> Toll Free: 0080026772000

> From mobile: +39 02 45411399

> email: service-desk@borsaitaliana.it

The **Customer Relationship Management Technology** team will also be on hand for any query:

> +39 02 72 42 6 512

> Clients-Services@borsaitaliana.it

Live updates on the Dress Rehearsal will be published on the Borsa Italiana website at the following link:

http://www.borsaitaliana.it/borsaitaliana/gestione-mercati/comunicazionitecniche/comunicazionitecniche.en.htm

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Support is available until 3:30 pm CEST.

10.0 Appendix 1 – SOLA and BCS Recovery Procedures

- Clients of the BCS clearing services (API and GUI), at the end of Phase 1 (connection to PDC) should logoff and logon again for test Phase 2 (SDC invocation). Trades executed before the restart of the service in Phase 1 will be available and could be downloaded during Phase 2

- An offset in the ContractNumber field of the NotifyContract/ NotifyContractByTime API layouts will be applied to trades executed before the disaster recovery. Any split trades will maintain the original contract number; in the GUI application this will be displayed in the Trades >Trades List window

- The ContractNumber field of the trades executed after the disaster recovery will restart from scratch. In order to avoid ContractNumber duplication in their data storage, customers should reset trades data related to the Phase 1 session, and submit again the related queries for the trades downloading, in order to properly manage the data realignment.

- The MarketContractNumber and OrderNumber fields of the NotifyContract/NotifyContractByTime API layouts of the trades executed before the restart will remain unchanged

- An offset to the MarketContractNumber and OrderNumber fields of the trades executed after the restart will be applied automatically by SOLA trading engine. The offset will be different from the one applied to the ContractNumber field for trades executed before the restart

- All BCS functionalities will be available as usual