

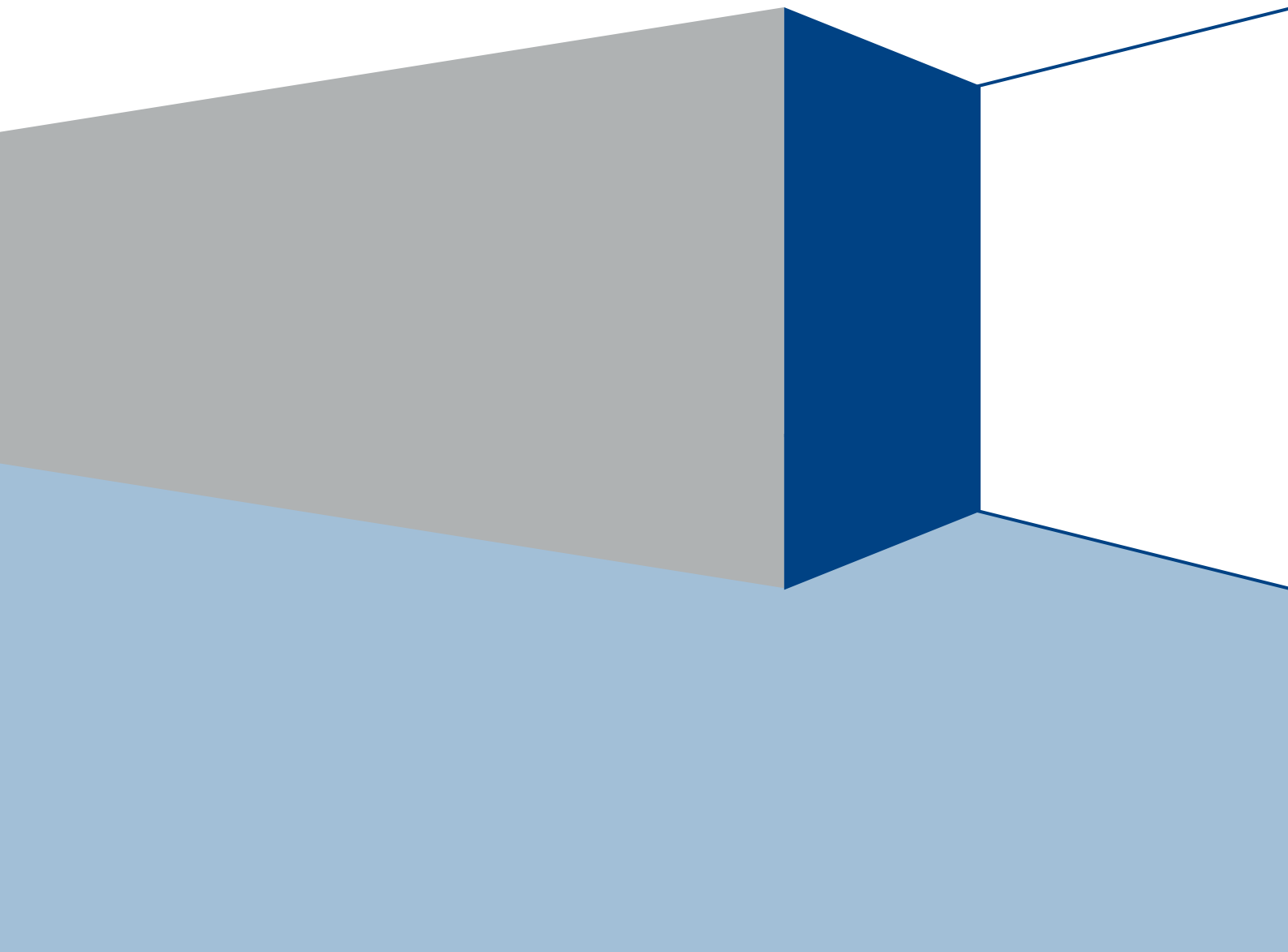


London
Stock Exchange Group

OSLO BØRS CASH EQUITY AND FIXED INCOME MARKET
MIGRATION TO TRADELECT

Mandatory Customer Dress Rehearsals Guide

Saturday 12 December 2009
Saturday 16 January 2010
Saturday 30 January 2010



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1. Introduction

As part of their commitment to providing world-leading execution services Oslo Børs has formed a strategic partnership with the London Stock Exchange Group (“the Group”). This will see the migration of the cash equities and fixed income markets to the TradElect platform with Infolect used for market data distribution.

The purpose of this document is to describe the mandatory dress rehearsal activities that will take place on **Saturday 12 December 2009, 16 January 2010** and **30 January 2010**. Further documentation for ‘go live’ activities will be published nearer the time.

1.1 Version Control

Version No.	Description	Date
1.0	Published	November 2009

2. Test overview

Customers are required to logon with a minimum of 1 trading and 1 information connection per software used and to test all Trader Groups planned for use in production.

Both Oslo Børs and the Group recommends that customers test with their full production ‘go live’ configuration of enablements and connections during all dress rehearsals. However, reconfiguration of test servers/applications to mirror production configuration for participation in the dress rehearsals is permissible.

Members trading in both equity and fixed income markets are expected to perform functional testing in both markets. In addition, primary dealers and Norges Bank are expected to participate in issuing auctions and buy back auctions.

During the test session customers are required to perform the following activities:

- verify connectivity to the TradElect trading system and the correct logon to the Oslo cash and equity markets with a minimum of 1 trading connection per software used
- verify connectivity and logon to Infolect with a minimum of 1 USAP per software used
- verify the correctness of the main trading functions provided through proprietary or third party software applications
- verify the correct message handling of the market data feeds through Infolect

At the end of the test session, customers are required to:

- restore/rollback their software applications back to the previous production versions if required
- where applicable, restore servers/applications back to test configuration for connectivity to CDS
- confirm via email that testing has been successful, (see section 2.8)

We would like to remind all members of their responsibility for the correct operation of their applications after any roll forward/rollback procedure and should satisfy themselves at the end of the dress rehearsal that they are ready to commence trading as normal on the next trading day.

Members will be able to view a real-time schedule on the day's activities on the following website:

<http://www.londonstockexchange.com/weekendactivitymonitor/>

In advance of each test, members are requested to contact Oslo Børs to confirm their attendance and contact details for each software instance (i.e. email, phone (landline and mobile), software represented).

2.1 Pre-rehearsal Activities

Before the dress rehearsals, members are requested to have completed all appropriate testing where necessary:

- Conformance testing on TradElect and/or Infolect if required
- General Customer Development Service (CDS) testing covering trading, market data and post trading checks
- Production enablement setup

- Technical network, application and hardware changes, (see Appendix A for production IP address details)
- ISVs to distribute the appropriate software and instructions to members

Members are also requested to familiarise themselves with related documentation for the Oslo Børs cash equities and fixed income market migration to TradElect. Website links can be found in section 2.9.

Members will receive Idle Polls and Reference Data on the G01-G15 Service Channels prior to each dress rehearsal. However, Telnet or other TCP connectivity will not be available until the day of the rehearsal.

Members already connecting to TradElect for existing markets (London, Borsa Italiana and JSE) should be aware that GTD/GTT (Good Till Date/Good Till Time) order cancellation/expiry messages sent on the morning of the dress rehearsals should be ignored, as all these orders will then be restored automatically for the next trading day.

2.2 Market Data

Reference Data will be sent out at the start of each dress rehearsal to aid customer testing.

Oslo Indices will be available during the dress rehearsals and messages will be disseminated via the G13 Service Channel. Oslo News messages will also be available and messages will be disseminated via the G12 Service Channel.

2.3 Reference Prices

All instruments will have their reference prices set to the prices of the previous day as per a normal trading day. This is to ensure that realistic prices are entered by the members during the test session.

Closing prices for equity segments only will be disseminated via Infolect after Friday market close ahead of each dress rehearsal.

2.4 Session Timetable

All times are in Central European Time (CET).

	Start	End
TradElect Connectivity	09:00	16:00
Infolect Connectivity	09:00	16:00
Infolect Reference Data (including line block at 10:10 to test re-requesting)	10:00	10:45
TradElect Functional Testing	11:00	16:00
TradElect High Volume Period	12:00	12.30

The above schedule of information will be updated in real-time during all dress rehearsals via:

<http://www.londonstockexchange.com/weekendactivitymonitor/>

2.5 Market Period Schedules

Please find in Appendix B the business schedules to be followed for all the dress rehearsals.

Any orders remaining on the order book at the end of the dress rehearsals will not be deleted by the Exchange but will be cleared down at the end of the day.

2.6 Test Requirements

As a minimum, members should carry out the following:

Logon procedure

- Connect each trading application to TradElect Secure (SI) Trading Interface using a minimum of 1 connection per software used
- Connect each market data application to the Infolect Interactive (II) using a minimum of 1 USAP per software used

Trading activity (If supported)

The following types of messages are to be performed a **minimum of 5 times** per message:

- Enter Orders (different market mechanism and order types ('P' and 'A' capacity, where applicable))
- Modify Orders (including: size, price, date and time validity, participant reference, client reference)
- Cancel Orders ('P' and 'A' capacity, where applicable)
- Enter Trade Report (Single sided only for equity members, single sided and dual sided for fixed income members)
- Own Order Book Download (optional, minimum of 1 message)
- Own Trades Book Download (optional, minimum of 1 message)
- Check all other appropriate ISV/Software trading functionality

In addition to the above customer test activities, Oslo Børs will undertake the following activities:

- Halt and resume individual instruments
- Halt and resume multiple instruments
- Amend a closing price for an equity instrument
- Perform instrument trading period changes
- Customer order deletions (individual or multiple) in conjunction with customer approval
- Customer execution and trade report deletions (individual or multiple) in conjunction with customer approval

Market data dissemination and re-request activity

- Check receipt of reference data
- Check receipt of real time market data (orders and prices)
- Check all appropriate ISV/Software market data functionality
- Infolect Re-request (minimum of 1 message re-requested, will be prompted by line block during reference data dissemination or customer logging on afterwards)
- Check all appropriate ISV/Software market data functionality

Rollback procedures

- Logout each trading application from TradElect and Infolect
- Restore/rollback production trading application version and data
- Where applicable, re-configure servers/applications for connection to CDS environment.

2.7 High Volume Input Period

All dress rehearsals will include a high volume input period. Members are requested to enter high volumes of trading messages into TradElect during this period. Please refer to the session timetable for period timings.

2.8 Test Results Confirmation

At the end of each test session, customers are required to confirm the success of their day's testing. The preferred approach is to send an email to: technicalsupport@oslobors.no confirming all connectivity and functional testing for the migration was completed successfully.

Customers are requested to include confirmation of their readiness for the next trading day's activities following successful rollback testing (where applicable).

In addition, for the final dress rehearsal only, customers are required to confirm in the same email, their readiness to go live.

2.9 Customer Support / Further Information

During the dress rehearsals, customers should contact the Oslo Børs Service Desk on: +47 2234 1818 or technicalsupport@oslobors.no for technical assistance from 09:00 (CET).

Further information specific to the Oslo Børs markets' migration to TradElect (including the FIX 5.0 Interface Service and Technical Description, the Oslo Børs Market Configuration Matrix and the FIX Conformance Test Tool (FCTT) guide) can be found at both the Oslo Børs and the Group's websites at the following links:

http://www.obvps.no/obvps_eng/Frontpage/Delta

<http://www.londonstockexchange.com/techguidenotes>

Appendix A - Interactive Gateway/Multicast IP Addresses

Interactive Gateway Addressing PROD				
Service Code	Service Description	Exchange IP Address	Port	CompID
FX1	Oslo FIX Secure Interactive	194.169.13.12	61160	LSE001
FX2	Oslo FIX Message Retrieval Service / Own Order Book Download / Own Trades Book Download	194.169.13.27	62260	LSE001
T01	Oslo Native (<i>Legacy</i>) Message Retrieval Service / Own Order Book Download / Own Trades Book Download	194.169.13.25	62200	
T02	Oslo Native (<i>Legacy</i>) Secure Interactive	194.169.13.10	61100	
T03	Oslo Native (<i>Standard</i>) Message Retrieval Service / Own Order Book Download / Own Trades Book Download	194.169.13.25	62200	
T04	Oslo Native (<i>Standard</i>) Secure Interactive	194.169.13.10	61100	
T05	Oslo Native (<i>New</i>) Message Retrieval Service / Own Order Book Download / Own Trades Book Download	194.169.13.25	62200	
T06	Oslo Native (<i>New</i>) Secure Interactive	194.169.13.10	61100	

Multicast Addressing PROD				
Oslo Service Channel	Description	Multicast IP Address	Port	Multicast Source Address
G01	Oslo Equities - Level 1	224.4.6.1	60000	194.169.13.80
G02	Oslo Equities - Level 2	224.4.6.2	60000	194.169.13.80
G03	Oslo Equities (Instrument) Reference Data	224.4.6.3	60000	194.169.13.80
G04	Oslo Fixed Income - Level 1	224.4.6.4	60000	194.169.13.80
G05	Oslo Fixed Income - Level 2	224.4.6.5	60000	194.169.13.80
G06	Oslo Fixed Income (Instrument) Reference Data	224.4.6.6	60000	194.169.13.80
G07	Oslo Warrants - Level 1	224.4.6.7	60000	194.169.13.80
G08	Oslo Warrants - Level 2	224.4.6.8	60000	194.169.13.80
G09	Oslo Warrants (Instrument) Reference Data	224.4.6.9	60000	194.169.13.80
G10	Oslo Market Status Indicators	224.4.6.10	60000	194.169.13.80
G11	Oslo Market Reference Data	224.4.6.11	60000	194.169.13.80
G12	Oslo News	224.4.6.12	60000	194.169.13.80
G13	Oslo Indices	224.4.6.13	60000	194.169.13.80
G14	Government Bond Restricted Auction Level 1	224.4.6.14	60000	194.169.13.80
G15	Government Bond Restricted Auction Level 2	224.4.6.15	60000	194.169.13.80

Appendix B - Period Schedule For All Dress Rehearsals

Please note that all times are in CET.

Equities:

The following will be applicable for all equity segments:

Start Time	Market Activity
11:00	Start order entry/maintenance. System open for manual trade reports
11:15	Opening auction
15:00	End of continuous trading
15:05	Closing auction
15:30	Stop trade reporting/publishing service/order deletion
15:30	Order expiry end time

Fixed income:

The following will be applicable for fixed income segments:

Market Activity	Segments			
	OBAU	OBOC	OABM,	OBTM, OABT
Start order entry/maintenance. System open for manual trade reports	11:00	11:00	11:15	11:15
Start BBO	11:05	11:05	11:15	11:15
Opening auction	11:15	11:15	N/A	N/A
Closing auction	N/A	14:59	N/A	N/A
End of continuous trading	15:00	15:00	15:00	15:00
Stop trade reporting/publishing service/order deletion	15:00	15:00	15:00	15:00
Order expiry end time	15:00	15:00	15:00	15:00

The following will be applicable to the issuing auction (OBIA) and buy back segments (OBBA and OBUB):

Start Time	Market Activity
11:45	Order book opens for order registration by members and central bank
12:30	Order book closes for order registration by members and central bank. Order may be deleted by Oslo Børs.
12:35	Order book opens for order registration by central bank
12:40	Allocation performed
15:00	Order expiry end time



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