Market Model

Nasdaq Fixed Income Trading System

Nasdaq Nordic, Nasdaq Baltic and Nasdaq First North Bond Markets

Revision 1.0
Effective 13 October 2025

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1 General

1.1 Introduction

This document describes the market model and functionalities for trading fixed income and related instruments on the regulated markets of Nasdaq Nordic and Nasdaq Baltic as well as for the Nasdaq First North Bond Markets.

While the document has been prepared on the basis of the best information available, Nasdaq Nordic accepts no liability for decisions taken, or systems work carried out by any party, based on this document. Content of this document may also be subject to discussions and in some cases approval from relevant authorities.

While the Nasdaq Nordic Member Rules (NMR) is a legally binding document between Members and Nasdaq Nordic and the Nasdaq Baltic Member Rules (BMR) is the legally binding document between Members and Nasdaq Baltic, the purpose of this Market Model document is to provide additional guiding information for trading Members. For the sake of clarity, any additional and/or optional services provided by Nasdaq Nordic or Nasdaq Baltic without separate written agreement are governed also for the relevant parts by the Nasdaq Nordic Member Rules/Nasdaq Baltic Rules. Additional documents referenced in this documentation can be found at Nasdaq Nordic's official website.

1.2 Document History

Version	Date	Summary of Changes
1.0	May 2025	Initial document published

1.3 Definitions & Abbreviations

"BBO"	Best Bid and/or Offer
"FOK"	Fill-or-Kill
"IOC"	Immediate-or-Cancel
"GTC"	Good-till-Cancel
"GTD"	Good-till-Date
"LOC"	Limit-on-Close
"LOO"	Limit-on-Open
"MOC"	Market-on-Close
"MOO"	Market-on-Open
"Trading System"	Means the Exchange's electronic system used for fixed income trading that receives, disseminates and executes orders and quotes; and registers and report trades.
"Exchange" or "Exchanges"	Means Nasdaq Copenhagen A/S, Nasdaq Helsinki Ltd, Nasdaq Iceland hf., Nasdaq Stockholm AB, Nasdaq Tallinn AS, Nasdaq Riga AS and AB Nasdaq Vilnius, individually or jointly.
"Exchange Rules"	The Nasdaq Nordic Member Rules and the Nasdaq Baltic Member Rules, in force from time to time.
"Exchange Notice"	Notice provided by the Exchange to market participants via the Nasdaq Nordic and Baltic IT and Exchange notice subscription service.
"MiFID II"	Means Directive 2014/65/EU of the European Parliament and of the Council of 15 May 2014 on markets in financial instruments and amending Directive 2002/92/EC and Directive 2011/61/EU.
"MiFIR"	Means Regulation (EU) No 600/2014 of the European Parliament and of the Council of 15 May 2014 on markets in financial instruments and amending Regulation (EU) No 648/2012.
Nasdaq Nordic	Means Nasdaq Copenhagen A/S, Nasdaq Helsinki Ltd, Nasdaq Iceland hf. and Nasdaq Stockholm AB, either individually or jointly, as apparent from the context.
Nasdaq Baltic	Means Nasdaq Tallinn AS, Nasdaq Riga AS and AB Nasdaq Vilnius individually or jointly, as apparent from the context.

2 Products & Instruments

2.1 Market Structure & Segmentation

The Nasdaq Nordic and Nasdaq Baltic markets for fixed income consist of fixed income instruments officially listed and/or admitted to trading on the regulated markets Nasdaq Copenhagen, Nasdaq Helsinki, Nasdaq Iceland, Nasdaq Stockholm, Nasdaq Tallinn, Nasdaq Riga and Nasdaq Vilnius, as well as the multilateral trading facilities Nasdaq First North Denmark, Nasdaq First North Finland, Nasdaq First North Iceland, Nasdaq First North Estonia, Nasdaq First North Latvia and Nasdaq First North Lithuania. On these markets, it is possible to list and invest in a wide variety of fixed income products. The fixed income business is on a high level divided into these separate services:

- Regulated Market (RM)
- Multilateral Trading Facility (MTF)
- Approved Publication Arrangement (APA) for OTC publication

This Market Model only describes the services related to RM and MTF. The APA services are offered by Nasdaq Stockholm AB and are described in the separate Nasdaq APA Service Description.

The Exchanges offer electronic trading – automatic order matching and quoting – in various markets. In addition, a large part of the fixed income trading is formed through manually negotiated trades which are reported to and published by the Exchanges.

The Exchanges also conduct issuing and buy back auctions for Nasdaq Copenhagen and Nasdaq Baltic.

Depending on the configuration of the order book, trading is performed in percentage, price, yield or basis points.

The Nasdaq Nordic and Nasdaq Baltic fixed income market comprises of the following MICs:

RM/MTF	MIC
Nasdaq Copenhagen	XCSE
Nasdaq First North Denmark	FNDK
Nasdaq Stockholm	XSTO
Nasdaq First North Sweden	FNSE
Nasdaq Iceland	XICE
Nasdaq First North Iceland	FNIS
Nasdaq Helsinki	XHEL
Nasdaq First North Finland	FNFI
Nasdaq Riga	XRIS
Nasdaq First North Latvia	FNLV
Nasdaq Tallin	XTAL

Nasdaq First North Estonia	FNEE
Nasdaq Vilnius	XLIT
Nasdaq First North Lithuania	FNLT

***Table 1**: List of Exchanges and MIC codes*

Different markets can have different functionalities allowed. Some markets have continuous order matching, others have indicative quotes and thus no matching and others are set up for issuing auctions only. Furthermore, some markets have an opening auction, closing auction, both or neither.

In order to cater for the needs of different market participants and trading facilities, the same instrument can be traded on different markets with different trading characteristics.

Instruments within a market follow the same general trading hours and share holiday and half-day calendars.

Instruments within each market are then further grouped into different product segments based on product types. Furthermore, instruments are grouped into different turnover lists available via GCF.

The below tables show the different trading functionalities for each Exchange and their respective markets and product segments:

Markets with continuous matching:

RM/MTF	Market	Product segment	Opening auction	Continuous matching	Closing auction	Trade reporting allowed
Nasdaq Copenhagen	CPH Cash Bond	CPH Cash Bond trading CPH Structured Products	-	✓	-	✓
Nasdaq Stockholm	STO Retail Bond Market	STO Convertible Bonds STO Retail Bonds STO Retail Corporate Bonds STO Structured Products STO Structured Products CCY STO Structured Products NOK STO Structured Products Units STO Sustainable Products STO Tailor Made Products	✓	✓	-	✓
	STO EIM Super Benchmarks	STO EIM Super Benchmarks	-	✓	-	-
	STO Mortgage Rates	STO Mortgage Rates	-	✓	-	-
Nasdaq Helsinki	HEL Retail Bond Market	HEL Retail Structured Products HEL Structured Products Tailor Made HEL Structure Products Units	✓	✓	-	✓
Nasdaq Iceland	Iceland Cash Bond Trading	Iceland Cash Bond Trading	✓	✓	✓	✓
Nasdaq Riga	RSE Bonds Auto match	RSE Bonds Auto match	-	✓	-	✓
Nasdaq Tallin	TSE Bonds Auto match	TSE Bonds Auto match	-	✓	-	✓

Nasdaq Vilnius	VSE Bonds Auto match	VSE Bonds Auto match	-	✓	-	✓
Nasdaq First North Denmark	CPH FN Bond Market	CPH FN Bond Market	-	✓	-	✓
Nasdaq First North Sweden	STO FN Bond Market	STO FN Bond Market Institutional STO FN Bond Market Retail STO FN Bond Market Retail CCY STO FN Convertibles STO FN Structured Lev Products STO FN Sustainable Bonds STO FN Sustainable Retail Bonds	✓	✓	-	✓
Nasdaq First North Finland	HEL FN Bond Market	HEL FN Bond market HEL FN Structured Lev Products	✓	✓	-	✓
Nasdaq First North Iceland	Iceland FN Bond Market	Iceland FN Bond Market	✓	✓	✓	✓
Nasdaq First North Latvia	RSE FN Bonds Market	RSE FN Bonds Market	-	✓	-	✓
Nasdaq First North Estonia	TSE FN Bonds Market	TSE FN Bonds Market	-	✓	-	✓
Nasdaq First North Lithuania	VSE FN Bonds Market	VSE FN Bonds Market VSE FN Foreign Bonds Market	-	✓	-	✓

Table 2: *Markets with continuous matching*

Markets with Indicative Quoting:

RM/MTF	Market	Product segment	Indicative Quotes	Trade reporting allowed
Nasdaq Stockholm	STO Indicative Bond Market	STO Commercial papers STO Corporate Bonds STO Government Bonds STO Mortgage Bonds STO Municipalities STO Sustainable Bonds STO Sustainable Commercial Paper	✓	✓
		STO Other Financial Instruments STO Fixed Income Derivatives	✓	-
Nasdaq Helsinki	HEL Indicative Bond Market	HEL Government Bonds HEL Corporate Bonds HEL Convertibles HEL Sustainable Bonds	✓	✓
Nasdaq First North Denmark	CPH FN Indicative Bond Market	CPH FN Structured Products	✓	✓
Nasdaq First North Sweden	STO FN Indicative Bond Market	STO FN Tailor Made Products STO FN Transfer Market	✓	✓

Table 3: Markets with indicative Quoting

Markets configured for Issuing Auctions:

RM/MTF	Market	Product segment	Issuing Auction
Nasdaq Copenhagen	CPH Auctions	CPH Auctions CPH Standard Settlement Auctions CPH Tap Auctions CPH Buy Back Auctions	✓
Nasdaq Riga	RSE Auctions	RSE FI New Issue RSE FI New Issue Yield Non RSE Equity IPO RSE Bond IPO	✓
Nasdaq Tallin	TSE Auctions	TSE Equity Auctions TSE FI New Issue TSE FI New Issue Non TSE Bond IPO	✓
Nasdaq Vilnius	VSE Auctions	VSE FI New Issue VSE FI New Issue Non VSE Equity Public Sales VSE Equity Tender Offer VSE Bond IPO VSE Equity IPO	✓

Table 4: Markets configured for Issuing Auctions

2.2 Instrument Types

Within each market segment, the Exchanges organise trading in different types of orderbooks (instruments). Different instrument types can be seen below:

Instrument type	Bond type (MiFID II types)
Bill	Money market instrument
Certificates	Money market instrument
Bond	Sovereign
Bond	Other Public
Bond	Covered
Bond	Convertible

Bond	Other
Bond	Corporate
SDRV	Securitized Derivatives
SFPs	Structured Finance Products

***Table 5**: Instrument Types*

3 Participants & Users

3.1 Participants

Market participants on the Exchanges are members and issuers.

Members are defined in the Trading System as participants and each participant is assigned a unique MPID (Market Participant ID) code. The MPID is a mnemonic with a maximum of eight characters used by the Exchange to denote the same individual participant across their systems.

Each participant takes part in the trading activity with one or several unique participant identification codes. The Exchanges grant access to participants to trading on certain markets and products.

The individual user must possess authorization to trade as set out in Section 4.4 of the Nasdaq Nordic Member Rules and Section 4.4 in the Nasdaq Baltic Member Rules.

Exchange personnel manage information relating to participants and their users' access. Access to trading certain products or order books is granted on participant level. The users of a particular participant can be given the same rights as the participant.

The Exchange grants trading rights on participant level only and then fully inherited on user level. This means that users connected to the same participant have the same trading rights and these trading rights determine which products the user have access to trade.

The Exchange then authorizes the participant only and users will not have separate access rights registered in the Trading System. The participant itself must keep track on who should be granted access to manage orders and trade reports on its behalf in the Trading System.

Most member related issues will be handled through the Nasdaq Member Portal.

3.1.1 Instrument Access

The Exchange configures and controls members' market access in terms of allowed instruments at participant level. User and ports of the respective participant inherit the defined access without further limitation.

The Exchange typically configures access to instruments in terms of product segments.

3.2 Users

Users are traders, applications or a generic type of automated trading activity that submit orders, quotes, or trades from a participant through one or more connections (ports) to the Trading System.

Each user is assigned a "Trader ID" code and each order, quote or trade report sent to the Trading System must carry the identifier of a pre-registered user associated with the concerned MPID.

A member may associate one Trader ID with two or more participants in the case where the member uses more than one MPID.

Trading rights are given to the following user categories[1]:

[1] For more information, see NMR/BMR

- Personal Trader: The Exchange creates and assigns these codes to each authorized and registered trader as set out in the Exchange Rules.
- Generic Trader IDs: The Exchange creates and assigns these codes on request from members to generic types of automated trading activity where a registered trader is not physically entering the orders or quotes. For example, direct market access. Each generic Trader ID is in turn assigned a responsible person.

The Trading System validates that each order, quote and trade entry identify a valid trader ID or otherwise rejects the transaction. For quotes only trader ID of type Algo or Personal are valid.

Although the orders can be entered automatically to the trading system, there are always authorized personnel at the exchange member responsible for all orders.

3.2.1 On-behalf functionality

The trading system provides functionality to support on-behalf operations of orders, trade reports and one-sided auctions. On-behalf is a transaction performed by one party on behalf of another party. Transactions pertaining to on-behalf operations contain additional information about the owner of the order. For audit purposes, the identity of the participant who sends the on-behalf transaction is kept and logged by the system.

The on-behalf function is available, and configurable, on the following levels:

- Between participants
  - A participant can be granted the right to do on-behalf orders and trade reports for another participant.
- For Nasdaq on-behalf participant user
  - Nasdaq may be authorized to create and utilize on-behalf participant user in order to initiate one-sided auctions on-behalf of participant which is facing technical or user rights issues[2]. Authorization shall be provided to Nasdaq in written form and the specific order of procedures of relevant Exchange.

3.2.2 Market making

Market makers and Liquidity Providers that pursue a market making strategy with the trading venue that takes place during half of the trading days over a one month period where they post firm, simultaneous two-way quotes of comparable size and competitive prices and deal on their own account in at least one financial instrument on the Exchange for at least 50% of the daily trading hours of continuous trading excluding opening and closing auctions, will need to have a market marker agreement with the Exchange. The market maker is responsible for contacting the Exchange and manages the agreements through the Member Portal when it fulfills the market maker requirements to set-up the written agreement for every ISIN concerned.

3.3 Ports

Ports refer to electronic connections through which traders access and interact with the Trading System.

[2] Applicable to the Baltic Exchanges (Riga, Vilnius, Tallin) and Nasdaq Copenhagen only.

There are two types of ports:

FIX Port: Order and trade entry port used for the Trading System via the FIX protocol.

FIX Drop Port: Drop copy port for subscribing to order and/or trade copies via the FIX protocol.

The Exchange creates ports on request by members and each port is associated with one participant. Several users at one member may use the same port if they are associated with the same MPID.

4 Interfaces

4.1 Trading Interfaces

All trading functionalities are supported on the FIX protocol.

4.2 Market & Reference Data Feeds

The trading system disseminates market and reference data via the ITCH feed.

Additionally, market and reference data from the trading system is available via GCF (Genium Consolidated Feed).

For detailed information on the different interfaces, please refer to the respective protocol specification available at the technical information web page.

Information	ITCH	GCF
Order and Quote level data	✓	✓
Price Level Aggregated Data	-	✓
Net Order Imbalance Indicator (NOII)	✓	✓
Issuing Auctions (only open)	✓	✓
Order Book Trades	✓ (executions)	✓ (trade details)
Reported Exchange Trades	✓	✓
Trade Cancels/Corrections	✓	✓
Trade Statistics	-	✓
Order Book Status	✓	✓
Market Conditions	✓	✓
Instrument Ref data	✓ (limited)	✓
Extended Ref data	-	✓
Fixed income Calculations	✓	✓

***Table 6**: Market and Reference Data Feed*

5 The Trading Day

During the trading day, the state of the order book changes as instruments transition between different trading phases and in case of unscheduled trading halts or suspensions.

The state of the order book controls what functionality is available to users, how orders are executed and what type of pre- and post-trade information is made available.

Information about the current order book state is provided at instrument level on market data feeds, notifying market participants every time an instrument enters a new trading phase or in case trading is halted or suspended and subsequently resumed.

All times set out in this section are in Central European Standard Time (CET).

5.1 Trading

This section describes relevant sequence and timings of trading phases for different Exchanges, market segments and products on normal and half trading days, respectively.

ⓘ Please note. Market data feed will send trading session “Continuous Trading” for auction market order books during opening hours while auction is not initiated, order entry and matching is however not enabled, see 5.2.3 for further details

5.1.1 Trading hours for Nasdaq Copenhagen and Nasdaq First North Denmark (CET)

		Opening Call		Continuous Trading	Closing Call		After Market	
Market	Pre-open	Call	Un-cross		Pre-close	Un-cross	Post-Close	Closed
CPH Cash Bond	07:00	-	-	08:30-17:00	-	-	17:00	18:00-07:00
CPH Indicative Bond Market	07:00	-	-	08:30-17:00 (Indicative Quotes)	-	-	17:00	17:20-07:00
CPH Auctions	07:00	-		(Open for auction initiation) 08:30-16:30	-	-	16:30	16:45-07:00
CPH FN Bond Market	07:00	-	-	08:30-17:00	-	-	17:00	18:00-07:00

***Table 7**: Trading hours – Nasdaq Copenhagen and Nasdaq First North Denmark (CET)*

5.1.2 Trading hours for Nasdaq Stockholm and Nasdaq First North Sweden (CET)

		Opening Call		Continuous Trading	Closing Call		After Market	
Market	**Pre-open**	**Call**	**Uncross**		**Pre-close**	**Uncross**	**Post-Close**	**Closed**
STO Retail Bond Market	08:00	08:45	09:00	09:00-16:15	-	-	16:15	18:30-08:00
STO Indicative Bond Market	07:15	-	-	07:30-16:20 (Indicative Quotes)	-	-	16:20	18:30-07:15
STO Mortgage rates	07:00	-	-	08:30-18:00	-	-	18:00	18:30-07:00
STO EIM Super Benchmarks	08:00	-	-	08:30-17:00	-	-	17:00	18:00-08:00
STO FN Bond Market	08:00	08:45	09:00	09:00-16:15	-	-	16:15	18:30-08:00
STO FN Indicative Bond Market	07:15			07:30-16:20 (Indicative Quotes			16:20	18:30-07:15

***Table 8**: Trading Hours – Nasdaq Stockholm and First North Sweden (CET)*

5.1.3 Trading hours for Nasdaq Helsinki and Nasdaq First North Finland (CET)

		Opening Call		Continuous Trading	Closing Call		After Market	
Market	**Pre-open**	**Call**	**Uncross**		**Pre-close**	**Uncross**	**Post-Close**	**Closed**
HEL Retail Bond Market	07:30	08:45	09:00	09:00-17:20	-	-	17:20	18:00-07:30
HEL Indicative Bond Market	08:45	-	-	09:00-17:30 (Indicative Quotes)			17:30	18:00-08:45
HEL FN Bond Market	07:30	08:45	09:00	09:00-17:20	-	-	17:20	18:00-07:30

***Table 9**: Trading Hours – Nasdaq Helsinki and First North Finland (CET)*

5.1.4 Trading hours for Nasdaq Iceland and Nasdaq First North Iceland (CET)

		Opening Call		Continuous Trading	Closing Call		After Market	
Market	**Pre-open**	**Call**	**Uncross**		**Pre-close**	**Uncross**	**Post-Close**	**Closed**
Iceland Cash Bond Trading	09:00 *	10:00	10:30*	10:30-16:25*	16:25*	16:30*	16:30*	17:00-09:00*

Iceland FN Bond Market	09:00 *	10:00	10:30*	10:30-16:25*	16:25*	16:30*	16:30*	17:00-09:00*

***Table 10**:Trading Hours – Nasdaq Iceland and Nasdaq First North Iceland (CET)*

* Times stated in box are CET standard time. During CET daylight savings time, the opening time and closing hours are an hour later in CET (because Iceland has not adopted the daylight savings time). Pre-Open starts at 10:00 CET, Opening Uncross at 11:30 CET and Closing Uncross at 17:30 CET.

5.1.5 Trading hours for Nasdaq Riga and Nasdaq First North Latvia (CET)

		Opening Call		Continuous Trading	Closing Call		After Market	
Market	**Pre-open**	**Call**	**Uncross**		**Pre-close**	**Uncross**	**Post-Close**	**Closed**
RSE Bonds Auto match	08:00	-	-	09:00-15:00	-	-	15:00	15:30-09:00
RSE Auctions	07:00	-	-	08:00-15:00 (Auction Initiation per request)	-	-	15:00	15:30-07:00
RSE FN Bonds Market	08:00	-	-	09:00-15:00	-	-	15:00	15:30-10:00

***Table 11**: Trading Hours – Nasdaq Riga and Nasdaq First North Latvia (CET)*

5.1.6 Trading hours for Nasdaq Tallin and Nasdaq First North Estonia (CET)

		Opening Call		Continuous Trading	Closing Call		After Market	
Market	**Pre-open**	**Call**	**Uncross**		**Pre-close**	**Uncross**	**Post-Close**	**Closed**
TSE Bonds Auto match	08:00	-	-	09:00-15:00	-	-	15:00	15:30-09:00
TSE Auctions	07:00	-	-	08:00-15:00 (Auction Initiation per request)			15:00	15:30-07:00
TSE FN Bonds Market	08:00	-	-	09:00-15:00	-	-	15:00	15:30-09:00

***Table 12**: Trading Hours – Nasdaq Tallin and Nasdaq First North Estonia (CET)*

5.1.7 Trading hours for Nasdaq Vilnius and Nasdaq First North Lithuania (CET)

	Opening Call	Continuous Trading	Closing Call	After Market

Market	Pre-open	Call	Uncross		Pre-close	Uncross	Post-Close	Closed
VSE Bonds Auto match	08:00	-	-	09:00-15:00	-	-	15:00	15:30-09:00
VSE Auctions	07:00	-	-	08:00-15:00 (Auction Initiation per request)			15:00	15:30-07:00
VSE FN Bonds Market	08:00	-	-	09:00-15:00	-	-	15:00	15:30-09:00

***Table 13**: Trading Hours – Nasdaq Vilnius and Nasdaq First North Lithuania (CET)*

5.1.8 Half-Days

The following table describes trading times for Nasdaq Stockholm and Nasdaq First North Sweden markets during half-days.

		Opening Call		Continuous Trading	Closing Call		After Market	
Market	Pre-open	Call	Uncross		Pre-close	Uncross	Post-Close	Closed
STO Retail Bond Market	08:00	08:45	09:00	09:00-12:30	-	-	12:30	18:30-08:00
STO Indicative Bond Market	07:15	-	-	07:30-12:30 (Indicative Quotes)	-	-	12:30	18:30-07:15
STO Mortgage rates	07:00	-	-	08:30-12:30	-	-	12:30	18:30-07:00
STO EIM Super Benchmarks	07:15	-	-	08:30-13:02	-	-	13:02	17:00-07:15
STO FN Bond Market	08:00	08:45	09:00	09:00-12:10	-	-	12:10	12:30-08:00

***Table 14**: Trading Hours – Half days for Nasdaq Stockholm and Nasdaq First North Sweden (CET)*

5.1.9 Holiday & Half-Day Calendars

The dates for holidays and half-days are defined by the Exchange per product segment. This means that it is possible that instruments under one or more product segments have a half trading day or are closed for trading while on the same day, trading takes place as normal for instrument under other different segments.

Instruments that have a holiday are disseminated as usual in reference data, but they are closed for trading throughout that day without switching state of the order book.

In case all market segments have a holiday, the Trading System is inaccessible like over a weekend.

Information on dates for holidays and half-days can be found at the Nasdaq European markets website.

5.1.10 Normal Trading Hours (local time)

The following table describes the normal trading hours for each market in local time.

Exchange	Markets	Normal Trading hours (local time)
Nasdaq Copenhagen / Nasdaq First North Denmark	CPH Cash Bond / CPH FN Bond Market	**08:30-17:00**
	CPH Indicative Bond Market	**08:30-17:00**
	CPH Auctions	**08:30-17:00**
Nasdaq Stockholm / Nasdaq First North Sweden	STO Retail Bond Market / STO FN Bond Market*	**09:00-16:15**
	STO Indicative Bond Market / STO FN Indicative Bond Market*	**07:30-16:20**
	STO Mortgage rates*	**08:30-18:00**
	STO EIM Super Benchmarks*	**08:30-17:00**
Nasdaq Helsinki / Nasdaq First North Finland	HEL Retail Bond Market / HEL FN Bond Market	**10:00-18:20**
	HEL Indicative Bond Market	**10:00-18:30**
Nasdaq Iceland / Nasdaq First North Iceland	Iceland Cash Bond Trading / Iceland FN Bond Market	**09:30-15:30**
Nasdaq Riga / Nasdaq First North Latvia	RSE Bonds Auto match / RSE FN Bonds Market	**10:00-16:00**
	RSE Auctions	**09:00-16:00**
Nasdaq Tallin / Nasdaq First North Estonia	TSE Bonds Auto match / TSE FN Bonds Market	**10:00-16:00**
	TSE Auctions	**09:00-16:00**
Nasdaq Vilnius / Nasdaq First North Lithuania	VSE Bonds Auto match / VSE FN Bonds Market	**10:00-16:00**
	VSE Auctions	**09:00-16:00**

Table 15 - Normal Trading Hours in local time

* During half-days trading hours end at 12:30 except for STO FN Bond Market where half day trading hours end at 12:10 and STO EIM Super Benchmarks where half day trading hours end at 13:02.

5.1.11 Schedule for Manual trades

Manual trades (trade reporting) are allowed from pre-open phase up until Closed on markets with trade reporting allowed. Please refer to chapter 9 for more information.

5.2 Trading Sessions

This section describes the different methods of trading and the characteristics of relevant trading sessions and their transitions.

5.2.1 Trading Sessions

Trading Sessions differ between markets. Markets can be set up as continuous matching with or without opening/closing auctions, Indicative Quote markets and thus no matching available and Issuing Auction markets.

For markets set up as continuous matching the following trading sessions are available but not configured for all markets in the following sequence:

1. Pre-open
2. Opening call (auction)
3. Continuous trading
4. Closing call (auction)
5. Post-close

For other markets, the main trading session only comprises a continuous trading phase. For markets configured for Issuing Auction please refer to chapter 5.2.3

5.2.1.1 Pre-open

Only cancellation of orders is allowed. Matching is not available. Trade reporting is allowed, where configured. At the start of the session state GTD/GTC orders are carried over from the previous day and retain their time priority. No market by order transparency.

5.2.1.2 Opening & Closing Auctions

During the opening and closing auctions, a two-sided auction is organised which ends with an uncrossing procedure where the matching engine matches orders into trades based on the current equilibrium price in the order book, as further described in section 5.2.1.7.

Auctions are only configurable per market.

Throughout opening and closing auction phases, the following applies:

- Order management is supported meaning participants can enter new and change or cancel existing orders.
- Orders with time in force conditions Day, Good-Till-Cancelled (GTC), Immediate-Or-Cancel (IOC) and Good-Till-date (GTD) are available for the opening auction. On-open Orders (Market-On-Open (MOO), Limit-On-Open (LOO) and On-close Orders (Market-on-close (MOC), Limit-on-close (LOC) become eligible interest for the opening/closing auctions. An IOC order is eligible for execution in the opening auction and will be cancelled after the completion of the opening auction if it is not fully executed.
- Minimum Acceptable Quantity (MAQ) Orders can participate in the auctions with the MAQ requirement temporarily waived. That is, MAQ Orders can participate in both auctions and the continuous market; however, the “MAQ requirement” will only be enforced during the continuous market.
- Reserve orders are allowed. Only the displayed portion is included in the Order Book dissemination of Net Order Imbalance during the imbalance dissemination preceding the auction. The hidden portion of reserve orders is therefore not disseminated via Net Order Imbalance Information (NOII) unless it participates in creating an equilibrium price in a crossed orderbook. Individual Orders are however, never published during an auction.
- Non-displayed (Hidden) orders can participate in the auctions. Hidden orders are not disseminated via Net Order Imbalance Information (NOII) unless it participates in creating an equilibrium price in a crossed orderbook.
- Time priority for orders entered prior to the uncross and during continuous trading is based on the order entry time. Orders (with time-in-force condition GTC and GTD) entered prior to the current trading day will keep their time priority.
- Incoming market and limit orders that are eligible to participate in the auction are stored on each side of the order book in descending buy price or ascending sell price order, respectively. Market orders rank ahead of limit orders due to price priority. Volume allocation priority in opening and closing auctions is as follows:

  1=price; 2=Visibility; 3=time.
- Eligible bids and offers accumulate and can cross (best bid at or above best offer) without matching and remain in the order book until they are cancelled or until they are executed as part of the uncrossing procedure.
- Directed Request for Quote and linked orders are not allowed.
- Trade reporting is allowed, where configured.

- Individual orders are not disseminated on market data feeds, pre-trade information is available in real time as Net Order Imbalance Information (NOII) as further described in section 5.2.1.8.

5.2.1.3 Opening Auction

The following orders are eligible to participate in the Opening Auction:

- Limit orders and market orders. Orders with time-in-force conditions Day, Good-Till-Cancel, Good-Till-Date, Immediate-Or-Cancel (IOC) and Good-Till-Time as well as On-open Orders (Market-On-Open (MOO) and Limit-On-Open (LOO) become eligible interest for the opening auction. An IOC Order is eligible for execution in the opening auction and will be cancelled after the completion of the opening auction if it is not fully executed.
- Reserve orders are allowed. Only the displayed portion is included in the Order Book dissemination of Net Order Imbalance during the imbalance dissemination preceding the auction. The hidden portion of reserve orders is therefore not disseminated via Net Order Imbalance Information (NOII) unless it participates in creating an equilibrium price in a crossed orderbook.
- Non-displayed (Hidden) orders can participate in the auctions. Hidden orders are not disseminated via Net Order Imbalance Information (NOII) unless it participates in creating an equilibrium price in a crossed orderbook.
- Time priority for Orders entered during pre-open is based on the Order entry time. Orders (with time-in-force condition GTC) entered prior to the current trading day will keep their time priority.
- Unexecuted Orders (non-IOC and non-on open Orders) remaining after the uncross will transition into the continuous market with retained time-priority.

	Pre-open	Opening auction
Order management	Only cancellation of orders	Full order management Order entry: DAY, GTC, IOC, GTD, On-Open/On Close
Auto matching	No	
Market by order transparency	No market by order transparency	
Equilibrium data (Net order imbalance indicator)	No	Equilibrium price (EP) with indicative traded volume based on all orders. Imbalance volume and direction Best bid and offer volumes and prices excluding non-display orders are disseminated for uncrossed order books.

***Table 16**: Overview of pre-open and Opening auction*

5.2.1.4 Continuous Trading

During Continuous Trading, matching buy and sell orders are continuously executed into trades based on the best available price in the order book. Orders can be executed in full or in part in one or more steps.

For instruments where no trade took place in the opening uncross, the first trade in Continuous Trading will set the opening price of the main trading session.

On-Close orders entered during the morning remain inactive, pending the start of the Closing Auction.

Throughout the Continuous Trading phase, the following applies:

- Full order management is supported meaning participants can enter new and change or cancel existing orders. The types of orders that can be entered are limit, market and linked orders. All order attributes and time in force allowed as described in chapter 6 here below.
- An incoming market order, or a buy (sell) order with a limit price at or higher (lower) than the best available offer (bid), is immediately matched with one or more orders resting in the order book until either the incoming order quantity is exhausted, or until there are no matching orders left in the order book.
- In Continuous Trading orders in the order book will be matched according to the following priority:
  - Nordic Exchanges: 1=price; 2=internal; 3=visibility; 4=time.
  - Baltic Exchanges: 1=price; 2=visibility; 3=time
- The limit price of the passive order resting in the order book determines the price on each trade that is executed.
- Directed Request for Quote is allowed where configured per market.
- Trade reporting is allowed, where configured.
- Individual orders in the order book are disseminated in price-time order.
- Trade details are published immediately, and trade statistics are updated with every execution, unless deferred publication is utilized.
- Counterparty information is published in real-time, where configured per market.
- Market by order transparency is available except on the STO EIM Super Benchmark Bond market where no market by order transparency is available. Instead, market by median BBO transparency is publicly available.

5.2.1.5 Closing Auction

The following orders are eligible to participate in the Closing Auction:

- Limit orders and market orders. Orders with time-in-force conditions Day, Good-Till-Cancel, Immediate-Or-Cancel (IOC) and Good-Till-Date (GTD) as well as On-close Orders (Market-On-close (MOC) and Limit-On-Close (LOC) become eligible interest for the closing auction. An IOC Order is eligible for execution in the closing auction.
- Reserve orders are allowed. Only the displayed portion is included in the Order Book dissemination of Net Order Imbalance during the imbalance dissemination preceding the auction. The hidden portion of reserve orders is therefore not disseminated via Net Order Imbalance Information (NOII) unless it participates in creating an equilibrium price in a crossed orderbook.
- Non-displayed (Hidden) orders can participate in the auctions. Hidden orders are not disseminated via Net Order Imbalance Information (NOII) unless it participates in creating an equilibrium price in a crossed orderbook.
- Time priority for unexecuted Orders entered during pre-open or continuous trading prior to uncrossing is based on the Order entry time.

	Continuous trading	**Closing auction**
Order management	Full order management	Full order management Order entry: DAY, GTC, IOC, GTD, On-Close
Auto matching	Yes	No
Market by order transparency	Unexecuted DAY, GTC, GTD orders from opening uncross enter continuous market, IOC orders are cancelled. Continuous book displayed orders are disseminated, non-displayed and non-disclosed Reserve (Hidden Iceberg) volumes are not disseminated	No market by order transparency
Equilibrium data (Net order imbalance information)	No	Equilibrium price (EP) with indicative traded volume based on all orders. Imbalance volume and direction Best bid and offer volumes and prices excluding undisclosed orders are disseminated for uncrossed order books.

***Table 17**: Overview of Continuous Trading and Closing auction*

5.2.1.6 Uncrossing Procedure in Opening and Closing Auctions

At the end of an auction phase the Trading System carries out the uncrossing procedure to match and execute eligible orders based on the current equilibrium price for an instrument as follows.

- The equilibrium price is the one single execution price for all orders matched in the uncross.
- The traded price will not be lower (higher) than the best bid (offer) price of orders left from the auction.
- All eligible orders are matched and executed together in one step.
- Limit orders are executed at their limit price or better.
- After the order book has been uncrossed there will be no orders left following the auction that can be matched with each other.

It is not possible to execute an auction trade in case there are no crossing orders, or in case there are only market orders on both sides of the order book. In such case, the auction phase will simply end without a trade.

Volume allocation is as follows:

- Price-display-time priority.

In the volume allocation:

1. In case of no imbalance volume at the equilibrium price, then all orders priced at or better than the equilibrium price are executed in full.
2. In case of imbalance volume at the equilibrium price, then:
   - All orders priced better than the equilibrium price are executed in full.
   - Orders priced at the equilibrium price are executed in time priority order. After all display volumes have been executed in full, reserve volume and undisclosed volume are executed in time priority order

As the meaning of market orders implies a more aggressive price than any limit order, it means that market orders have the highest priority.

Volume with any non-display attribute has lower priority than corresponding volume without non-display attribute.

After the uncross, any volumes that is left unexecuted from IOC or On Open/On Close orders that participated in the relevant auction are automatically cancelled.

5.2.1.7 Equilibrium Price Calculation

The opening and closing auctions collect orders on both sides of the order book for a period of time and then execute all matching orders at a single price (the equilibrium price (EP)) that maximizes the executable quantity and minimizes the surplus. The last part is called uncross because it removes all crossing prices in the order book. The uncross takes place in the transition between pre-trading and (continuous) trading.

The equilibrium price (EP) algorithm has the following price selection rules:

1. The EP is the price at which the maximum volume from matching orders can be executed in the uncross, including any reserve and undisclosed volume.
2. If there are two or more prices where the maximum volume can be executed, the EP is the price with the minimum imbalance volume. The imbalance volume is the absolute difference between the aggregate buy and sell volumes from eligible orders priced at or better than the given price level.
3. If there are two or more prices where the maximum volume can be executed with the same minimum imbalance volume, then the Trading System considers the market pressure (the side of any imbalance volume) at each price candidate to determine the EP as follows:
   - If all price candidates have buying pressure, then the highest price is the EP.
   - If all price candidates have selling pressure, then the lowest price is the EP.
4. If there is no market pressure (i.e. no imbalance) at each price candidate, or if both buying and selling market pressures exist, then a reference price is used to determine the EP. The reference price used in this step is today's last execution price or if no trade has yet taken place, then yesterday's closing price.
   - If there is no market pressure at each of the remaining price candidates, then the price candidate closest to a reference price is the EP.
   - If there is a mix of buying and selling pressure amongst the remaining price candidates, then the highest bid price with buy pressure or the lowest ask price with sell pressure is the EP, whichever is the closest to a reference price.
   - If no reference price is specified/defined in the Trading system it will choose the average of the highest and lowest eligible EP prices rounded to the nearest tick (round up if average is off tick).

It is not possible to calculate an EP when:

- No crossing orders.
- Only market orders exist in the orderbook.

Included in the Equilibrium Price Calculation are:

- Limit orders
- Market orders
- Reserve orders (using their entire specified quantity)
- Undisclosed orders

5.2.1.8 Net Order Imbalance Indicator (NOII)

Throughout auction phases, individual orders are not disseminated by the trading system.

The NOII information is sent at the start of an auction phase and with every order change that updates any of the NOII information.

The NOII information include:

- Equilibrium price
- Indicative trade volume
- Imbalance volume
- Imbalance direction (Buy/Sell)
- Best bid limit price
- Best ask limit price
- Volume at best bid limit price
- Volume at best ask limit price

Best bid and ask limit prices and the accumulated volumes at the respective price in the order book are published as long as the order book has not been crossed. Market orders are never represented in this information, e.g. in a scenario with no limit orders on the side(s). Undisclosed orders and hidden portion of reserve orders are not either represented in this information. They however participate in creating an EP.

The total volume of each reserve order and undisclosed orders participate in the auction and reserve volumes and undisclosed volumes at the equilibrium price are included in the relevant volume measures.

5.2.1.9 Post-Close Session

During the Post-Close Session the following actions are allowed:

- Order cancellation.
- Trade reporting, where configured.
- Trade cancellations are made in accordance with NMR/BMR.
- On entering the Post-Close phase, expired Orders are deleted. This includes Day orders and GTD orders on the last day.

Prices in this phase do not contribute to official end of day statistics.

	Post-close
Order management	Order cancel
Auto matching	No
Market by order transparency	No market by order transparency
Equilibrium data (Net order imbalance information)	No

***Table 18**: Overview of Post-close*

5.2.1.10 Closed

Participants have no access to the markets in the closed session.

5.2.2 Sold-Out Buy-back (SOBB)

Sold-Out Buy-Back is an optional functionality for issuers or lead managers and can be applied to instrument on certain markets. The aim of the functionality is to protect investors in situations where the Market Maker is no longer able to maintain orders on the sell side due to the instrument being sold out.

The issuer or the lead manager, assigned by the issuer as distributor, can activate SOBB for instruments under certain circumstances, for example when the issuer or the lead manager might have sold out on its inventory or do not want to sell more quantity.

During the SOBB status, only the issuer or the lead manager may submit buy and sell orders or bid and ask quotes. Other participants are only able to send in IOC sell orders. Any buy orders or bid quotes that are not sent in by the issuer or the lead manager during the SOBB status will be rejected.

Please refer to Appendix B for further information.

5.2.3 One-Sided Auctions

The Exchanges support issuing and buy-back auctions in instruments that are traded on price or on yield. One-sided auctions are set up on specific markets and do not make use of opening/closing auctions. One-sided auction markets open with pre-open phase where only order cancellation is available (only applicable for multi-day auctions). Then markets move to continuous trading session at the pre-defined time where it is possible to initiate auctions.

One-sided auctions are used by members and issuers to issue new debt (issuing auction) or buy back debt from the market (buy-back auction). It is also used for equity IPOs on the Baltic Exchanges. Auctions can last up to three months in some cases.

Interest is collected on one side of an orderbook, and the issuer is the sole actor on the other side of the orderbook. Issuer can also represent his other clients as well and act on order collection side.

The auctions are manually initiated by the issuer, and initiator controls when the auction starts and ends. The time for the Uncross is specified when starting the auction.

During the auction, no other trading may take place in the order book. If additional issued quantity is about to be added via an issuing auction, the existing issued quantity may still be operating in continuous matching, by using a separate order book for the same instrument.

One-sided auction consists of the following periods:

- Auction initiation – One sided auction is initiated by the issuer, using a transaction to the System. This transaction states the uncross time for the auction, auction type (Issuing or Buy-Back), auction dissemination type (open or hidden), settlement date etc. (please see below for full list of parameters). One-Sided Auction can be initiated and directed to all market participants having access to the market or directed to a selected number of participants (Invited participants).
- Auction period – after auction initiation (after auction has started), the trading system will start to accept orders from participants. Participants are allowed to update or cancel their orders during auction period.
- Issuer Position Modification (IPMO) period – Issuer can enter, update or cancel his order. Issuer might also be allowed to cancel participants orders (in case of non-compliance with auction rules).
- Uncross – Order book is uncrossed at a unified Equilibrium Price (Dutch allocation method), or at the investors individual order prices (American allocation method).

5.2.3.1 Auction initiation

One sided Auctions are initiated by the issuer. The Auction initiation states the uncross times for the auction, the type of auction (Issuing or Buy-Back), and if the auction should be open or hidden. The issuer can also state a non-standard settlement date for the auction and if a Reference Price shall be used for price limits or a Maximum or Minimum Order Quantity shall be used. The initiate auction message can be directed to a selected number of participants or to all participants.

The initiate Auction message from the Issuer shall contain the following mandatory information:

- Trading code of the member: Must be the issuer participant connected to the Instrument with the right to initiate an Auction.
- Orderbook: Must be an orderbook set up for Issuing Auction
- Auction type: Issuing or Buyback Auction
- Transparency: Open or Hidden
- Auction uncross date and time

The following optional fields are available for issuers when initiating an Auction. For a full list please refer to FIX specifications.

- Settlement date
- Maximum Order Quantity
- Minimum Order Quantity
- Minimum Allocation Quantity
- Competitive auction: yes/no
- Participants

Requested Uncross time is checked up against the trading schedule of the market.

5.2.3.2 Auction period

Investors orders as well as the issuer's order are entered. All orders can be updated or canceled. Details of the auction (prices, orders, predicted results) can be private to the auction participant (a hidden auction) or publicly displayed (open auction). Issuer can always see all orders, optionally with identities. Investors can, however, always see their own orders.

For an Issuing Auction, the issuer of the Instrument that this order book is trading shall be allowed to send in orders on both sides in the order book. All other participants may only send buy orders. For a Buy-Back auction, the opposite applies.

In Issuing auctions: Issuer is only allowed to enter **one order on the sell-side** but multiple orders on the buy-side

In Buy back auctions: Issuer is only allowed to enter **one order on the buy-side** but multiple orders on the sell-side.

Only limit orders with Time-in-Force Good-till-cancelled (GTC) are available for all auctions with the exception of non-competitive Auction where market orders with Time-in-Force Good-till-cancelled (GTC) are allowed.

Non-competitive Auctions

In non-competitive auction participants are only able to enter market orders with GTC validity during order entry stage. The following applies to non-competetive auctions:

- Hidden auction
- Non-competitive auction is always a dutch auction.
- Only market GTC orders allowed for participants.
- Issuer enters limit order.

5.2.3.3 Optional Issuer Position Modification (IPMO)

Only Issuer can enter, update or cancel his order. Issuer might also be allowed to cancel investor orders.

Other Participants may not enter, update or cancel orders.

5.2.3.3.1 Flexible IPMO Session

In addition to a pre-defined uncross time the issuer has the ability to start the Uncross ahead of time during the IPMO period. If an issuer is ready to uncross the auction (before the scheduled uncross time) the Issuer shall initiate the Uncross actively.

5.2.3.4 Uncross

Order book is uncrossed at a unified Equilibrium Price (Dutch method), or at the investors individual order prices (American method).

American: Using this Allotment Method, the book is uncrossed by matching the issuers order against the other side orders. The American method executes all executable orders at their specified price (i.e. a multi-price auction).
Dutch: Using this Allotment Method, the book is uncrossed using the normal equilibrium price (i.e. a single price auction). Uncross is started from the Issuers side.

The following volume allocation models are supported on the fixed income markets:

- FIFO (first in first out) or price-time.
- Total (proportional) pro rata allocation

Please refer to Appendix C for detailed information on volume allocation models.

5.2.3.5 EP calculations for One-Sided Auctions

The equilibrium price (EP) algorithm has the following price selection rules for one-sided auctions. The following EP calculation applies to both Dutch and American auctions.

1. The EP is the price at which the maximum volume from matching orders can be executed in the uncross.
2. If there are two or more prices where the maximum volume can be executed, the EP is the price with the minimum imbalance volume. The imbalance volume is the absolute difference between the aggregate buy and sell volumes from eligible orders priced at or better than the given price level.
3. If there are two or more prices where the maximum volume can be executed with the same minimum imbalance volume, then the Trading System considers the market pressure (the side of any imbalance volume) at each price candidate to determine the EP as follows:
    - If all price candidates have buying pressure, then the highest price is the EP.
    - If all price candidates have selling pressure, then the lowest price is the EP.
4. If there is no market pressure (i.e. no imbalance) at each price candidate, or if both buying and selling market pressures exist, then the best price in favour of the issuer at which the volume is reached is used. For issuing auctions, this is the higher price and for buy-back auctions this is the lower price.

5.2.3.6 Cancelling an Auction

It is possible for an Issuer to cancel an Auction by sending a cancel auction message to the system. When the auction is cancelled all orders in the order book shall be cancelled.

5.2.3.7 Market data for One-Sided Auctions

5.2.3.7.1 Open auctions

For an open auction, market information is distributed during the order entry session and information from the uncross is also public.

Net order imbalance information (NOII) is disseminated via ITCH only during open auctions. NOII is public information available also via GCF.

The NOII information is sent at the start of the auction and with every order change that updates any of the NOII information.

The NOII information include:

- Equilibrium price
- Indicative trade volume
- Imbalance volume
- Imbalance direction (Buy/Sell)
- Best bid limit price (or set to zero if the book is crossed)
- Best ask limit price (or set to zero if the book is crossed)
- Volume at best bid limit price (or set to zero if the book is crossed)
- Volume at best ask limit price (or set to zero if the book is crossed)

Best bid and ask limit prices and the accumulated volumes at the respective price in the order book are published as long as the order book has not been crossed.

5.2.3.7.2 Hidden Auctions

In a hidden auction, no market information is public; only the initiator is able to see the aggregated order book.

5.2.3.7.3 Preliminary auctions result available to the Issuer can be seen in the table below:

Trade Statistics	Description
Equilibrium Price	Equilibrium Price as displayed in NOII.
VWAP Match Price	Volume Weighted Average Price of all matched respondent orders for American Auction. The VWAP is calculated whenever it's possible to calculate a VWAP, that is, as soon as there is a bid and an ask in the orderbook. (Since the issuer normally enter his order during the IPMO period, this is when the system starts to calculate the VWAP.)
Matching Quantity	The quantity that can be/has been matched at the auction price
Imbalance Quantity	How much of orders at the Auction Price could not be matched. Until the issuer enters an order, this will be zero.
Preliminary / Final	Is set to preliminary until the uncross has been made

***Table 19**: Issuer Auction result message*

5.2.3.7.4 Post trade information for One-Sided Auctions

All trades resulting from uncross will be published.

5.2.3.8 Current Issuing Auction configuration

The table below shows the standard issuing auction configuration on the different markets at Nasdaq Nordic and Baltics.

Exchange	Product segment	FIFO	Total Pro Rata	IPMO	Price	Yield	Dutch	American	Hidden	Open
Nasdaq Copenhagen	CPH Auctions		✓	✓	✓	✓	✓		✓	
	CPH Standard Settlement Auctions		✓	✓	✓		✓		✓	
	CPH Tap Auctions		✓	✓	✓		✓		✓	
	CPH Buy Back Auctions		✓	✓	✓		✓		✓	
Nasdaq Riga	RSE FI New Issue	✓	✓	✓	✓			✓	✓	
	RSE FI New Issue Yield	✓	✓	✓		✓		✓	✓	
	RSE Equity Auctions	✓	✓	✓	✓		✓	✓	✓	✓
	RSE Bond Auctions	✓	✓	✓	✓		✓	✓	✓	✓
Nasdaq Tallin	TSE Equity Auctions	✓	✓	✓	✓		✓	✓	✓	✓
	TSE Bond Auctions	✓	✓	✓	✓		✓	✓	✓	✓
	TSE FI New Issue		✓	✓	✓	✓		✓	✓	
	TSE FI New Issue Non		✓	✓	✓	✓	✓		✓	
Nasdaq Vilnius	VSE FI New Issue		✓	✓	✓	✓		✓	✓	
	VSE FI New Issue Non		✓	✓	✓	✓	✓		✓	
	VSE Equity Public Sales	✓	✓	✓	✓		✓	✓		✓
	VSE Equity Tender Offer		✓	✓	✓		✓			✓
	VSE Bond Auctions	✓	✓	✓	✓		✓	✓	✓	✓
	VSE Equity Auctions	✓	✓	✓	✓		✓	✓	✓	

***Table 20**: Issuing Auction configuration*

5.3 Trading Halts & Resumptions

This section describes the characteristics of relevant trading halts and suspensions, and how trading is resumed following such interruptions.

5.3.1 Circuit Breakers

Circuit breakers are mechanisms for automatically halting trading in case there is a sudden significant price movement.

The Exchange defines the conditions for triggering of a circuit breaker per orderbook and in case such condition is detected, the circuit breaker is applied so that trading is halted. The orderbook then either moves to a volatility auction or a volatility stop, depending on configuration.

Information on the Exchange's different circuit breakers mechanisms and their triggering conditions and configuration can be found in section 12.2.

5.3.1.1 Volatility Auction

The order book can change state to Volatility auction during the Continuous Trading phase.

During the Volatility auction period, a two-sided auction is organised with an uncrossing procedure carried out at the end in the same way as during the regular Opening and closing auctions. The auction has all the characteristics and rules for Auction period Order management as a normal auction. There will be no prolonging of the auction, even if the auction price falls outside any previous threshold, or if there is a situation without any crossed prices.

The duration of a volatility auction is 120 seconds. After the uncross takes place the order book switch back to the applicable continuous trading state.

5.3.1.2 Volatility Stop

The Order book can change state to Volatility Stop during Continuous Trading phase.

During the Volatility Stop period, only order cancellation is available.

The duration of a volatility stop is 60 seconds. After the volatility stop the order book switches back to the applicable continuous trading state.

5.3.2 Trading Halts

Trading may be suspended by the Exchange either for technical reasons or for regulatory reasons. Suspensions are regulated in Nasdaq Nordic Member Rules and Nasdaq Baltic Member Rules, respectively.

Technical suspension means that trading is suspended when the order book(s) becomes inaccessible for technical reasons. In this case a trading halt will be imposed.

Regulatory suspension means that the order book(s) is suspended due to rules and regulations. In this case a trading halt will be imposed too. A regulatory suspension may affect one or several markets or order books.

When trading in an instrument is suspended, the Trading System disseminates an order book trading action message via ITCH/GCF indicating that the order book has switched state to either Technical Halt or a Regulatory Halt.

For the duration of the trading suspension, users cannot enter new or change open orders in relevant instruments.

The Exchange shall provide its members with information on trading halts via suitably accessible information technology. In practice this means that the Exchange publishes a system message and/or an Exchange/IT notice.

5.3.2.1 Trading halt due to technical reasons (Technical halt)

Used when the system experiences technical errors. All affected order books are set in a stop state. Technical disruptions are regulated in NMR and BMR.

When a technical halt occurs, the following applies:

- Automatic order matching ceases.
- When transitioning into technical halt state all Quotes and any Request for Quotes are cancelled but orders stay in the book.
- Placement of new orders or changes to orders is not permitted, however an order may be cancelled from the order book.
- Manual trades may not be reported.
- RfQ is not allowed.

5.3.2.2 Trading halt due to Regulatory Reasons (Regulatory halt)

On Nasdaq Nordic and Baltic, a trading halt is imposed when there is an obvious risk that trading will no longer be carried out on equal terms or will not be based upon sufficient information (unfair market conditions). All investors must have equal access to information about the instruments traded. Whenever Nasdaq Nordic or Baltic encounters a situation of ‘unfair market conditions’ a trading halt is considered. Trading suspension due to Regulatory reasons are regulated in NMR and BMR.

When Regulatory halt occurs, the following applies:

- Automatic order matching ceases.

- When transitioning into Regulatory halt state all Orders, Quotes and Request for Quotes are cancelled.
- No Order management is allowed.
- Manual trades may not be reported with the exception of Exchange granted trade report.
- RfQ is not allowed.

5.3.2.3 Resuming Trading after a Trading Halt

After a Halt phase, trading is typically resumed according to the following procedure:

- Instruments that start regular trading hours with an opening auction will first enter a re-opening auction for 10 minutes before continuous matching resumes.
- Other instruments open in continuous matching without any re-opening auction.

When a halt ceases, trading is resumed and the restrictions on order entry and changes to orders cease. The members are again committed by orders placed in the order book however, it may be decided by Nasdaq to “flush” the order book before resuming trading according to NMR/BMR.

In case there are less than 10 minutes to post close for markets without closing auction the re-opening auctions could be shortened, uncrossing the order book and moving straight to post close without any continuous trading in-between. In case there are less than 10 minutes to the next auction (e.g. closing auction) the call auction state could be shorter than 10 minutes, uncrossing the order book, without any Continuous Trading in-between.

In connection to Technical Halts, the Exchange communicates the time of the start of Re-Opening Auction/continuous trading to members via Exchange Notice.

5.3.3 Notification codes

Notification codes are used by Nasdaq Nordic and Baltic to indicate the trading status of listed instruments. The notification codes are disseminated by the trading system via ITCH/GCF.

There are currently two notification codes for the Fixed Income markets in the trading system as seen in the below table:

Note code	Description
OB	Observation status
SL	Other surveillance list reason

***Table 21**: Note Codes*

5.4 Market Conditions

The Exchange determines and communicates the market conditions for instruments as set out in the Exchange Rules (NMR and BMR).

Information about the current market conditions is provided at order book level on market data feeds, notifying participants when exceptional circumstances is declared and when subsequently the market returns to normal conditions.

Market conditions are set and controlled by the Exchange independently from the order book state of instruments. By default, in the absence of exceptional circumstances, an instrument is considered to have normal market conditions.

5.4.1 Exceptional Circumstances

Exceptional Circumstances means conditions covered in exhaustive list of Commission Delegated Regulation (EU) 2017/578.

Exceptional Circumstances is a condition declared by the Exchange which can be applied on one or several markets.

During Exceptional Circumstances, a Market Maker's quoting obligations are temporarily disabled.

Exceptional Circumstances will be treated on a case-by-case basis and in the event, it is declared, it applies immediately following the publication. Exceptional Circumstances can be set to last from 30 minutes up to end of trading, after which the market will return to normal unless the Exceptional Circumstances period is extended.

6 Order Handling

This section describes how participants can manage orders for trades in individual orderbooks and the different type of orders that are supported and their characteristics.

Whenever a new order or a request to change or cancel an open order has been received by the Trading System, an acknowledgement is returned to the participant via the port where the request was submitted.

Similarly, whenever an order has been executed, triggered or expired or there has been an unsolicited change to an order, the Trading System sends a notification to the concerned participant via the port where the order was submitted.

6.1 Order Management

6.1.1 Order Entry

Each order must identify an active individual orderbook; and specify the side (buy or sell), order quantity, order type and time-in-force. Additionally, limit orders must specify a valid limit price or yield. Display quantity conditions and self-match prevention identifier are optional attributes.

Furthermore, each order must identify the user (Trader ID) submitting the order and for which member (MPID). Order attributes not directly related to how the order will be executed, but provided for information purposes, can or must be specified depending on the type of information and as required by the applicable order entry protocol. The different order attributes and their usage are described in section 6.2.

Every new order entered in the order book is assigned a timestamp for trade priority purposes.

Additionally, all orders must include regulatory party and capacity identifiers as further described in section 6.3.1.

6.1.2 Order Change & Replace

The priority of an existing Order is retained if the volume is reduced. If an existing Order is increased in volume, the Order will lose time priority. Orders can be cancelled and replaced with a new Order with new time priority.

To clarify, any other changes or amendments besides reducing volume to orders result in a cancellation and a replacement with a new timestamp.

6.1.3 Order Execution

A participant is notified in case all or a part of its order has been executed. Execution notifications are sent immediately once the trade has been made and include the necessary details for participants to determine the status of their order as well as the total volume executed.

More information on how trade identifiers are assigned can be found in section 10.1.

6.1.4 Order Cancellation

Participants can cancel orders either by reference to a specific order or by using the order mass-cancel feature that supports deletion of multiple orders on a port that meets the specified input criteria.

As an exceptional risk protection action, it is possible for a participant to mass-cancel all its open orders and quotes across connections and additionally block subsequent order entries by submitting a member kill switch request. More information on the kill switch functionality can be found in section 12.4.1.

6.1.4.1 Unsolicited Cancellations of Orders

Open orders will be cancelled automatically in the following scenarios:

- The order expires.
- Cancel-on-disconnect functionality is triggered for the participant.
- The instrument is suspended for regulatory reasons.

As an exceptional risk protection action, it is possible for a participant to mass-cancel all its open orders and quotes across connections by submitting a member kill switch request. More information on the kill switch functionality can be found in section 12.4.1.

Additionally, the Exchange can initiate a mass-cancel of open orders in case trading is halted for technical reasons or requested by the participant and in similar scenarios.

6.2 Order Types, Attributes and Time in Force

When an order is entered, certain attributes specified by the user will determine how the order is executed. Other attributes are provided for information purposes and are passed through in notifications and on trades for downstream processing.

The order types and attributes that are available are described below.

6.2.1 Order Types

6.2.1.1 Limit Order

A limit order specifies a maximum buying price or a minimum selling price. It will execute at its given limit price or better. Any remaining quantity after a limit order has been partially executed is queued in the order book in descending buy price, or ascending sell price order and joins the queue of orders at the same price level according to time priority. For orderbooks traded in yield, the ranking is in most cases reversed.

It remains active in the order book until it is either cancelled, executed or the order expires.

Stored limit orders are also valid in call auctions.

A limit order must be submitted with a valid limit price/yield or otherwise it will be rejected. The validity of a limit price is determined by the instrument's tick size (minimum price variation) table, which defines the applicable price steps within defined price intervals.

Negative limit prices are valid for orderbooks if the absolute value conforms to the applicable tick size.

Limit orders support all time-in-force conditions that are relevant for the applicable order book state.

6.2.1.2 Market Order

A market order is submitted without a price. It will trade as far as applicable price limits permit.

If submitted for execution in continuous matching it will execute at the best available price(s) on the opposite side of the order book and can sweep through price levels to fill the order quantity.

If submitted for execution in an auction, it will execute at the equilibrium price.

Market orders are only available for individual instruments and can have time-in-force conditions IOC, FOK (continuous matching only), On Open or On Close.

Market orders with the time in force "IOC" can be placed during call auctions where it participates in the auction but if not traded, the order is always cancelled after the uncross.

Market orders with the time in force "FOK" cannot be placed during call auctions.

6.2.1.3 Linked Orders

Linked orders provide the functionality to enter more than one order and to state that you want to buy e.g. either 500 of Bond X at price A OR 500 of Bond Y at price B, OR a combination thereof.

The linked order corresponds to a number of single orders with an exclusive OR-condition on the maximum volume level.

When a trade takes place in one of the legs, the volume of all other legs will immediately be cancelled, so there will be no risk of "double trading". Linked orders are only active for the remaining day (DAY order) and the maximum number of orders that can be linked is 5.

Linked orders are only available for Nasdaq Stockholm on the EIM Super Benchmark Bond market.

Please refer to Appendix E for more information on linked orders.

6.2.2 Order Attributes

6.2.2.1 Reserve Orders (Iceberg orders)

A reserve order (or iceberg order) is a limit order that only displays a portion (the display quantity) of its total volume to the market as specified by the user.

On entry of a reserve order, the display quantity is assigned a timestamp and is prioritised like regular limit orders at the same price in the order book.

The display quantity is automatically refreshed from the hidden reserve when the reserve order is executed in full.

When the display quantity is refreshed, the new quantity will be the same as the initial. If the total volume is smaller than the initial, the new display quantity will be the remaining open order volume.

Every time the display quantity is automatically refreshed, it is assigned a new timestamp and queued at the given price in the order book accordingly.

In case an aggressive order remains unexecuted after the displayed quantities of reserve orders at the best price have been executed, the aggressive order may execute against the hidden volumes of reserve orders in time-priority order based on the timestamp of the hidden portion.

Display quantity can only be provided on day, GTD or GTC limit orders in individual instruments. It is not possible to change a reserve order to become a normal limit order or vice versa.

When the price, initial display quantity or total quantity on a reserve order is changed, the display quantity will be set to the lesser of its (potentially new) initial display quantity or total open order quantity. The matching engine will in such scenario assign the order a new time stamp and re-queue the displayed portion at the relevant price level in the order book.

On market data, each automatic refresh of display quantity for a reserve order is represented as a new order entry and assigned a new order ID to mask the reserve condition.

During auctions, the total open order quantity of a reserve order participates in the auction, and if the order is at the equilibrium price, it is included in the aggregated volume broadcasted in the NOII information.

For fixed income instruments in the Nordic market prioritized internal crossing is used when matching reserve orders a.k.a. iceberg orders. This e.g. implies that a participant will match their own order prior to an order of another participant even if the time priority of that order is better.

The total notional value of a reserve order must at the time of entry and following any change, meet the minimum reserve order value threshold as determined by the Exchange or otherwise the order will be automatically converted to an IOC, default, or rejected if that is preferred by the Member. A reserve order can be partially filled to leave an order value that is lower than the threshold without being cancelled.

The applicable threshold is 10.000 EUR and or equivalent in local currency at order entry, or after any modification by the Member.

6.2.2.2 Minimum Acceptable Quantity (Volume) order

Orders can be entered for execution with a minimum quantity. Adding Minimum Quantity condition to an order and setting this to equal the volume gives the equivalent of an All or None order (AoN).

Minimum Acceptable Quantity (MAQ) orders are allowed per market either undisclosed or visible but never both.

An order will not execute during continuous trading unless the MAQ criterion is met.

Undisclosed Minimum Acceptable Quantity orders

On markets where only undisclosed minimum acceptable quantity orders are allowed, visible minimum acceptable quantity (MAQ) orders are not accepted.

Undisclosed Minimum quantity orders cannot be combined with any other order attribute. MAQ Orders can participate in the auctions with the MAQ requirement temporarily waived. That is, MAQ Orders can participate in both auctions and the continuous market; however, the “MAQ requirement” will only be enforced during the continuous market.

Visible Minimum Acceptable Quantity orders

On markets where only visible minimum acceptable quantity orders are allowed, undisclosed minimum acceptable quantity orders are not accepted.

Visible Minimum Acceptable Quantity orders are available on Nasdaq Copenhagen only. Visible MAQ orders can be bypassed in matching of incoming orders if the MAQ condition is not fulfilled. In these cases, it will result in a publicly visible crossed orderbook. Therefore, visible MAQ orders do not contribute to best bid and offer (BBO).

See Appendix E for more details on MAQ orders.

6.2.2.3 Non-displayed order (Hidden order)

Non-displayed limit orders are hidden from other participants than the participant entering it. The order stipulates a maximum purchase price or minimum selling price. If not fully matched, it is logged in the order book in descending buy-price order or ascending sell-price order and joins the queue of orders having the same price according to time priority. Visibility is ranked ahead of time priority. A displayed order entered at a later time is ranked ahead of an earlier non-displayed order (if both orders are entered at the same price).

Non-displayed orders have to satisfy minimum size requirements. If the volume was reduced due to a partial execution, the order remains non-displayed even when smaller than the minimum size requirements.

Minimum size requirements can be seen in Appendix G:

A hidden order will be accepted if the following criterion is fulfilled:

- If the quantity is as high or higher than the size requirement limit (pre-trade Large in Scale for liquid instruments).

Non-displayed orders that do not meet the minimum size requirement will be automatically rejected.

6.2.2.4 Order attribute combinations

In general, the following combinations of order attributes are possible.

	Reserve	Minimum Quantity	Non-displayed
Reserve	-	-	-
Minimum Quantity	-	-	✓
Non-displayed	-	✓	-

Table 22: Order attribute combinations

6.2.3 Time-in-Force

On a general level, the Trading System supports the following time-in-force conditions for orders. The availability may be further limited depending on the order type and the state of the order book.

- **Day orders** are active for the remaining day until it is executed or cancelled or otherwise it expires after the close, i.e. when the market enters post-trading.
- **Immediate or Cancel (IOC):** The order behaves differently depending on the applicable trading mode.
  - Continuous trading – Any quantity not immediately executed on entry automatically cancels back to the user.
  - Call auction – The order is active in the order book during the relevant auction phase and any quantity not executed as part of the uncross is automatically cancelled.
- **Fill or Kill (FOK):** The order is executed in full immediately on entry or else the whole order is cancelled.
- **Good till Cancel (GTC):** The order is active until it is executed, cancelled or the expiration date of the instrument. On the expiration date, the order expires after the close in the same way as a day order. The order retains its time priority across dates.
  - Issuing Auction markets allow GTC orders (remaining orders are cancelled after the auction is executed) –GTC is the only order type allowed in auction markets.
  - Note that indicative quotes are day “orders”, indicative markets in general do not support any time-in-force conditions. The only exceptions is the STO Mortgage Rates market that requires indicative quotes to be expressed using orders as the mortgage rates are relatively seldom changed – thus GTCs are allowed.
- **Good till Date (GTD):** The order is active until it is executed or cancelled or otherwise on a specified date in the future the order expires after the close in the same way as a day order. The order retains its time priority across dates.
- **On Open:** The order is active only during the Opening Auction phase and any quantity left unexecuted after the opening uncross is automatically cancelled. They can be specified as market priced (MOO) or limit priced (LOO) orders. This time-in-force condition is only available for markets that start the main trading session with an auction and can only be entered during the current day’s opening auction.
  - **Limit On Open Order (LOO)** is an order to buy or sell at a specified price or better that is to be executed only during the Opening Auction. LOO orders will execute only at the price determined by the Opening Auction.
  - **Market on Open (MOO)** is an order to buy or sell at the market that is to be executed only during the Opening Auction. MOO Orders will execute only at the price determined by the Opening Auction. As the purpose of a Market Order is to price itself aggressively enough to put itself ahead of any competing limit order, the result is that the Market Order will always have the highest priority when allocating matched volume in the uncross of the Auction.

- **On Close:** The order is active only during the Closing Auction phase and any quantity left unexecuted after the closing uncross is automatically cancelled. They can be specified as market priced (MOC) or limit priced (LOC) orders. If entered before the Closing Auction, the order remains inactive until the start of the auction period, at which time it is assigned a timestamp and queued at the relevant price level in the order book. Any quantity not executed in the closing uncross is automatically cancelled. This time-in-force condition is only available for markets that end the main trading session with an auction and can only be entered before or during the current day's Closing Auction.
  - **Limit On Close Order (LOC)** is an order to buy or sell at a specified price or better that is to be executed only during the Closing Auction. LOC orders will execute only at the price determined by the Closing Auction.
  - **Market on Close (MOC)** is an order to buy or sell at the market that is to be executed only during the Closing Auction. MOC Orders will execute only at the price determined by the Closing Auction. As the purpose of a Market Order is to price itself aggressively enough to put itself ahead of any competing limit order, the result is that the Market Order will always have the highest priority when allocating matched volume in the uncross of the Auction.

6.2.4 Self-Match Prevention ID Code

Users can optionally specify a self-match prevention ID code on an order, providing Participants further granularity in their control of which orders/quotes within an MPID that should be prevented from matching with each other. The behaviour of the self-match prevention mechanism is described in detail in section 12.3.

6.3 Information Attributes

6.3.1 Regulatory Party & Capacity Identifiers

The following attributes are mandatory on all order entries:

- **Trader ID:** Identifying the user submitting the order.
- **Order capacity:** Identifying in what capacity the order is submitted (e.g. agent, principal, acting as market maker).
- **Client ID**
- **Investment decision within firm**
- **Execution decision within firm**

Client ID, Investment decision within firm and Execution within firm will each have one respective Party Role Qualifier field, **which needs to be populated, when mandatory**. The Client ID, Investment decision within firm and Execution within firm fields should be populated with a short code. Short codes are created by each member and shall be mapped up with a LongCode via Member Portal GUI, Member Portal Rest API or Member Portal file upload. Short codes will be saved for a minimum of 5 years and upon request from National Competent Authority, Nasdaq will submit a report in a predefined format.

The Trading System automatically set the value of the **Direct Electronic Access indicator** on orders based on the configured Trader ID type and does not need to be specified. In case an order is entered with a Trader ID of type Direct Market Access or Sponsored Access, but is considered a non-DEA order, it is possible to override the default and specify the DEA indicator on the order.

Detailed information on the submission and validation of regulatory party information and the short codes data enrich process can be found in the Nasdaq Nordic Implementation Guide for order record keeping at the Member Portal.

Short codes 0, 1, 2 and 3 are reserved values. More information about the short codes may be found in the Order Record Keeping guidelines.

7 Quote Handling

The Trading System supports two-way quotes and indicative quotes via the FIX protocol. Quote message is intended for market makers only. Unlike orders, the capacity cannot be specified and is automatically set to market maker by the trading system.

7.1 Two-way Quotes

On some markets users can place two-way quotes. The functionality supports submission of blocks of multiple quote entries and/or cancels, packaged into a single transmission (a “mass quote”).

A participant can only maintain one quoted price per instrument and side, meaning the submission of a new quote in a given instrument will automatically cancel/replace any former active quote in the order book.

In addition to cancellation with reference to individual quotes as part of a quote block, a quote mass-cancel message is available allowing a participant to cancel all of its open quotes based on specific filtering parameters.

Whenever a mass quote has been received by the Trading System, an acknowledgement stating the status of each individual quote is returned to the user. Similarly, whenever a quote side has been executed or there has been an unsolicited change, the Trading System notifies the concerned participant.

7.1.1 Quote entry

It is possible to submit quotes in individual instruments as part of the same block of quotes in different instruments.

Each individual quote item in a mass quote can be either a double-sided quote or a single-sided bid or offer quote.

The bid and ask prices in a double-sided quote must not cross each other or the concerned quote item will be rejected.

A quote is executed as a day limit order. Quotes are subject to the same pre-trade controls as normal orders.

7.1.2 Replacing Quotes

A new quote will cancel and replace any former active quote from that participant on the same side in a given instrument with the new price and quantity submitted.

Each side of a quote maintains its time priority individually from the other side. On a given instrument if a new quote entry is submitted having on one side the same price and the same size or smaller than the current quote, then that side maintains its time priority on the order book even if the other side is replaced and time priority is lost.

Similar to orders, quoting a new price or increasing the quoted size will be treated as a cancel followed by a new order entry and the quote will be assigned a new timestamp and queued at the applicable price level accordingly.

7.1.3 Quote Execution

A participant is notified in case a quote is executed in part or in full. Similar to notifications for orders, quote fill notifications are sent immediately by the Trading System after the concerned orders and quotes have been processed and the trade has been made.

Quote fill notifications include the necessary details for participants to determine the current status of open quotes as well as the total volume traded in the concerned instruments. Additionally, certain trade attributes describing how the quote was executed are provided.

7.1.4 Quote Cancellation

Individual quotes can be cancelled

Additionally, a quote mass-cancel functionality is available allowing a participant to pull all quotes filtered by specifying a Trader ID." If Trader ID is left blank, then the trading system will cancel all quotes within the same participant.

Active quotes in the order book are automatically cancelled in any of the following scenarios:

- Same as for orders, expiring quotes are deleted after regular trading hours.
- Trading is suspended for regulatory reasons
- Trading is halted due to technical reasons
- Trading is halted by a circuit breaker
- Cancel-on-disconnect functionality is triggered.

7.1.5 Information Attributes

Similar to normal orders, regulatory party identifiers for investment decision within firm and execution decision within firm as well as Trader ID are mandatory for quotes while a clearing account is optional pass-through information.

Unlike orders, the order capacity cannot be specified in mass quotes but is set automatically to “market making” by the Trading System.

7.2 Indicative Quotes

Nasdaq provide dissemination of indicative quotes in certain markets. Indicative quotes are used to display price levels on certain instruments, and they do not provide matching of interest. Indicative quotes can be inserted either with a price or with a yield depending on the configuration of the order book.

Indicative quotes are used by market makers to indicate at which prices they are willing to trade, but without making this a firm commitment.

The quotes are ranked according to configuration, price/time or inverted price/time.

New incoming indicative quotes that results in a crossed orderbook will still publish and rest on the book.

Indicative quotes will be available via FIX. Indicative quotes will be disseminated through market data feeds via ITCH and GCF.

7.2.1 Quote Entry

Indicative quotes can only be submitted with end of day (DAY).

Indicative quotes will not co-exist with tradeable orders and quotes. Indicative quotes can only be used for markets with indicative quotes configured.

7.2.2 Replacing Indicative Quotes

A participant can only have one active indicative quote. New indicative quotes from the same participant will overwrite existing indicative quotes in the order book from that session.

7.3 Information Attributes

Similar to normal orders, regulatory party identifiers for investment decision within firm and execution decision within firm as well as Trader ID and capacity are mandatory. Please see information attributes for orders above for more information.

Unlike orders, the order capacity cannot be specified in indicative quotes but is set automatically to “market maker” by the Trading System.

8 Directed Request for Quote (RfQ)

The Directed Request for Quote functionality makes it possible for market participants to send a private Quote Request (the initiator) in a specific order book directed to a single member or a list of members. Members respond to an RfQ by sending a directed executable order to the initiator.

Market participants that initiate an RfQ have an exclusive right to trade against any incoming orders by sending a matching directed order accept in response to one or more directed quote request responses. The initiator has the ability to select which response, if any, to execute against, meaning the initiator may accept (match against) all or partial quantity for one or several of the RfQ responses. Once the initiator accepts, there is a match and the trade is executed and published according to the applicable Exchange rules.

The Directed RfQ functionality is available during continuous trading.

There may be several RfQ processes for the same orderbook in parallel.

8.1 Quote request workflow

Directed Quote requests can be user-initiated and notify the directed participant that there is interest to trade a specific instrument. When sending an RfQ to a single member or a list of members the initiator can choose whether the RfQ is anonymous or not, i.e. whether the initiator's MPID is displayed to the directed member(s).

The prices provided in response to a quote request are only executable by the initiator.

The quote request and the response are private between the initiator and the respondent, and no information is disseminated publicly.

8.1.1 RfQ information

For a market participant to respond to an RfQ and accept an RfQ, it must include all required order details as described in chapter 6 above. The required order details are, however, not mandatory when sending an RfQ.

8.1.2 RfQ Duration

The RfQ duration time is the period of time (defined by the Exchange) where the quote request is valid and can be responded to. After the timer has expired, the quote request is no longer valid and it is, therefore, no longer possible to respond to it.

The RfQ duration is pre-set, with the current standard of 180 seconds.

8.1.3 RfQ Response duration

The RfQ Response duration time is the period of time (defined by the Exchange) by which a quoted price is tradable before it is cancelled (e.g. expired). RfQ response duration is set in seconds and is the maximum time the RfQ initiator has to respond with an accept transaction in order to trade against an incoming quote.

The quote duration is pre-set, with the current standard of 60 seconds.

8.1.4 RfQ Response expiration

Once the RfQ Response duration time has expired (60 sec), and the initiator of the quotes request has failed to accept, the quote response will be cancelled.

8.1.5 Initiator Quote Response

Is used to respond to a quote by accepting partial or full quantity of quote. After a successful match, the execution is sent out to relevant parties and public feed.

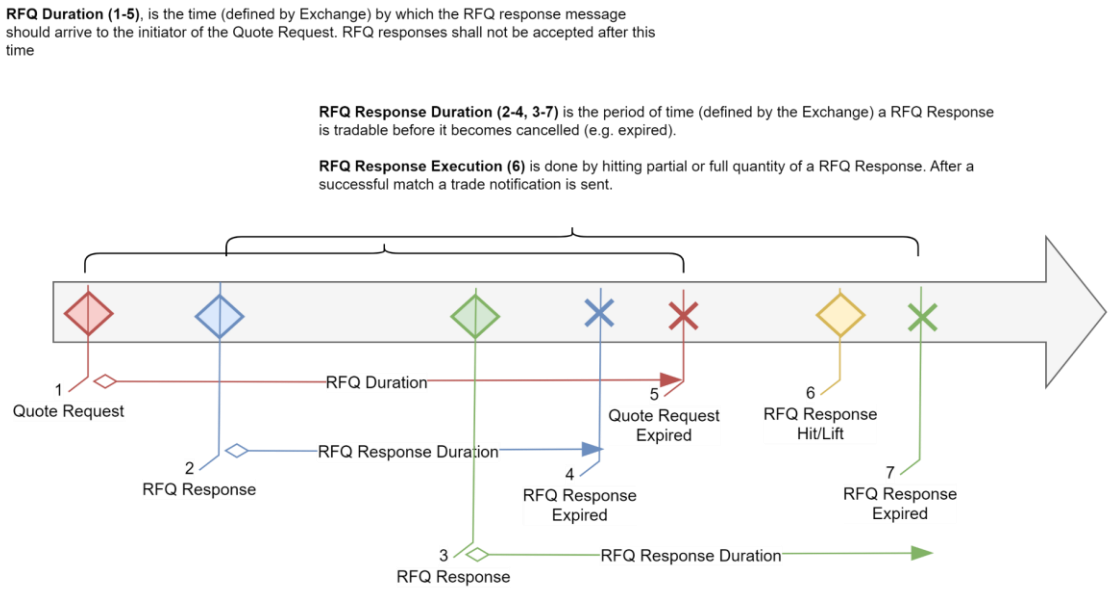

***Figure 1**: RfQ workflow*

8.1.6 Cancellations

A quote request will not be possible to cancel but it is possible to cancel a quote response.

8.1.7 Public market data feed

All post-trade information, i.e. all matched RfQ transactions are available via public market data feeds, such as ITCH and GCF.

The Request for Quote negotiations if they do not result in a trade are always private and not disclosed.

9 Trade Registration Facility

The Trade Registration Facility (TRF) enables members to report manual trades for registration in the Trading System and subsequent publication.

Manual trades are trades in Exchange-listed instruments that have been negotiated directly between the parties away from the order book in accordance with Nasdaq Nordic or Baltic Member Rules.

9.1 Trade Reports

Members can report trades in listed instruments electronically via the FIX protocol.

Only members are allowed to report manual trades.

9.1.1 Two-Sided Reports

A two-party report in FIX terminology.

One member reports both sides of an agreed trade in its own name.

If the trade report is accepted, an acknowledgment is sent to the reporting user.

The trade(s) is then immediately registered in the Trading System and trade confirmations are sent.

Two-sided reports can be used by members to report trades with or between clients.

9.1.2 One-Sided Reports for Matching

A one-party report for matching in FIX terminology.

Where two different members have agreed a trade, each member can report the respective side using a one-sided trade report and identify the counterparty.

As soon as one side has been accepted, an acknowledgement is sent to the reporting user, and a notification including the relevant trade details is sent to the contra-side participant on all FIX sessions associated with that MPID.

The counterparty can wait for the notification to appear or report its side independently. Once both trade-sides have been accepted and all the reported trade details plus participant identifiers (executing/contra) match, the trade is registered in the Trading System, at which time trade confirmations are sent to both parties. Any un-matched trade reports at end of trading are automatically cancelled.

9.1.3 Trade Details

Among the required trade details and attributes are:

- Instrument identity
- Buy or sell code
- Price or yield
- Volume
- Identity of counterpart member
- Trade type and flags – as further detailed below.
- Time of agreement– date and time

- Settlement date
- Deferred Publication if applicable
- Capacity – E.g. agent or principal

9.1.4 Information Attributes

Following information attributes is optional to trade types:

- Regulatory party identifiers (optional) – Same short codes and party role qualifiers as available for order entries (sub-section 6.3.1). Unlike orders, this information is not mandatory in trade reports but can be provided for transaction reporting purposes.
- Clearing instructions and other pass-through information (optional).

9.2 Reporting Deadline

As set out in the Nasdaq Nordic Member Rules and Baltic Member Rules the trade details of a manual trade must be registered in the Trading System as soon as is technically possible. For detailed reporting deadlines for each Exchange, please refer to Nordic Member Rules (NMR) and/or Baltic Member Rules (BMR). Members indicate the time of agreement in trade reports for this purpose.

In case of one-sided trade reports for matching, both sides must be reported and match within the reporting deadline.

9.3 Manual Trade Prices

A reported manual trade price is normally with four decimal places but can be configured.

9.4 Maximum trade report size

To prevent exceptionally large trade sizes from entering the system, a trade report must not exceed a certain threshold, or otherwise it will be rejected.

9.5 Trade Types

When reporting manual trades to the exchange, members are required to identify the type of trade using the relevant code.

Trade Type name and code	Standard (S)/non-standard (NS)	Description
Standard Trade – On hour (25)	S	A trade concluded on standard market terms in respect of price, time of the trade, and with standard delivery and settlement schedule. Updates latest paid price
Standard Trade – Off hour (35)	S	A Trade concluded on standard market terms in respect of price, time of the trade and with standard delivery and settlement schedule reported off hour in all session states except continuous trading. Will not update latest paid price
Derivative related trade (21)	NS	Exercise or expiration of options, forwards or futures contracts that imply an Exchange of securities or a trade that relates to a derivatives trade and forms an unconditional part of a combination together with a derivative trade
Non-standard settlement (22)	NS	A trade that deviates from the standard settlement and delivery period
Volume weighted average price trade (26)	NS	A trade that is based on more orders, and a number of sub-trades settled at an average price
Exchange granted trade (27)	NS	A trade pursuant to an individual or general authorisation from Nasdaq Nordic or Baltic
Repurchase agreement (24)	NS	Agreement between two parties that regulates the lending and return of the same nominal amount of instruments

***Table 23**: Trade Types*

9.6 Deferred Publication

MiFID II allows deferred publication of trades that are large in scale compared to normal market sizes or for instruments where there is not a liquid market. The deferral period depends on Instrument Class and Sub Classes and may vary between markets as the National Competent Authorities (NCAs) have some discretionary power to decide on the deferrals within the framework set by ESMA. Generally, the deferral period could be T+2 days or T+4 weeks where T is the day of trading.

The NCAs may require that aggregated trade information be published during the deferral period. T+2 days deferral could be supplemented with publication of aggregated trade information on day T+1 before 9:00 local time and T+4 weeks deferral supplemented with aggregated trade information for a calendar week published on the following Tuesday before 9:00 local time.

If the Trading System accepts the deferral request (subject to deferral volume threshold), the trade is not immediately published but the publication and updating of trade statistics is deferred until end of trading as follows.

Deferrals are currently allowed for Nasdaq Copenhagen, Nasdaq Stockholm and Nasdaq Helsinki. Please see appendix A for further information.

9.7 Trade Reporting Hours

Trade reporting is allowed per session state as seen below:

Session State	Trade reporting
Pre-Open	Allowed (all trade types except Standard Trade – On hour)
Opening Auction	Allowed (all trade types except Standard Trade – On hour)
Continuous Trading	Allowed (all trade types except Standard Trade – Off hour)
Closing Auction	Allowed (all trade types except Standard Trade – On hour)
Post-close	Allowed (all trade types except Standard Trade – On hour)
Closed	Not allowed
Volatility Auction/Volatility Stop	Not allowed

***Table 24**: Trade reporting per session state*

10 Trade Management

10.1 Trade Identification

The Trading System assigns trade identifiers out of matching events.

In a matching event, the Trading System generates a unique Match ID per pair of match.

The Match ID is unique across the Trading System within a trading day.

10.2 Trade Flags & Attributes

The Trading System flags and sets attributes on trades that describe how the trade was executed.

The information is included in order execution notification and trade confirmations sent to users as follows.

1. **Liquidity Indicator:** Describing the type of execution and set to aggressive, passive or undefined.
2. **Order Category:** Describing the type of order behind the trade (order or quote).
3. **MMT Trade Flags:** Information is provided in order execution notifications and manual trade confirmations to allow flagging of trades in accordance with the FIX MMT (Market Model Typology) standard. Where the flag at a certain MMT level cannot be implied from alternative information provided, the actual field with the applicable flag set is provided in the notification/confirmation from the Trading System. Detailed information on the MMT standard can be found at the FIX Trading Community website.

10.3 Trade Cancels & Adjustments

Trades may be cancelled by Nasdaq Nordic or Baltic or by the trading parties themselves. Cancellation and amendment rules are specified in NMR section 6.7, and the corresponding sections in BMR. Trading parties can only cancel a two-party trade report via FIX themselves.

The Exchange may cancel trades or correct trade details in case of erroneous executions or entries, as set out in the Exchange Rules. Trades can be cancelled, or price adjusted. Additionally, manual trade reports can have the volume, side, time of agreement, and/or manual trade report type/flags modified.

Cancellations or corrections to order book trades are carried out by the Exchange on “T” as soon as possible following the original trading time.

Erroneous off-book trade entries are generally cancelled or corrected on “T” but can under certain circumstances be cancelled or corrected on a later date.

11 Market Data

11.1 Market Status Information

Information about the status of instruments is published in real-time as follows:

- Trading phase changes (order book state change)
- Trading halts and resumptions (order book state change)
- Market conditions changes

11.2 Order Book Information

Pre-trade information is publicly available real-time as follows.

11.2.1 Continuous Matching

Market-by-Order (Order and Quote Level Data):

- Full depth with price and displayed quantity of every active order and quote resting in the order book, including indicative quotes.
- Series of order event information including executions to track life of an order or quote.
- Two-sided quotes are identified separately.
- Undisclosed orders, the hidden part of reserve orders and inactive on-open/on-close orders are not published.
- MPID, if configured. If pre-trade anonymity is configured, for the respective market, no member information is published in the orderbook.

Market-by-Level (Price-Level Aggregated Data):

- Aggregated displayed volume from active orders and quotes for each of the price levels per side.
- Number of active orders and quotes at each of the price levels per side.
- Series of price event information including executions to track state of order book.

Market-by-Median BBO[3] (only applicable for EIM Super Benchmark Bond Market):

- Median of the bid side and the median of the ask side is published.
- No volume is publicly available.

[3] For Exchange members of EIM Super Benchmark Bond Market, the Market by Order information as stated above, is available.

11.2.2 Auction Trading Mode

- No market-by-order or market-by-level is available during scheduled or unscheduled opening, closing or volatility auction periods.
- NOII information as detailed in sub-section 5.2.1.8 5.2.1.2 is sent at the start of each auction and in real-time as order entries update the data.
- At the end of an auction when the order book is uncrossed, trade information is published on an aggregated basis specifying the aggregated trade volume and the number of trades matched. Additionally details of each individual trade is published.

11.2.3 One-sided auction Trading Mode

During open auctions:

- In open auctions full depth with price and quantity of every active order resting in the order book.
- NOII information as detailed in sub-section 5.2.1.8 5.2.1.2 is sent at the start of each auction and in real-time as order entries update the data.
- MPID, if configured is published.

During hidden auctions:

- No market-by-order or market-by-level is available during hidden Issuing auction periods.

At the end of a one-sided auction when the order book is uncrossed, trade information is published on an aggregated basis specifying the aggregated trade volume and the number of trades matched. Additionally details of each individual trade are published.

11.3 Trade Reporting

In addition to order book execution data, among the trade ticker information published is as follows:

Order Book Trades:

- Trade id
- Execution time
- Trade price
- Trade volume
- Venue of execution

Manual Trades:

- Trade id
- Publication time
- Trading date and time of agreement
- Trade price
- Trade volume
- Trade type

- Venue of execution
- MMT flags

Trade Cancels & Corrections:

- Cancel identifying original ticket published
- Correction ticket including modified details

Information is provided in order execution and trade messages to allow flagging of trades in accordance with the FIX MMT (Market Model Typology) standard. Where the flag at a certain MMT level cannot be implied from alternative information provided, the actual field with the applicable flag set is provided. More information on the MMT standard can be found on the FIX Trading Community website.

11.4 Exchange Trade Statistics

Trade statistics refer to trades of the current business day and are calculated for each instrument and reported in real-time with every eligible trade.

In addition to real-time statistics, end-of-day statistics ("order book summaries") are reported per instrument.

11.4.1 Price & Volume Concepts

The following trade statistics are calculated in real-time with every eligible trade.

Trade Statistics	Description
Last Price Paid	The last price forming trade. Price of most recent execution in the order book or manual trade reported with trade type standard.
Opening price	Opening price from the opening auction uncross. If no uncross occurs or an opening auction is not configured for the respective market, the opening price is the first price forming trade price of the day.
High and Low Prices	Highest and lowest trade prices of the day, respectively, from order book trades and manual trades of type standard.
Total Volume	The total volume of all trades.
Total Turnover	The total turnover of all trades.
Number of Trades	The total number of trades published during the trading day
Reported Volume	The volume of manual trades published during the trading day.
Reported Turnover	The corresponding turnover of the reported volume.
Closing Price	Closing price is defined as the "last price paid" at time of closing.

***Table 25**: Real time Trade statistics*

Deferred block trades if eligible, will update the relevant statistics at the time of publication.

Cancellation or correction of a trade that has contributed to one or several statistics is updated accordingly.

OTC trade reports do not contribute to any of the trade statistics.

11.4.2 Price & Volume Concepts for Nasdaq Copenhagen

Price and volume statistics for Nasdaq Copenhagen uses instrument statistics and not order book statistics. Prices and volume statistics will be aggregated for all order books belonging to the same instrument level, i.e. the price concepts and volumes will be aggregated for all order books belonging to the same instrument (aka underlying Security). Except for auction order books (Trades in the CPH Standard Settlement Auctions product segment are included in the volume weighted average price.)

It means that the trade message will not include information about the last price for Danish fixed income instruments. This information will instead be available in the Genium Consolidated Feed, Instrument Statistics message (on-Exchange trades) and Instrument Statistics Extended message (OTC- and SI- standard trades published via Nasdaq APA). The post-trade statistics for the Danish market is supplied through Genium Consolidated Feed.

Trade Statistics for Nasdaq Copenhagen	Description
Last Price	The last price paid is defined as the latest price paid at any time for published transactions executed in the trading system or reported during (continuous) trading as standard trades, which are trades executed using standard market conditions in terms of price, time of the trade and standard delivery and settlement schedule. All standard trades inclusive of OTC- and SI- standard trades published via Nasdaq APA define the last price paid.
Nasdaq CPH Consolidated Reference Price	The Nasdaq CPH Consolidated Reference Price is calculated in the same way as the all-trades average price but inclusive of the standard OTC- and SI-trades published via Nasdaq APA during opening hours.
Opening price	The opening price is defined as the first price updating the Nasdaq CPH Consolidated Reference Price, including APA trades.
High and Low Prices	High and low prices are calculated based on the trades which update the Nasdaq CPH Consolidated Reference Price and are thus the highest price and the lowest price, respectively, among the trades which have updated the Nasdaq CPH Consolidated Reference Price of the trading day.
Closing price	Closing price is defined as the “last price paid” at time of closing that updated the Nasdaq CPH Consolidated Reference Price, including APA trades
Indicative closing price	If no “last price paid” exists, an indicative closing price will be calculated as the mid-price of the time weighted best bid and offer prices at close if: For mortgage bonds, government bonds and corporate and other bonds bids and offers must comply with the following criteria: • during the three opening hours prior to closing there must be both bid and offer prices for at least 95 pct. of that period. • the order volume must be at least one round lot for both bids and offers except Corporate Bonds which has round lot min=10.

	• maximum spread allowed is two points. • both bids and offers must be valid at the closing of the market For structured bonds the bids and offers must comply with the following criteria: • calculated as average of best bid/ask at close. • during the opening hours there must be both bid and offer prices for at least 85 pct. of that period. • the order volume must be at least 10 round lots for both bids and offers. • maximum spread allowed is four points. • both bids and offers must be valid at the closing of the market If an indicative closing price is calculated, that price will be considered the official closing price of that day.

Table 26 *Real time trade statistics for Nasdaq Copenhagen*

11.4.3 End-of-Day Statistics

At the end of the trading session, the system will determine and report end of day (or end of session) statistics for each order book.

The end of day statistics provides the final value of price and volume statistics.

The timing of generation of end of day summaries and their inclusion of trades are as follows.

- Final price statistics are reported after the close.
- Final volume statistics (volume and turnover) are reported before the Trading System closes. Will include Post-Close volume.

12 Market Safeguards

12.1 Pre-Trade Controls (Exchange-Defined)

Exchange-defined pre-trade controls include mandatory checks of prices and sizes to prevent erroneous order entries and trades.

The Trading System controls all order and quote entries, including the replace portion of a changed order, and rejects or cancels orders and quotes that exceed any of the applicable Exchange-defined price and size limits.

If an attempt to change an open order is not permitted by a pre-trade control, then technically the Trading System will acknowledge the receipt of the cancel/replace effectively accepting the cancel portion and instantly send a cancel notification for the replaced portion leaving no order in the order book.

Whenever an order or quote is rejected or cancelled due to a pre-trade control, the concerned user is notified with the applicable reject code in the trading protocol.

12.1.1 Limit Order Price Controls

To prevent obviously erroneous limit prices from aggressively sweeping through the order book, the Trading System rejects or cancels any order that exceed the applicable Exchange-defined price limit.

If one side of a quote entry exceeds the applicable price limit, the Trading System will automatically reject both sides of that quote entry.

12.1.1.1 Continuous Matching

Throughout trading phases with continuous matching, the Trading System calculates and applies one-sided price limits from a reference price so that an incoming buy order/quote with a limit price above the upper limit, and a sell order/quote with a limit price below the lower limit, is rejected (or reversed for instruments traded in yield).

Bid orders lower than the upper limit and ask orders above the lower price limit will be accepted.

The upper (lower) limit for an instrument is calculated by applying the acceptable price variation above (below) the applicable reference price at the time of entry.

The acceptable price variation is the greater of an absolute price variation and a percentage variation of the reference price. The price limits adjust dynamically throughout the trading phase as the reference price is updated. The lowest limit is always the greater of the smallest tick size and the calculated value. In case the upper (lower) price limit is calculated off tick, it is aligned down (up) to the nearest valid limit price.

In continuous matching, price limits do not prevent bids (offers) below (above) the current market.

12.1.1.1.1 Reference Price Selection

For the purpose of this section “LP” means the last paid price of the day. This is the official last paid price in trade statistics as opposed to the last execution price in the order book. This may include eligible manual trades reported to the Exchange.

The reference price for the lower and upper limits, respectively, is determined as shown in the table below.

Order book	Status	Lower limit Ref.	Upper limit Ref.
Bid-offer spread available	LP at or within the BBP spread	LP	
	LP through the best bid or offer	Best bid	Best offer
	If no LP available	Best bid	Best offer
Offer(s) only	LP below best offer	LP	Best offer
	LP through the best offer	Best offer	
	If no LP available	Best offer	Best offer
Bid(s) only	Best bid below LP	Best bid	LP
	LP through the best bid	Best bid	
	If no LP available	Best bid	Best bid
No prices	Bid or offer not available	LP	
No prices and no Last paid price	Bid or offer not available and no last paid price	Ever last paid price (the latest paid price from previous trading days)	

***Table 27**: Reference Prices for lower and upper price limits*

1. For extremely illiquid instruments it is possible for the Exchange to manually insert a reference price in case price limits hinder orderly trading and order management. This may be considered in cases where the only prices available are old and do not reflect current market value of the instrument.
2. In cases where no bid, offer, last paid or ever last paid price is available at the time of order entry, the price limits cannot be carried out.
3. Undisclosed Orders and visible MAQ orders are not included in the bid-offer spread for reference price selection.

12.1.1.2 Auction trading mode

Throughout Auctions trading mode (opening, closing and volatility Auctions) the Trading system calculates and applies two-sided price limits from a reference price so that incoming orders and quotes with a limit price above the upper price limit, or below the lower price limit, are rejected.

Auction Reference price

The reference price used to calculate the price limits during the auction phases is the latest paid price or the ever latest paid price, whichever is the most current.

12.1.2 Market Order Price Controls

To prevent erroneous trade prices from market orders during continuous matching, the Trading System uses price limits to perform controls for market order entries and will match until they reach the trade range as follows.

12.1.2.1 Market Order Trade Range

Whenever a market order entry passes, the Trading System determines the acceptable trade range using the same price limits as for limit orders as follows.

- The acceptable market order trade range for buy (sell) orders is up (down) to and including the upper bid limit (lower ask limit).
- A market order with time-in-force FOK is cancelled in full in case the whole order cannot be filled within the acceptable trade range.
- A market order is by default with time-in-force IOC and will execute against prices within the acceptable trade range. Any remaining part that is not filled is cancelled.

12.1.3 Linked order price controls

When entering a linked order Trading system will look at each of the legs upon entry and reject if above the upper/lower limits as described for limit orders here above. If any leg of a linked order is above/below the Exchange-defined price limit, the system will reject the entire order.

12.1.4 Order Size Controls

To prevent exceptionally large order sizes from entering the order book, the Trading System rejects any order that exceed at least one of the two applicable size limits defined for the instrument by the Exchange.

The two size limits that applies to each instrument are defined as follows.

1. **Maximum order volume:** The maximum order quantity in terms of volume.
2. **Maximum order value:** The maximum value of the order quantity

For the maximum value control on market orders, the Trading System uses the last paid price or if no such price available, then ever last paid price is used.

12.1.5 Throttling limits

In order to protect the Trading System, and the Member in event of excessive messaging over a single connection, system wide limitations will be applied per port. The limitation in number of messages per/s per port can be obtained from the European Market Operations (EMO@Nasdaq.com).

12.2 Circuit Breakers

This section describes how triggering conditions are defined and monitored for the Trading System's different circuit breaker mechanisms.

A circuit breaker is an automatic mechanism for temporarily constraining trading in case there is a sudden significant price movement. A Circuit breaker will be triggered when a possible match deviates too much from the reference price and the order book will change trading mode to auction (volatility auction).

When the circuit breaker is triggered, continuous trading is halted followed by either a volatility auction period or a volatility stop with no auto matching, after which the order book moves back to continuous trading.

The static threshold method is used during the main Continuous Trading session state and is defined in terms of an absolute variation against

- today's most recent auction price;
- else if no auction price is available, then yesterday's closing price is used.
- Exchange set price.

In cases where no prices are available the circuit breaker cannot be carried out.

When a circuit breaker is triggered for a given instrument, the resulting orderbook state changes to either volatility auction or a volatility stop depending on configuration.

If a volatility auction is configured for a market during continuous trading the length of the auction will be 120 seconds, and during this state order management is allowed and matching is carried out according to the same rules as the opening or closing auction trading modes. The auction period always ends with an uncross. Right after the uncross the order book moves into continuous trading again.

If, instead of a volatility auction, a volatility stop is configured for the market then the length of the volatility stop is 60 seconds.

For markets that do not make use of an opening auction or closing auction, i.e. only continuous matching, then triggering circuit breakers will always result in a volatility stop.

For circuit breaker threshold please contact EMO@nasdaq.com.

12.2.1 Volatility Auction

For markets that make use of an opening or closing auction, the triggering of a circuit breaker will result in a volatility auction.

The volatility halt mechanism is active during continuous trading mode and automatically interrupts trading in case a circuit breaker triggering condition is detected.

When attempting to match an incoming order or quote, the Trading System checks each possible match price against the defined triggering conditions, and if a condition is met, the following happens:

- The arriving order is prevented from immediately executing at the triggering price.
- If the arriving order is an IOC or a FOK order it is cancelled; otherwise
- The circuit breaker is triggered and interrupts trading; the remaining unfilled portion of the incoming order is entered into the order book where it participates in the Call Auction.
- Any partial executions of the arriving order within the matching event that in sequence took place before the circuit breaker was triggered generate valid trades.

The Trading System notifies the user whose aggressive order triggers a circuit breaker and moves to a call auction state, following the same rules for order management and matching as the opening or closing auction trading modes.

12.2.2 Volatility Stop

For markets that do not make use of an opening or closing auction, the triggering of a circuit breaker will result in a volatility stop.

When trading is interrupted due to a circuit breaker, the order book switches state to volatility stop.

When attempting to match an incoming order or quote, the Trading System checks each possible match price against the defined triggering conditions, and if a condition is met, the following happens:

- The arriving order is prevented from immediately executing at the triggering price and it is cancelled.
- Market maker quotes are automatically cancelled.
- Order management is limited: Users can cancel existing orders but not enter new or change existing.

The duration of a volatility stop is 60 seconds. After the volatility stop the order book switches back to the applicable continuous trading state.

12.2.3 No-uncross period

For instruments with a closing auction configured, the last 180 seconds, and for instruments without closing auctions the last 180 seconds of a continuous matching phase is a no-uncross period, meaning special handling for circuit breakers apply as follows.

If a closing auction is configured for the relevant instrument and if a circuit breaker is triggered within this time window, then the concerned instrument will change state to a volatility auction and remain in this state until the closing auction phase. At the time of the closing auction, the instrument will shift from volatility auction to closing auction, respectively, without uncrossing in the transition.

If a closing auction is not configured for the relevant instrument and a circuit breaker is triggered in the last 180 seconds of continuous trading then the deviating order will be rejected (as opposed to accepted) and the concerned instrument will change state to and remain in Volatility Stop (as opposed to call Auction) until Post-Close.

12.3 Self-Match Prevention

The Self-Match Prevention (SMP) mechanism is an optional safeguard available to members. It can be used for preventing unintentional self-matching of certain orders and quotes within the same participant (MPID).

If a participant has the functionality enabled, then in continuous matching before executing an aggressive order or quote with a matching order or quote that rests in the order book, the Trading System first checks if the matching orders/quotes have been entered by the same participant (associated with the same MPID) and if they carry the same SMP ID code. If the two conditions are met, then the orders/quotes are prevented from executing against each other and the passive order or quote

is automatically cancelled by the Trading System. The SMP conditions are checked, regardless of if it is a new or replaced order/quote that results in a possible match.

- **Time Priority Matching:** The participant's resting order is not cancelled until all orders at the same price ranked ahead in the order book has been executed and the participant's two orders otherwise would execute against each other.

In sequence after the resting order or quote has been cancelled by SMP, the Trading System continues to process the incoming order or quote according to the order instructions. This means that depending on the price it can go on and continue executing aggressively and may sweep through price levels. Any unfilled portion is then cancelled or added in the order book depending on the time-in-force.

The SMP functionality is only supported for orders and quotes in individual instruments and is only active during continuous matching. SMP does not apply in the uncrossing procedure at the end of auctions.

The SMP ID allows members further granularity in their control of which orders/quotes within the participant that should be prevented from matching with each other. The member defines the usage of the values and users flag orders accordingly. This means that certain users within the same participant can prevent their own orders from self-matching while other users do not.

Members may request the SMP mechanism to be activated for a given MPID by completing the required form via the Member Portal.

12.3.1 Triggering Examples

The following first example illustrates how the SMP is checked and triggered in a price-internal-visibility-time priority book.

Example: SMP in Price-internal-visibility-Time Priority Matching

Consider the below bid side of a given order book where MPID "AAA" has SMP active.

In this situation, AAA enters a sell order of 20 at market with SMP ID = "1".

Ord ID	MPID	SMP ID	Qty	Price
T1	AAA	2	10	10.00
T2	AAA	1	10	10.00
T3	AAA	5	10	10.00
T4	AAA	1	10	10.00
T5	CCC		10	10.00
T6	DDD		10	10.00
T7	AAA	1	10	9.90

Result: Order T2 is cancelled by the SMP mechanism and the incoming order is fully executed against T1 and T3. As the trade priority at this price level do not reach T4, that order remains on the book.

12.4 Kill Functionality

12.4.1 Member Kill Switch

The kill switch mechanism is an optional functionality available via the trading protocols.

If triggered for a participant (MPID) the functionality automatically mass-cancels all working orders and quotes in all instruments across connections for that participant. Additionally the kill switch blocks the ability to enter new orders and quotes for the concerned participant.

The kill-switched participant remains blocked until re-activated by the Exchange.

Members may request the Exchange to configure the special entitlement on specific FIX ports to submit a kill switch request for a participant. Any kill switch request submitted on an unauthorised port will be rejected.

12.4.2 Cancellations by the Exchange

Upon request, the Exchange can on behalf of a member cancel open orders and quotes in case the member is technically unable to delete its own orders and/or quotes.

Members submit such cancellation request by phone or e-mail to the Exchange and provide details on the relevant MPID(s) and Trader ID(s) and for which instrument(s) orders and/or quotes are to be cancelled.

The Exchange execute cancellation requests manually on a best-effort basis in accordance with the conditions provided by a member. Order cancellation requests are processed during trading hours.

12.5 Cancel on Disconnect

The Cancel on Disconnect (COD) mechanism is an optional safeguard available to members. If enabled the functionality automatically cancels orders and quotes in case a port is disconnected.

For orders, members can request the Exchange to configure the functionality per FIX port. If active, orders will be cancelled in case of an unintentional disconnect.

There are three configuration options available that determines how orders on the concerned port are handled in case the connection is lost as detailed below.

1. **Keep all:** The functionality is disabled.
2. **Cancel day:** Open day orders are cancelled.
3. **Cancel all:** All open orders are cancelled.

Appendix A - Deferred publication

Nasdaq Nordic allows waivers from the principle of immediate publication of a reported manual trade if the trade meets the criteria described below for each respective Exchange.

Nasdaq Copenhagen

Manual trades must be reported immediately or no later than 5 minutes from time-of agreement.

For on-Exchange trades, Nasdaq Copenhagen allows waivers from the principle of immediate publication of a reported trade if the trade meets the criteria described below.

For manual trades in mortgage (covered) bonds and corporate bonds the minimum trade size is the post-trade SSTI or post-trade LIS (depending on whether the investment firm trades from its own-account or not) or a specific threshold volume specified by the **Danish FSA (DFSA)** - whichever is the highest threshold volume.

Manual trades in government bonds shall also be reported to Nasdaq Copenhagen immediately or no later than 5 minutes from time-of-agreement. Publication of trades equal to or larger than Post-trade LIS (SSTI for own account trades) may be deferred until end of day T+2. Manual trades in other bond types (Other Public, Convertible and Other) only have a LIS deferral waiver and the deferral period is End of Trading Day.

The minimum trade sizes required to qualify for deferred publications are defined in the table below for mortgage bonds and corporate bonds. The relevant thresholds are the ones expressed in the same currency as the order book in the respective instruments, e.g. for bonds traded in Euro, the Euro thresholds apply.

Deferral	Mortgage bonds	Corporate Bonds	Government bonds	Other bond types
End of day	Post trade SSTI/LIS/DFSA threshold or equivalent in other trading currencies	Post trade SSTI/LIS/DFSA threshold or equivalent in other trading currencies	-	LIS
T+2			LIS, SSTI	-

***Table 28**: Deferrals for Nasdaq Copenhagen*

Auto match deferrals for Nasdaq Copenhagen

Auto match deferrals are available end of day. Selected instruments on the following markets offer deferred publication of Auto Match trades:

- CPH Cash Bond
- CPH FN Bond Market

For Auto-Match trades in mortgage (covered) bonds and corporate bonds the minimum trade size is the post-trade SSTI or post-trade LIS (depending on whether the investment firm trades from its own-account or not) or a specific threshold volume specified by the **Danish FSA (DFSA)** - whichever is the highest threshold volume.

Nasdaq Stockholm

For on-Exchange reported trades (manual trades), Nasdaq Stockholm allows waivers from the principle of immediate publication of a reported trade if the trade meets the criteria described below.

Deferral	Government and Mortgage bonds	Corporate bonds and defeOther bonds
T+2 (including T+1 aggregate of minimum 5 transactions) (DATF)	-	Illiquid, SSTI, LIS
T+4 weeks (including T+1 aggregate of minimum 5 transactions) with T+2 volume omission (VOLO)	ILLIQUID, SSTI, LIS	-

***Table 29**: Deferrals for Nasdaq Stockholm*

Three types of deferral thresholds are allowed:

- Illiquid: Trades above the defined illiquid threshold may be deferred.
- SSTI: Trades with capacity principal and size above the SSTI threshold can be deferred.
- LIS: Trades above the LIS threshold may be deferred.

Nasdaq Helsinki

For on-Exchange reported trades (manual trades), Nasdaq Helsinki allows waivers from the principle of immediate publication of a reported trade if the trade meets the criteria described below.

Deferral	Government and Mortgage bonds	Corporate bonds and Other bonds
T+4 weeks with a T+2 volume omission	Illiquid, SSTI, LIS	Illiquid, SSTI, LIS

***Table 30**: Deferrals for Nasdaq Helsinki*

Three types of deferral thresholds are allowed:

- Illiquid: Trades above the defined illiquid threshold may be deferred.
- SSTI: Trades with capacity principal and size above the SSTI threshold can be deferred.
- LIS: Trades above the LIS threshold may be deferred.

Appendix B - Sold-Out Buy-Back

Sold-Out Buy-Back (SOBB) is a functionality which is optional to use and can be applied on instruments the following Product Segments:

- STO Structured Products
- STO Structured Products Units
- STO Structured Products NOK
- STO Structured Products CCY
- STO Tailor Made Products
- STO Sustainable Products
- STO FN Structured Leveraged Products
- HEL Retail Structured Products.

The issuer or the lead manager, assigned by the issuer as distributor, can activate SOBB for instruments under certain circumstances, for example when the issuer or the lead manager might have sold out on its inventory or do not want to sell more quantity.

When the issuer or the lead manager has decided to initiate SOBB status for specific instruments it is done by submitting a SOBB-request via FIX.

The status can only be initiated during continuous trading and will flush the order book of all current active orders and active RfQs. Once initiated, the SOBB state will persist for the current trading day and it is not possible to change SOBB status back to continuous trading.

If the issuer or the lead manager requires having a SOBB status exceeding one trading day, the issuer or the lead manager must reinitiate SOBB status on the following trading day during continuous trading.

During the SOBB status the following order management is allowed:

- Only orders with time validity Day are allowed.
- Modification and cancellations are also allowed.
- Only the issuer or the lead manager, as defined by the Exchange, may submit
  - Buy and sell orders
  - Bid and ask quotes
- Other participants:
  - IOC (Immediate-Or-Cancel) sell orders only
- RfQ is not allowed during SOBB state
- Trade reporting is allowed, where configured.

Any buy orders or bid quotes that are not sent in by the issuer or the lead manager during the SOBB status will be rejected. Any non-IOC ask orders sent in by other participants will also be rejected.

Market safeguards during SOBB

Normal validations against Price Limits shall be made during SOBB. Max Order Value, Max Order Volume shall be validated according to existing configuration as seen in chapter 12 above.

Circuit breakers will apply during SOBB. If a circuit breaker is breached during SOBB state and the orderbook enters a volatility auction then order management rules are the same as in a SOBB state.

That is, Issuers/lead managers can enter Day (BID and ASK) - Quotes and Orders. Other participants can only enter IOC Ask orders.

Halt & Resume during SOBB

When an orderbook in a SOBB state is halted it is resumed in a SOBB state. Same rules apply when entering halt state. That is, if book is halted due to a regulatory halt then orderbook is flushed and if the book is halted due to a technical halt then all quotes are flushed.

If the orderbook is resumed in an auction (as is normally the case) then same rules apply as to two-sided auctions in SOBB state, i.e. only issuers can enter Day (BID and ASK) - Quotes and Orders. Other participants can only enter IOC Ask orders.

Appendix C - Issuing Auctions (one-sided auctions)

Exchanges support issuing and buy-back auctions in instruments that are traded on price or on yield.

Issuing auctions are used by members and issuers to issue new debt (issuing auction) or buy back debt from the market (buy-back auction). It is also used for equity IPOs on the Baltic Exchanges.

The following volume allocation models are supported on the fixed income markets:

- FIFO, first in first out, where orders are matched given their price and time priority.
- Total (proportional) pro rata allocation where orders are matched according to price and size and allocated volume on a pro rata basis.

Price-time (FIFO) allocation

When the price-time (FIFO) volume allocation model is enabled the allocation of orders shall be carried out according to the following steps:

- Orders better than the Equilibrium Price (EP) are always filled.
- Orders at the EP are filled in time priority order (oldest timestamp first)

Price-time (FIFO) volume allocation model shall be applied in Issuing Auctions with Minimum allocation volume (MAV) requirement.

The following prerequisites must be adhered to when running issuing auction with MAV requirement:

- Minimum allocation quantity shall match with round lot size
- Minimum allocation quantity shall match with Minimum Quantity
- Order entry at multiples of minimum quantity only.

Total (proportional) pro rata allocation

When the total pro rata volume allocation model is enabled the allocation of orders are carried out according to the following steps:

- Orders better than the Equilibrium Price (EP) are always filled.
- Orders at the EP are filled in proportion to their order size.
- The allocated quantity is rounded up to the nearest round-lot.
- If two or more orders display the same quantity, then allocations to those orders are determined in time priority order (oldest timestamp first).

  Prorata allocation model can not be applied in Issuing Auctions with Minimum allocation volume (MAV) requirement.

The following example shows the Total Pro Rata allocation (round-up) model:

Buy Side >>>					
	Tot	Qty	Price	Allotment round up (1 Round)	Qty left for allocation
	30	30	100,2	6	12
	50	20	100,2	4	8
	65	15	100,2	3	5
	80	15	100,2	3	2
	95	15	100,2	2	0

The total bid volume (qty) is 95 and the issuer submits an order to sell 18.

The orders are then allocated volume according to their size, giving:

- the largest order is allocated 30/95*18 = 5.684 which is rounded up to 6
- the second largest order is allocated 20/65*18 = 3.692 which is rounded up to 4
- If two or more orders display the same quantity, then allocations to those orders are determined in time priority order (oldest timestamp first).
- 15/45*8 = 2.666 which is rounded up to 3
- 15/30*5=2.5 which is rounded up to 3
- 15/15*2=2.

Appendix D - MAQ on Orders

MAQ Definition

The MAQ shall be defined as the actual quantity (volume) that needs to be met. There is no connection or restriction with regards to the value of the minimum size limit and what value can be set as the MAQ.

Trading Sessions and Validity

MAQ orders can participate in the auctions with the MAQ requirement temporarily waived. That is, MAQ orders can participate in both auctions and the continuous market; however, the "MAQ requirement" will be enforced only during the continuous market.

Pre-Open

Order entry is not allowed in pre-open.

Opening Auction

For markets with an opening auction undisclosed orders with a MAQ can be entered during the opening auction, but MAQ will not be honoured meaning that in the uncross, matching of a MAQ order is possible where matched quantity is below the minimum acceptable quantity (MAQ) on the order.

Continuous Trading

During continuous trading, Undisclosed orders with a MAQ can be entered as Limit orders only. Visible orders with a MAQ can be entered both as a limit order and a market order.

Non-scheduled Intraday Auction

A non-scheduled intraday auction after circuit breaker or trading/matching halt, Non-displayed Orders with a MAQ will participate in the auction but MAQ will not be honoured.

Closing Auction

Undisclosed orders with a MAQ will participate in the closing auction but MAQ will not be honoured.

Time Validity

Displayed and undisclosed orders with MAQs can be entered with the following time validity:

- GTD (Good Till Date)
- Day
- GTC (Good Till Cancel)
- Immediate or Cancel (IOC)
- FoK

In addition undisclosed orders with MAQ can be entered as On-Open/On-Close for markets that have an opening and/or closing auctions.

Trades / Partial match

Aggregation rule

Aggregation is only supported for incoming orders. In this case we do allow teaming on the opposite side, that is, we will allow partials for less than the MAQ, as long as the net volume executed surpasses the MAQ. Doing so we allow support for FOK as simply being an IOC + AON (MAQ=total Quantity).

Orders not cancelling after leaves fall below MAQ

In a situation when the leaves quantity drops below the MAQ, the system will automatically adjust the MAQ so that the remaining volume are executed AON (all-or-none).

For example, say that we have on our book one buy orders of 900 shares, and we then receive a sell order for volume 1000 with a MAQ of 300. This results in leaves quantity of 100, with a MAQ equal to that volume (AON).

Appendix E - Linked orders

Linked orders provide the functionality to support trading strategies of choosing to trade either "one or the other" of two or up to five instruments. Linked orders are especially useful when trading bonds, where several very similar bonds might be available, and a participant wants to buy one but is indifferent of which.

Every match made on a linked order results in all legs are cancelled. Maximum number of legs that a linked order entered into the system can contain is 5 legs.

Linked orders are only available on the STO EIM Super Benchmarks market.

Linked order management

Linked orders are only allowed during Continuous Matching.

Linked orders can only be entered with order type limit and with time in force end of day, and the fact that they are linked will not be made publicly available. Any amendment to a linked order will result in a cancel replace.

Linked orders may not have reserve quantity or any other order attribute.

Self-match prevention ID is the same on all legs meaning if self-match happens on first leg, the whole order is cancelled and prevented from matching.

If a circuit breaker is triggered, the incoming linked order will be cancelled, and instrument will enter volatility stop. Resting linked order will remain in orderbook during a volatility stop.

Entering linked orders requires specifying the order book of each leg including the side, price, quantity. The quantities and prices can differ.

On entry, and using the sequence in which the legs are specified on the order, each leg will be checked to see if it is immediately executable. All legs have the same TimeInForce.

E.1 Linked order examples

Example 1 – aggressive incoming linked order:

Orderbook A					
Participant	Bid Qty	Bid Price	Ask Price	Ask Qty	Participant
A	100	90,7	90,8	100	C
B	100	90,6	90,9	100	D

Orderbook B					
Participant	**Bid Qty**	**Bid Price**	**Ask Price**	**Ask Qty**	**Participant**
A	100	90,7	90,8	100	C
B	100	90,6	90,9	100	D

Orderbook C					
Participant	**Bid Qty**	**Bid Price**	**Ask Price**	**Ask Qty**	**Participant**
A	100	90,7	90,8	100	C
B	100	90,6	90,9	100	D

Action: Participant E enters a linked order with three legs:

- Leg 1: Orderbook A: Bid 100@90,7
- Leg 2: Orderbook B: Bid 100@90,7
- Leg 3: Orderbook C: Bid 180@90,9

Result: Leg 1 and Leg 2 is entered in the orderbooks and leg 3 (Orderbook C) will execute against participant C and D's orders. The following trades are created:

- E-C: 100@90,8
- E-D: 80@90,9

This results in the first and second legs are cancelled and thus are cancelled from Orderbooks A and B. The status of the orderbooks are as follows:

Orderbook A					
Participant	Bid Qty	Bid Price	Ask Price	Ask Qty	Participant
A	100	90,7	90,8	100	C
B	100	90,6	90,9	100	D

Orderbook B					
Participant	**Bid Qty**	**Bid Price**	**Ask Price**	**Ask Qty**	**Participant**
A	100	90,7	90,8	100	C
B	100	90,6	90,9	100	D

Orderbook C					
Participant	**Bid Qty**	**Bid Price**	**Ask Price**	**Ask Qty**	**Participant**
A	100	90,7	90,8	20	D
B	100	90,6	90,9		

Example 2 – passive linked order in the book:

Participant C has the following linked order in the orderbooks (linked order in bold) and the orderbooks look like this:

Orderbook A					
Participant	Bid Qty	Bid Price	Ask Price	Ask Qty	Participant
A	100	90,4	**90,5**	**100**	**C**
B	100	90,3	90,8	100	D

Orderbook B					
Participant	**Bid Qty**	**Bid Price**	**Ask Price**	**Ask Qty**	**Participant**
A	100	90,6	**100**	**100**	**C**
B	100	90,5	105	100	D

Orderbook C					
Participant	**Bid Qty**	**Bid Price**	**Ask Price**	**Ask Qty**	**Participant**
A	100	90,7	**90,8**	**100**	**C**
B	100	90,6	90,9	100	D

Action: Participant E enters an order in Orderbook B: 10@100

Result: The following trade is created:

- E-C: 10@100 in Orderbook B.

Furthermore, the linked order legs in all orderbooks from participant C (the whole linked order) is cancelled.

The status of the orderbooks are thus as follows:

Orderbook A					
Participant	Bid Qty	Bid Price	Ask Price	Ask Qty	Participant
A	100	90,4	90,8	100	D
B	100	90,3			

Orderbook B					
Participant	**Bid Qty**	**Bid Price**	**Ask Price**	**Ask Qty**	**Participant**
A	100	90,6	105	100	D
B	100	90,5			

Orderbook C					
Participant	**Bid Qty**	**Bid Price**	**Ask Price**	**Ask Qty**	**Participant**
A	100	90,7	90,9	100	D
B	100	90,6			

Appendix F - Minimum size requirements for Non-displayed orders

Non-displayed orders must satisfy minimum size requirements. If the volume was reduced due to a partial execution, the order remains non-displayed even when smaller than the minimum size requirements.

A hidden order will be accepted if the following criterion is fulfilled:

If the quantity is as high or higher than the size requirement limit (pre-trade Large in Scale for liquid instruments).

Non-displayed orders that do not meet the minimum size req

uirement will be automatically rejected.

For instruments deemed liquid by ESMA the minimum size is required to be at or above the pre trade LIS threshold set by ESMA.

For instruments deemed illiquid by ESMA the following applies based on markets:

Exchange	Minimum size threshold for illiquid instruments
Nasdaq Stockholm	No threshold
Nasdaq Copenhagen	Pre-trade LIS threshold set by ESMA
Nasdaq Helsinki	No threshold
Nasdaq Iceland	100.000.000 (volume)
Nasdaq Riga	No threshold
Nasdaq Tallin	No threshold
Nasdaq Vilnius	No threshold

***Table 31**: Minimum size thresholds for illiquid instrument for undisclosed orders*

Appendix G - Bilateral Settlement of Fixed Income Cash Securities

All trades in fixed income instruments are settled bilaterally between members. The place of settlement is registered in the trading system and disseminated as market data.