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PREFACE

PURPOSE

This document sets out the client messages specifications for Optiq® OEG using the SBE format. More specifically, it describes the contents of administrative and application messages and provides detailed field descriptions.

ASSOCIATED DOCUMENTS

The following list identifies the associated documents, which either should be read in conjunction with this document, or which provide other relevant information for the user:

- Luxembourg Stock Exchange - Optiq OEG Client Specifications – FIX 5.0 Interface
- Luxembourg Stock Exchange - Optiq Kinematics Specifications
- Luxembourg Stock Exchange – CCG to OEG Change Highlights
- Luxembourg Stock Exchange - Optiq OEG Connectivity Configuration specifications
- Luxembourg Stock Exchange - Optiq MDG Client Specifications
- Luxembourg Stock Exchange - Optiq Error List

Optiq documents & files:

- Optiq File Specification
- Optiq Technical Note SBE
- Optiq OEG SBE XML message template

Clients are advised to also refer to the Luxembourg Stock Exchange Rules and Regulations documents for more details.

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WHAT'S NEW?

All the updates are listed at the end of this document; please refer to the Appendix.

Version	Change Description
1.0.0	First version for Luxembourg Stock Exchange on Optiq

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1. SOLUTION OVERVIEW

1.1 INTRODUCTION

The Exchange Optiq Order Entry Gateway (OEG) provides high-speed and real-time connection to the Exchange market.

The system has the following high-level features:

- **Predictability**
- **Ultra-low latency**
- **MiFID II compliance**
- **High availability**
- **Reliable network solution**
- **High level of scalability**

This document provides detailed information about the features of the system to support the development of client applications.

1.2 MIFID II RELATED CHANGES

The following sections describe the changes introduced in the messages or system functionalities based on the MiFID II requirements and related services provided by Exchange to its clients.

In this document term MIFID II includes MIFID (2014/65/EU), MIFIR EU (600/2014) as well as the texts of level 2 and 3.

1.2.1 Maintenance of Relevant Data relating to Orders in Financial Instruments

The delegated act "supplementing Regulation (EU) No 600/2014 of the European Parliament and of the Council with regard to regulatory technical standards for the maintenance of relevant data relating to orders in financial instruments" issued by ESMA within the MiFID II requires trading venues to be able to supply to the regulators a wide range of order related data. In order to fulfil this requirement, members are requested to provide data in the additional fields introduced in the Optiq messages, e.g. **NewOrder** (01) message. The sub-set of fields added to different messages for compliance with the acts are listed in the table below. These fields are also included in the description of each individual message:

Field in the Act	Optiq fields (SBE & FIX)	Used In
Client identification code	ClientIdentificationShortCode	New Order (01) Cancel Replace (06) Cancel Request (12) Mass Cancel (13) Open Order Request (15) Ownership Request (18) Collar Breach Confirmation (20) Price Input (28) User Notification (39)

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Investment decision within firm	InvestmentDecisionWFirmShortCode	New Order (01)
Execution within firm	ExecutionWithinFirmShortCode	New Order (01) Cancel Replace (06) Cancel Request (12) Mass Cancel (13) Open Order Request (15) Ownership Request (18) Collar Breach Confirmation (20) Price Input (28) User Notification (39)
Non-executing broker	NonExecutingBrokerShortCode	New Order (01)
MiFID Indicators	MiFIDIndicators	New Order (01) Cancel Replace (06)
Trading Capacity	Trading Capacity	New Order (01)

To reduce latency impacts associated to the addition of these new fields and to avoid sensitive information from being routed over the non-encrypted order interface, the optimized representation of this data will be transmitted to Exchange via short codes, which may be provided by clients by end of business on the trading day when trade has occurred using the process described below:

- Clients will have access to the Customer Web portal where they will be able to input the MiFID II compliant data for each required field. This data could be associated to the short codes, which may also be provided by the clients via the Customer Web Portal. For Example:
  - To identify a non-DEA client on behalf of which an order was entered in the system, members are requested to enter their MiFID II Client identification code (as described in the associated act): Where the client is a legal entity, the LEI code of the client shall be used. Where the client is not a legal entity, the National ID shall be used.
- When this code is entered, the clients will be able to assign a short code to it in the Customer Web Portal. This short code may be used in the **NewOrder** (01) message in the field *ClientIdentificationShortCode*.
- For clients using algorithms in their trading, guidelines for the way they should generate and populate the short codes associated to the executing (*ExecutionWithinFirmShortCode*) and investment decision making (*InvestmentDecisionWFirmShortCode*) are:
  - When an order message is flagged with the Algo Indicator set to value “0: No algorithm involved” then all positive values (from 0 to 2^31-1) would represent a human trader.
  - If the indicator is set to “1: Algorithm involved” clients are requested to populate this field with the ranges of values identified below. No checks would be performed to validate correctness of the ranges used by the system:
    - In–house algorithms: with positive range of values between 0 to 2^31-1
    - ISV algorithms: negative range of values between -2^31+1 to -1

Clients should take the following into consideration for population of short codes in inbound messages:

- *ExecutionWithinFirmShortCode* is mandatory to be provided in all inbound application messages;
- *InvestmentDecisionWFirmShortCode* is mandatory to be provided in when the order is flagged as Liquidity Provider, Related Party or House. It does not apply if an order is flagged as DEA. It is optional in other cases.

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- *ClientIdentificationShortCode* is mandatory when an order is flagged as Client, RO or DEA. It is optional is other cases.
- *NonExecutingBrokerShortCode* is optional in all cases.

In order messages short codes are used for regulatory reporting. In most other messages these codes if identified are to be used for Kill command.

1.2.2 Reporting to Competent Authorities

MiFID II requires market participants to report additional transaction information to the regulators. The requirements for this reporting are summed up in the delegated act "supplementing Regulation (EU) No 600/2014 of the European Parliament and of the Council with regard to regulatory technical standards for the reporting of transactions to competent authorities" issued by ESMA within the MiFID II Regulatory Technical Standards. Exchange will provide an Approved Reporting Mechanism (ARM) service to its clients, which would allow them to comply with these requirements in a stream-lined manner.

Clients established within the European Union, will be able to subscribe to this optional supplementary service. For clients established outside of the European Union the reporting will be done by the exchange on a compulsory basis, with client participation in the service and provision of data required by this act being mandatory.

1.3 FUTURE USE

In preparation for various functionalities expected to be implemented in the future on Optiq a number of messages and fields were added and flagged "For Future Use"

Details of functionalities flagged in the specifications as for 'Future Use' are provided for information purposes only, and may change significantly until such time as the finalised specifications for the relevant service are communicated to clients.

The associated messages and effective use of fields will not be technically supported on day 1 implementation of Optiq for the Exchange's market. Use of these fields in inbound messages will lead the message to be rejected by the system.

This behaviour applies to:

- **Messages** flagged as 'For Future Use' ;
- **Fields** flagged as 'For Future Use', 'Pending Regulatory Approval' and when Used For is set to '[N/A for LuxSE]'
- **Values** flagged with '[D]'.

Note: Fields and Values for future in the messages structures are represented in *italic and in grey*.

1.4 GLOSSARY

This section provides some high level definitions of commonly used terms in this document. Please note that some of these terms are described in more details in the dedicated sections within this document.

- **Optiq:** is Exchange's multi-market full trading chain technology platform.

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- **Order Entry Gateway (OEG):** is the software that manages the access for exchanges' clients, and acts as the private interface between the clients and the Optiq matching engine.
- **Market Data Gateway (MDG):** is the software that provides high-speed, real-time market data (public messages) for the Exchange market.
- **Matching Engine:** is the software that manages the trading services for the Exchange market.
- **Optiq Segment:** defines a universe of instruments habitually sharing common trading properties. An OPTIQ Segment can contain one or several asset classes. An OPTIQ Segment access is setup through a Logical Access.
- **Partition:** is a technical subdivision of an Optiq Segment. An Optiq Segment may be comprised of at least one or several partitions, physically independent one from one another, but connected to each other within the context of the Optiq Segment. Instruments may move from one partition to another within an OPTIQ segment.
- **Logical Access:** is an OEG (Order Entry Gateway) entry point, setup for clients to connect to a single OPTIQ Segment, containing the technical configuration for the client's connectivity. Multiple logical accesses can share the same SFTI line.
- **OE Session:** the individual physical connection, to a single Partition. A single Logical access may have as many OE sessions as there are partitions in the Optiq segment.
- **Simple Binary Encoding (SBE):** is the open source binary protocol used as the solution for market data and order entry messaging in Optiq. SBE was designed within the FIX Protocol Limited organization, with a focus on low-bandwidth utilization and the goal of producing a binary encoding solution for low-latency financial trading.
- **Symbol Index:** is a unique system-wide identifier (in private and public messages) assigned to a trading instrument in Optiq. Note that an instrument here represents either a single tradeable instrument, an index or a strategy. It represents the combination of the following instrument characteristics: ISIN, MIC, Currency and when required the MIC of the Market of Reference,. SymbolIndex will not change over the lifetime of the instrument, but can take a different value for the same instrument, depending on the environment (Prod or Test).
- **Message:** is a discrete unit of communication, provided in pre-defined format, which depends on the chosen protocol and the target functionality it relates to, containing information exchanged between Exchange and its clients, to enable trading on its systems.
  - **Administration message** is an electronic instruction from client or response from the OEG used to exchange technical, non-trade related information, most notably used to setup and maintain connectivity between a client and an OEG.
  - **Application message** is an electronic instrument from a client or a response from the OEG, used to exchange order and trade related information, including requests and events that impact orders and trades, but do not directly represent them.
  - **Order:** An order is an electronic instruction from a firm to buy or sell an instrument via Optiq. Firms can send many types of buy and sell orders that are matched upon arrival or placed in the order book to await a match.
  - **Trade:** A trade is an electronic agreement between the client(s) that submitted the order(s) to exchange for a certain quantity of one or more instruments, for one of the various forms of reimbursements (payment, exchange of goods, services, etc.).
- **Standing Data:** provides referential data characteristics of all trading instruments available on Exchange market. The data is provided via files and messages.

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  - **Standing data files** contain referential data characteristics of the trading instruments and strategies that may be required, or provided as value-added information. These files are provided on a daily basis and can be obtained from a separate HTTPS service.
  - **Standing data messages** contain the basic information of each instrument, and are disseminated via MDG at the start of each trading session.
  - Clients should refer to the **MDG documentation** for the full details about these services.
- **Self-Trade Prevention (STP):** Service provided by Exchange on its trading platform, to allow trading clients to avoid unintentional trading with themselves, that results from the matching of two opposite orders of the same client. This service is made available to clients performing specific types of activities (e.g. Liquidity Providers) setup depending on the rules defined per Optiq Segment.
- **Firm:** A firm is an investment firm or financial institution that deals, advises, and/or acts on behalf of its clients and possibly itself on the Exchange market.
- **A Firm Access**: An entity allowing the Firm to access the Trading Platform. The two Firm Access types, which can both be used by a given Firm, are **Regular Access** and **Service Bureau Access**, as described below:
  - **Regular Access**: when a firm contracts its own and exclusive order entry access means directly with Exchange, the Firm Trading Solution type is Regular Access (or sometimes Direct Access).
  - **Service Bureau Access**: when a third-party customer, which may, among others, refer to a Service Bureau, contracts order entry access means with Exchange to act as an order carrier on behalf of several firms, the Firm Trading Solution type is Service Bureau Access.

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2. ORDER ENTRY MAIN PRINCIPLES

2.1 NEW INSTRUMENT SEGREGATION - OPTIQ SEGMENT

High reliability, significantly increased throughput and latency performance with minimal standard deviation, improved flexibility in delivery of new functionalities and products, shorter time to market as well as the improved resiliency will be ensured within Optiq in part by introduction of the new instrument segmentation through Optiq Segments.

2.1.1 Optiq Segments

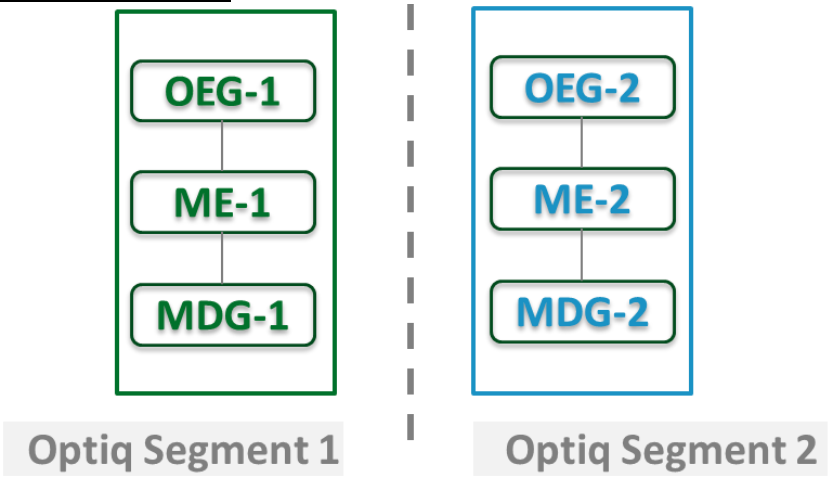
A segment can contain one or several asset classes. Information of the Optiq Segment to which an instrument belongs to / hosted on is communicated to clients within the Standing Data files and messages.

Clients must be aware of the different existing Optiq segments and the instruments they host in order to identify which segment(s) they would connect to.

In Optiq Luxembourg Stock Exchange market is hosted within a dedicated segment.

- Segmentation provides:
  - Improvement in resiliency - failure of a single Optiq segment should have limited direct technical impact on other Optiq segments;
  - Increased flexibility – possibility of independent software and operational lifecycle.

Illustration of two different segments:



2.1.2 Partitions

An Optiq Segment may be comprised of one or more physical partitions.

A partition is composed of an Order Entry Gateway (OEG), a Matching Engine (ME) and a Market Data Gateway (MDG).

Instruments have the flexibility to be moved from one partition to another within an Optiq segment.

For the day 1 implementation of Optiq, Luxembourg Stock Exchange market is hosted on a single partition, but could be upgraded in the future to multiple partitions if required.

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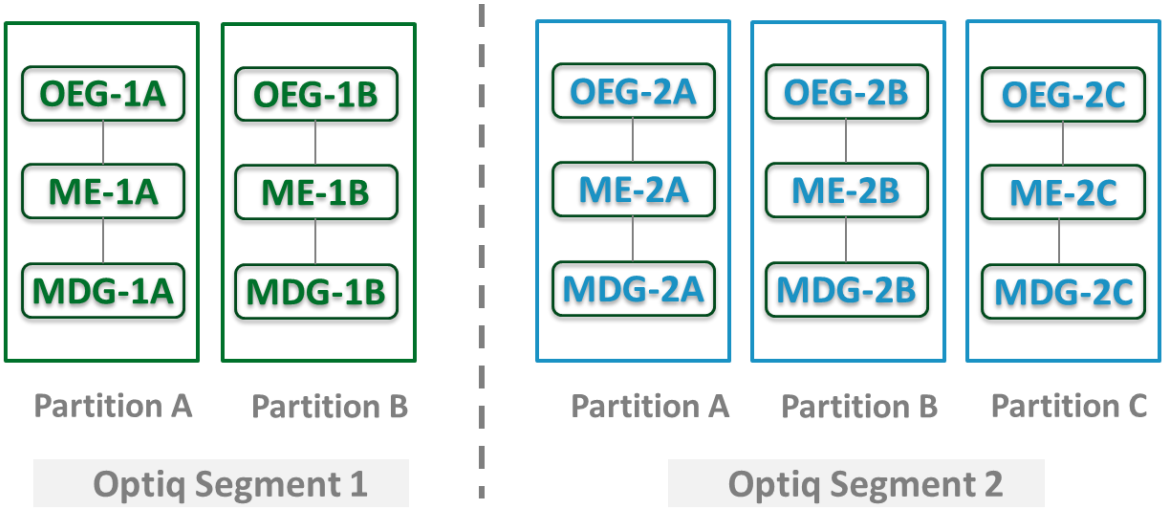
- Partitioning provides the following benefits:
  - Improved resiliency - failures on one partition impact only a fraction of the market / clients;
  - Improved scalability: simple and seamless scalability model based on horizontal scalability principles;
  - Ensured stable latency and high performance.

Illustration of segments divided into partitions:



2.1.3 Logical Access and OE Sessions

Access to an Optiq Segment requires a dedicated Logical Access:

- A Logical Access is a point of entry configuration for connectivity to a specific Optiq Segment and allows the client to technically reach all the instruments belonging to the particular segment for which an access is setup.
  - A Logical Access is dedicated to an Optiq Segment, i.e. a single Logical Access cannot connect to two different Optiq Segments;
  - Clients may have several Logical Accesses per Optiq Segment;
  - It allows the client to connect to all partitions belonging to the segment either directly or indirectly;
  - The physical connection is managed at the OE Session level and there is at least one per Logical Access.
- An OE session corresponds to the actual physical connection of the client to a partition:
  - OE Sessions are automatically created by the Exchange upon creation of a Logical Access;
  - OE Session is the login identifier for each physical connection represented by the combination of the *Logical Access ID* and the *OE Partition ID*. These two fields represent an ID which is unique across the whole system and across the various Optiq Segments;
  - One OE Session always belongs to one Logical Access, but a Logical Access can have multiple OE Sessions. There can be as many OE Sessions as there are partitions in the Segment;
  - An OE session inherits the majority of characteristics setup for the Logical Access;
  - By default OE Sessions hold the ownership of the orders entered through it.

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2.1.4 Full mesh OEG-ME Connection

If a segment has multiple partitions, for the best possible response times, clients should initiate an OE session for each available partition and send messages through it only for the instruments hosted on this partition. However, a client may use a single OE Session to access all the instruments of an Optiq Segment, no matter how many partitions compose the segment. This is made possible by the full mesh OEG-ME connectivity provided by Optiq as represented in the diagram below. Such cross-partition access will incur additional response times.

By default, the responses to the private response messages sent through a different partition will return to the OE session holding the ownership of the order (from which it was sent). However the corresponding MDG messages will be issued by the partition on which the instrument is hosted.

As it relates to the OEG and private messaging, Order ownership is the technical belonging of the order to the physical connection that submitted the order, or to the physical connection that took ownership of the order. Outbound messages are sent to the OE Session that owns the corresponding order. Functionally the orders belong to the Firm (designated by its Firm ID), and for the scope of change of ownership; modification can only be done by the requestor with the same Firm ID, and between physical connections or Logical Accesses that are set with the same Firm ID.

Illustration of segments, partitions and connectivity:

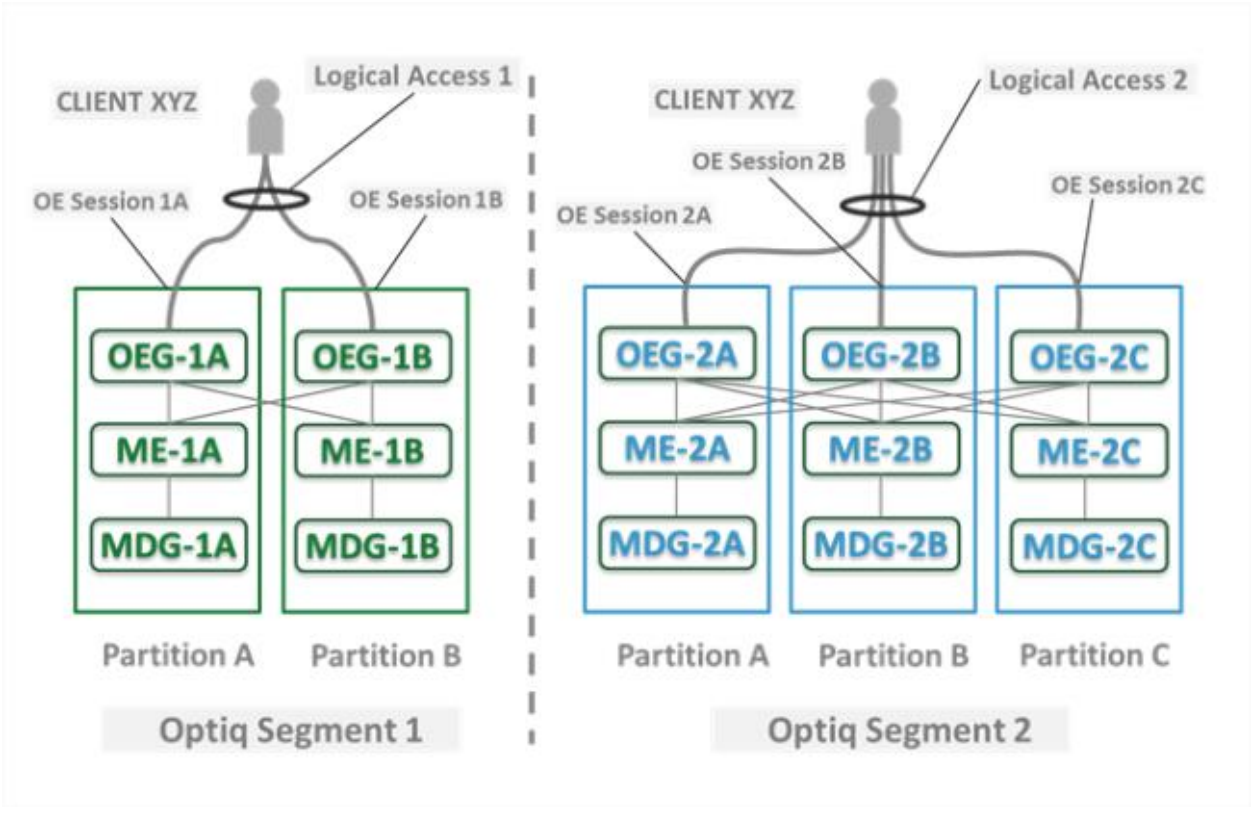

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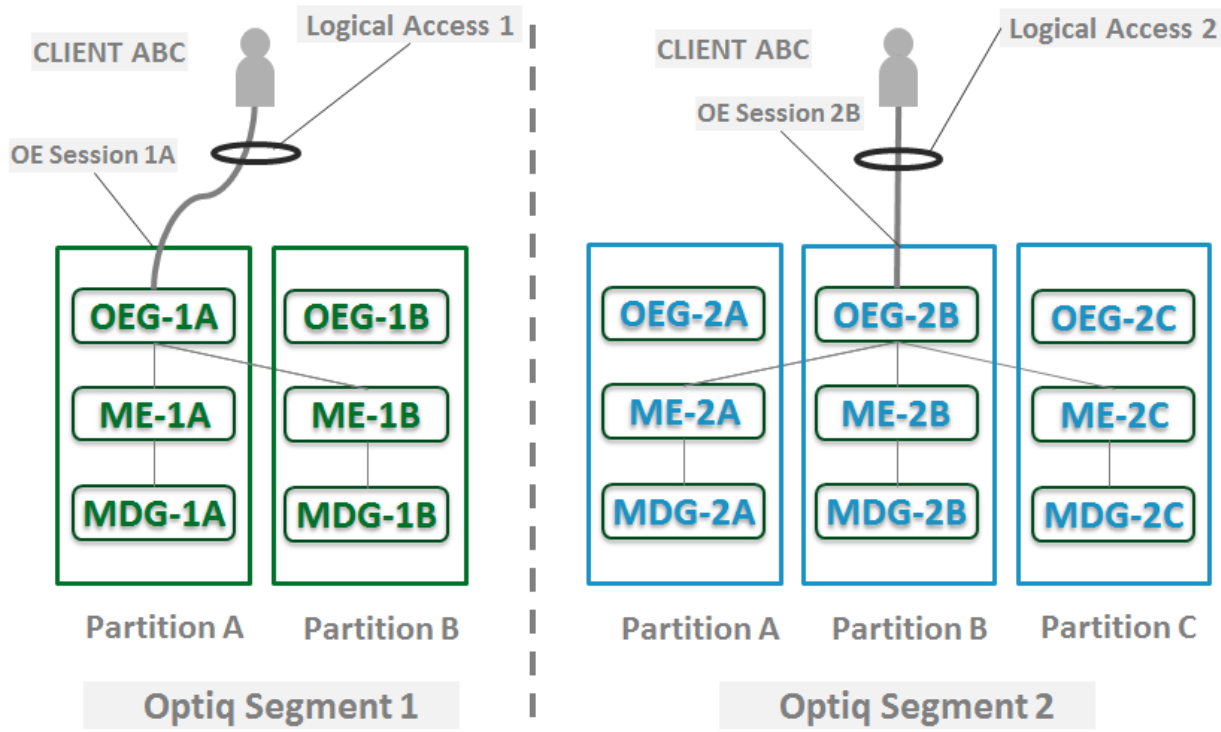
Illustration of the full mesh connectivity:



Please note: For the day 1 implementation of Optiq, Luxembourg Stock Exchange market is hosted within a dedicated Optiq Segment, and on a single partition. However this functionality will apply if in the future the market is to be hosted on multiple partitions.

2.1.5 Determine the "shorter path" (Future Use)

Please note: For the day 1 implementation of Optiq, Luxembourg Stock Exchange market is hosted within a dedicated Optiq Segment, and on a single partition. However this functionality will apply if in the future the market is to be hosted on multiple partitions.

In order to benefit from the best response times the clients should send messages directly to the partition on which the instrument is located. To identify on which partition each instrument is located, clients must use, and update on a daily basis, their referential data by downloading the StandingData files or using the **StandingData** (1007) market data messages, where details of the *Partition ID* assigned to each instrument are provided.

2.1.6 Setting Up Connectivity

Exchange provides connectivity information within a dedicated document, the Connectivity Detail specifications, covering all required technical details. Ranges of IPs / Ports and Multi-cast channels are identified for each Optiq segment for Order Entry and Market Data gateways.

To take full advantage of the scalability of Optiq, and ensure continuity of service, clients are strongly encouraged to setup connectivity to the full range specified per segment for OEG and MDG. Individual partitions will be assigned a sub-set of values identified within the specified ranges.

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In addition the relevant details for OEG and MDG connectivity per instrument will be communicated in the referential standing data files provided on a daily basis. For the details of the format in which this data is provided please refer to the Standing Data File specifications.

2.1.7 Overnight instrument migration between partitions (Future Use)

Please note: For the day 1 implementation of Optiq, Luxembourg Stock Exchange market is hosted within a dedicated Optiq Segment, and on a single partition. However this functionality will apply if in the future the market is to be hosted on multiple partitions.

In order to improve latencies and predictability, an overnight load balancing mechanism is introduced by the new Optiq system. This new technical mechanism implies that every day all instruments belonging to an Optiq Segment may potentially be relocated across the partitions belonging to this Optiq Segment.

Please note that this migration between partitions will not cause instruments to migrate from one Optiq Segment to another Optiq Segment.

Every instrument can migrate overnight from one partition to another. It means that connectivity information associated to an instrument can change every day, which is why it is crucial for clients to daily update their referential data by downloading the standing data files provided on the Exchange server.

Please refer to the *Luxembourg Stock Exchange – Optiq MDG Client Specifications* document for further details on standing data files.

Note: While migration of instruments between Optiq Segments is not expected to be a regularly occurring event, it may arise, and will be done with prior notification to clients.

2.1.8 Added / Removed Partition

Please note: For the day 1 implementation of Optiq, Luxembourg Stock Exchange market is hosted within a dedicated Optiq Segment, and on a single partition. However this functionality will apply if in the future the market is to be hosted on multiple partitions.

The partitioning of the Optiq Segments, and full-mesh connectivity, allows Exchange to add or remove a partition without impacting the clients' connectivity. Clients will still be able to access all the instruments belonging to an Optiq Segment by connecting to an already existing partition, as adding/removing a partition will not impact the other partitions, or the OE sessions.

In all cases the clients will always be notified before such changes are performed.

2.2 TECHNICAL FEATURES

2.2.1 Latency Monitoring and Timestamps

Outbound messages provide several internal timestamps to allow the clients to monitor the processing time of the system at different levels.

- The following diagram represents the different timestamps provided in the outbound messages:

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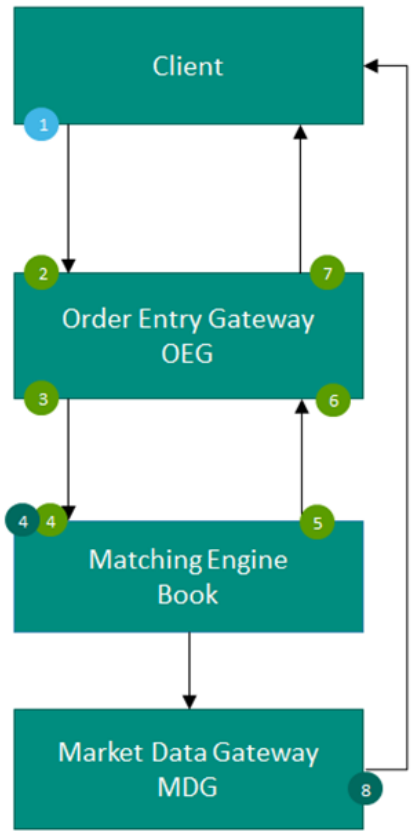

COLOR CODES

Sent by client in private Inbound messages.

Sent back to the client by the Exchange in Outbound messages

Sent by the Exchange in private Outbound messages

Sent by the Exchange in public Outbound messages

#	Field name	Description of data provided
1	*Message Sending Time*	is assigned by the Client in his inbound message
2	*OEG IN From Member*	is assigned by the OEG after decoding the inbound message
3	*OEG Out to ME*	is assigned by the OEG when sending the inbound message to the matching engine
4	*Book IN Time*	is assigned by the ME when receiving the inbound message from the OEG
5	*Book OUT Time*	is assigned by the ME when sending the outbound message to the OEG
6	*OEG IN From ME*	is assigned by the OEG when receiving the outbound message from the ME
7	*OEG OUT To Member*	is assigned by the OEG when sending the outbound message to the client
8	*Packet Time*	is assigned by the MDG when sending the message to the market

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2.2.2 Drop Copy

Drop Copy is a service, providing near real-time copies of trade reports & order messages, usually used for risk management and for compliance needs.

Clients require a dedicated connection to receive Drop Copy messages, which can be setup with configuration that fits their needs.

The service will be available in FIX protocol only; further details will be provided in a dedicated document.

2.3 CLIENT ORDER ID MANAGEMENT

2.3.1 Client Order ID Overview

Clients must provide a *Client Order ID* in every inbound application message, otherwise the message will be immediately rejected by the OEG.

Clients may provide any value that respects the *Client Order ID* format, which is an 8-byte signed integer, and the ranges as defined below. The Exchange recommends setting an unique ID per order, Firm and Symbol Index.

For order entry, the *Client Order ID* value is not checked by the Exchange[1], it is simply returned in the corresponding outbound message to allow clients to reconcile the response message with their original inbound request.

For modification and cancellation using the *Original Client Order ID* as unique identifier[2], the value is checked by the Exchange for possible duplicates. If among live orders and/or orders executed during current trading session, at least two orders were originally submitted with the same *Client Order ID*, they are considered to be duplicates. In case of duplication, the inbound request is rejected with the associated error code.

2.3.2 Client Order ID Usages for Order Management

Clients can submit modification and cancellation requests by using the *Original Client Order ID* as unique identifier, i.e. the value of the *Client Order ID* as submitted previously with the original order.

This allows clients to use the *Client Order ID* as unique identifier to modify or cancel their orders per Symbol Index and Firm, in addition of the *Order ID*. It does not restrict clients to use the Order ID to manage their orders.

Please note that *Client Order ID* provided for the modification requests will not be updated in the live order itself; order will keep its original *Client Order ID*.

To properly perform the inbound request, the system checks that the value exists on the corresponding Symbol Index among live orders belonging to the requesting Firm. If no order is found the request is rejected, or if more than one order is found the request is also rejected. In this case clients must use the *Order ID* to reach their orders.

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[1] With the exception of Service Bureau accesses for which a check is always performed.

[2] If both *Original Client Order ID* and *Order ID* are provided in a modification or cancellation request, the *Original Client Order ID* is totally ignored and the request is performed on *Order ID* only.

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As the uniqueness of the *Client Order ID* is not checked by the Exchange for order entry but only in case of modification and cancellation requests, clients who want to use the *Original Client Order ID* as unique identifier for these requests must ensure on their own the unicity of the Client Order ID per Symbol Index and Firm for orders they submit.

As requests using the *Original Client Order ID* require additional checks to be performed by the system, clients may observe a slight increase of the response time for these requests. Hence to ensure the best possible response times clients are encouraged to use *Order ID* as the reference for their orders.

2.3.3 Client Order ID Ranges

Depending on the nature of the client access, the *Client Order ID* must respect some constraints as described below.

Moreover it is recommended that clients implement their own configurable prefix in order to allow firms to integrate several application instances easily and ensure *Client Order ID* uniqueness across all the firm orders.

2.3.3.1 For Regular "In House" Accesses

The guideline for the range to use for the Regular In-House accesses (i.e. non via ISV nor using Service Bureau):

- clients should use the positive number range only;
- numerically it means that clients are restricted to values from 0 to 2^63 -1.

There is no other constraint than positive values for the non-Service Bureau accesses.

The correct use of the client order id range is checked by the exchange during the conformance test, however afterwards the OEG will not perform any checks of the correct assignment of the range in the inbound application message.

2.3.3.2 For Regular Accesses via ISV

The guideline for the range to use for the Regular access via ISV, without use of Service Bureau:

- clients should use the negative number range only;
- clients should insert at the beginning of the field the unique ISV ID, which will be provided by the Exchange.
  - the ISV ID is composed of three digits
- numerically it means that clients are restricted to a range from –XXX0000000000000000 to –XXX9999999999999999, where XXX is their ISV ID.

The correct use of the ISV ID and range is checked by the exchange during the conformance test, however afterwards the OEG will not perform any checks of the correct assignment of the ID or range in the inbound application message.

2.3.3.3 For Service Bureau Accesses

For Service Bureau accesses:

- clients must use the negative number range only;

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- clients must insert at the beginning of the field the unique Service Bureau ID, as provided by the Exchange.
  - the Service Bureau ID is composed of three digits
- numerically it means that clients are restricted to a range from –XXX0000000000000000 to –XXX9999999999999999, where XXX is their Service Bureau ID.

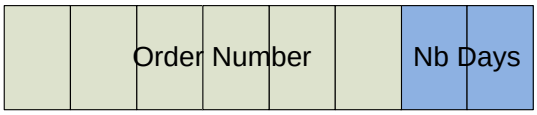
The Service Bureau ID is provided by the Exchange and is checked during the conformance test and is also checked and enforced at the OEG level for each inbound application message.

2.4 ORDER ID

The *Order ID* used in the messages for trading purposes is a numerical order identifier assigned by the matching engine, unique per instrument over the entire lifetime of the order, which means that this value remains unchanged, even upon submission of the modifications of the order using **CancelReplace** (06) message.

For reconciliation purposes with Exchange's clearing & settlement partners clients may obtain the Order Number and the Order Entry Date from the *Order ID* field, which is composed of two parts required for this, as depicted below:

- the least-significant 2-bytes include the relative calendar days number since 1-jan-1970 at 0:00 UTC (EPOCH); (Please note, currently the clearing partners may use the date corresponding to this value in ASCII format)
- The remaining most-significant 6-bytes will include the Order Number.



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3. ORDER ENTRY GATEWAY SPECIFICS

3.1 SESSION MANAGEMENT

3.1.1 Logon Overview

Clients initiate a TCP/IP session to the Order Entry Gateway, and then initiate a logon by sending the **Logon** (100) message. Session Logon is always initiated by the client. The **Logon (100)** message must be the first message sent by the client otherwise the OEG will drop the connection, and needs to be sent individually to each partition to which physical connection will be established. Please refer to the description of use for the individual messages and Kinematics document to see the various cases and the associated expected exchange of messages.

After the logon is successful application messages may be exchanged between the client and server. A client has *n* seconds after they connect to send a logon request, otherwise the server drops the connection.

The value of the time delay *n* is provided for each Optiq Segment in the *Luxembourg Stock Exchange - Connectivity Configuration Specifications*.

3.1.2 Heartbeats and TestRequests

The OEG uses the **Heartbeat** and **TestRequest** messages to ensure the connection between the client and the Exchange is up and functioning properly. During periods of inactivity the mechanism used by the OEG functions as described below.

OEG sends a:

- **Heartbeat** (106) message after the given delay of inactivity on its side, i.e. the OEG sends a **Heartbeat** message after it hasn't sent out any messages within *n* second(s). In case no other application messages, the clients will receive at least one **Heartbeat** (106) message every *n* second(s) when they are logged on. This ensures the client that OEG is up and functions properly.
- **TestRequest** (107) message after the given delay of inactivity on the client side, i.e. when the client has not sent any message in the last *n* second(s).
  - The client has another, equivalent time delay to answer the **TestRequest** (107) message by sending back to the OEG either a **Heartbeat** (106) message, or any other application message.
  - Otherwise if the client does not issue any message within the given delay, the OEG closes the connection. (Note that this disconnection triggers the Cancel on Disconnect mechanism for any messages in scope,)

The **TestRequest** (107) message can also be sent by the client to the OEG at any moment and the OEG will answer with a **Heartbeat** (106) message.

The parameter n has a specific value for each Optiq Segment that is specified in the *Luxembourg Stock Exchange - Connectivity Configuration Specifications* document.

3.1.3 Logout

Logout (103) message is used to improve session management processes. This message identifies to the exchange if the client has disconnected on purpose or because of technical issue.

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3.1.4 Message Sequence Usage

Optiq uses sequence numbers to ensure no loss of messages. Clients assign sequence numbers to the messages they send to the exchange and the Optiq tracks these numbers for the incoming (sent by client) messages. Similarly, Optiq assigns its own sequence numbers to the outgoing messages (sent by Optiq) that it sends to the client.

The first sequence values provided in the initial Logon messages of the day are set to zero (0) [or 1 for FIX]. When clients log on after a disconnection, the Logon message allows the client and Optiq to exchange the sequence numbers of the last messages that they processed from each other. Each side can then start sending the next message that has not been processed by the other side, or otherwise follow the business continuity and recovery processes.

Please note that message sequence numbers are assigned only to application messages and not to administration messages.

3.2 CANCEL ON DISCONNECT MECHANISM

Cancel on Disconnect is a mechanism which triggers an automatic cancellation of all non-persisted orders upon disconnection of the client whether voluntary or due to an issue.

In typical day-to-day operations the Cancel On Disconnect applies at the OE Session level, which means that it is triggered per OE Session (physical connection) and it does not affect other OE Sessions that belong to the same Logical Access.

By default the Cancel On Disconnect is enabled for all clients and for all their Logical Accesses / OE Sessions. It means that every single order is checked for Cancel On Disconnect.

The Cancel On Disconnect mechanism is triggered when the connection between a client and the OEG is dropped. If the client application is disconnected from the OEG, then all live non-persisted orders submitted during current day's trading sessions, and belonging to the corresponding OE Session are cancelled for their remaining quantity, regardless of order type and validity type.

When the mechanism kicks in, a **Kill** (05) are sent to the OE Session for which the mechanism has been triggered for each order and instrument where orders were killed. If the client has not yet reconnected the messages will be queued until he returns.

Clients can indicate on each order if they want it to be persistent, i.e. not included in the scope of the Cancel On Disconnect mechanism. If the *Disabled Cancel On Disconnect Indicator* (see field *Execution Instruction*) is set to "True" for an order, this order will not be cancelled even if the Cancel On Disconnect kicks in for the OE Session it belongs to.

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4. FORMATTING

4.1 SBE MESSAGE STRUCTURE

Private inbound and outbound messages are composed of the following parts displayed from left to right in the table below:

SBE Structure													
Frame	SBE Header	Block	Repeating Section 1					...	Repeating Section N				
			Repeating Section Header	Rep. Sec. 1.a	Rep. Sec. 1.b	...	Rep. Sec. 1.n	...	Repeating Section Header	Rep. Sec. N.a	Rep. Sec. N.a	...	Rep. Sec. N.a
2 bytes	8 bytes	n bytes	2 bytes	x_1 bytes	x_1 bytes	...	x_1 bytes	...	2 bytes	x_N bytes	x_N bytes	...	x_N bytes

Each message is enriched with a "Frame" field followed by the SBE header. The "Frame" field contains the length of the message including the length of the "Frame" and "SBE header" fields.

Please note that even if the Frame must be present on the wire for every message, for readability purpose it is not represented in the message structures of this document.

4.1.1 SBE Header

The SBE Header is composed of the following fields:

Field	Description	Length	Values
Block Length	Length of the block. The Block is the message without the repeating section headers and the repeating sections. This is especially useful of new versions of messages in case Exchange adds fields at the end of the block. Clients will remain able to process the block fields and know where the repeating sections starts.	2 bytes	From 0 to 2^16-1
Template ID	Identifier of the message template. This is the **message type** of the messages (e.g. NewOrder (01), Ack (03)…).	2 bytes	From 0 to 2^16-1
Schema ID	Identifier of the message schema that contains the template.	2 bytes	From 0 to 2^16-1
Schema version	Version of the message schema in which the message is defined. Used to add messages and/or modify some others.	2 bytes	From 0 to 2^16-1

A Schema is the file describing a group of messages (Private inbound and outbound, Market Data, etc.) used by the Exchange. The group of messages is identified by the *Schema ID*. The schema contains the templates that represent the structure of messages supported by the Exchange, each message being identified by its *Template ID* (message type). A given schema may have several *Schema Version* values, which specify the message structure used by the sender.

Hence the file *OEG_SBE_Input_Schema* contains all the Templates for the private inbound and outbound messages. The Schema Version defines the version of this *OEG_SBE_Input_Schema* and the structure to be used by the sender.

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Please note that the SBE Header must be present on the wire for every message, but for readability purpose it is not represented in the message structures of this document.

4.1.2 SBE Repeating Section Header

The SBE Repeating Section Header is composed of the following fields:

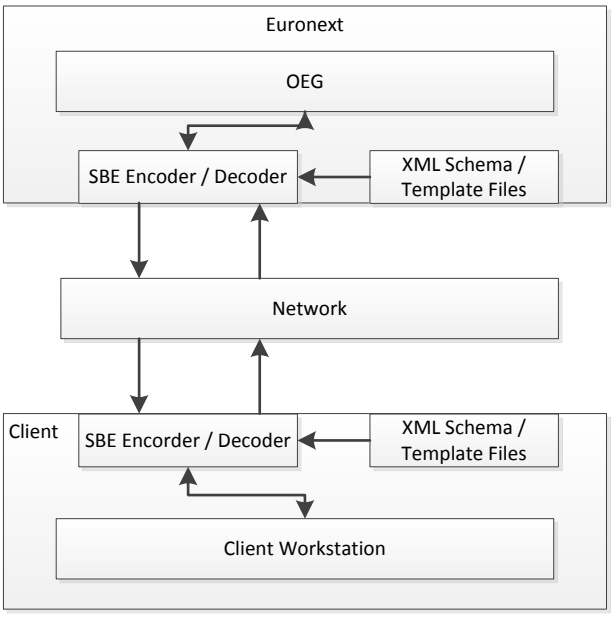
Field	Description	Length	Values
Block Length	Defines the length in bytes of a repeating section (without the length of the header).	1 bytes	From 0 to 255
Num In Group	Defines how many times the repeating section is repeated. It is set to "0" if there is no occurrence of this repeating section.	1 bytes	From 0 to 255

This header must be present at the beginning of each repeating section group.

Please note that the SBE Repeating Section Header must be present on the wire at the beginning of each repeating section block, but for readability purpose it is not represented in the message structures of this document.

4.1.3 SBE Usage

Exchange provides SBE Template XML files that contain all message types supported by the system. Client systems can decode and encode SBE message using the schema and the template files as below:



SBE offers the possibility to have backward and forward compatibility. It means that clients are not required to be on the last version of Schema Version (message structure version) to be able to read the message. This is only possible if changes between versions occurred at the end of:

- The block
- The repeating section.

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Using message length, SBE is able to know the difference between the block length or the repeating section length managed by a given client and the received message. As such, fields that do not match a client's version of the messages will be skipped.

However, it is crucial to note that the list of available values in any given field can be updated and the length can be changed. In this case, the update must be taken into account.

Hence if a field required by the regulator becomes mandatory in a message, each client using this message will need to update its Schema for the latest version, otherwise this message will be rejected by the Order Entry Gateway. A change of length of any field will also lead client to update their Schema if they want to use a message containing this field.

Please refer to the *Optiq SBE Technical Note* for further details on the SBE Encoder / Decoder.

4.1.4 SBE Optional Fields and Null Value

Optional and conditional fields can be provided as null value, as defined by the SBE standard and further indicated in the SBE XML templates.

Please note that the Null Value means that the field is not applicable, not provided or not used. This is different from the value of zero (0), which may have its own meaning depending on the field.

For unused Bitmap fields all the bits must be set to '0'.

4.2 TECHNICAL FORMAT FIELDS

The format of the fields contained in the messages will follow these rules:

- All integers are numeric (signed/ unsigned specified in each field format description) using two's complement method.
- Binary data are in Intel byte order (Little-Endian).
- All "Alphanumerical ID" and "Text" fields are alphanumeric based on UTF-8, left aligned and null padded.
- SBE allows optional fields with a null value. The applicable NULL value is defined by SBE interface.
- Only field values will appear in the published messages (no name or 'tag' will appear in the messages).
- The field names that appear in this document are for reference purposes only.
- All the fields are contiguous.
- All field sizes are fixed and constant.
- Even if it is not always mandatory to be able to process last message version (Schema Version), it is mandatory for clients to check for each update if it contains important or regulation updates.

Format fields	Description
Alphanumerical ID	String type identifying an element.
Amount	Signed numerical field representing an amount.

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Format fields	Description
Bitmap	Array of bits, each bit specifying whether an optional value is present (set to "1") or not (set to "0") (in Little-Endian). e.g. For the field Execution Instruction a Bitmap field allows indicating in different positions of the field, for the same order message, in position zero (0) with the bit set to one (1) STP type of Resting, as well as in position four (4) with the bit set to one (1) as well, indicate that this order should be persisted and should be excluded from the scope of CoD
Boolean	Indicator having two possible values, either 'true - 1' or 'false - 0'. This value is set on the first bit of the byte (in Little-Endian).
Date	Date of an event (in number of days since 01/01/1970 UTC - 01/01/1970 is the day "0").
Enumerated	Information having a delimited set of possible values.
Numerical	Generic numerical field.
Numerical ID	Numerical field identifying an element.
Price	Numerical field representing a price (either signed or not signed). See the description in Price, Quantity, Ratio and Amounts Formats
Quantity	Unsigned numerical field representing a quantity of elements (for example a number of shares).
Sequence	See the description in Sequence Numbers
Text	Text in UTF-8, left aligned and completed with null padding.
Epoch Time in Nanoseconds	Time in number of nanosecond since 01/01/1970 UTC.

4.3 DATE AND TIME CONVENTIONS

Date and Time provided in this document refer to the following names, and are provided in the following format:

- Timestamps are expressed in UTC (Universal Time, Coordinated) and are synchronised using Precision Time Protocol (PTP). Their format is defined in number of nanoseconds since 01/01/1970 UTC, and is populated as 8-byte unsigned integers.
- Dates are defined in number of days since 01/01/1970 UTC (01/01/1970 is the day "0") and are populated as 2-byte unsigned integers.
- *Note:* Expiry Date and Time provided for Good Till Time (GTT) and Good Till Date (GTD) orders follow their own rules, please refer to the field description for further details.

4.4 SEQUENCE NUMBERS

The Order Entry Gateway manages two sequence numbers:

- Message Sequence Number: this sequence number is incremented one by one by the OEG and per OE Session (physical connection). It is provided in every application outbound message.
- Client Message Sequence Number: this sequence number must be managed by the client's workstation and is mandatory for each application inbound message. It is recommended to increment this number

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one by one per OE Session (physical connection). Please note that this sequence is not checked by the OEG but will be useful for some specific recovery cases.

4.5 PRICE, QUANTITY, RATIO AND AMOUNT FORMATS

If a price is needed in the messages, it is expressed in currency or in percentages (generally for bonds).

The volume of the order is a number of Securities or an amount expressed in currency.

All prices are processed using two values:

- the price value (Signed/Unsigned Integer);
- the scale code (*Price/Index Level Decimals*).

Clients have to link each instrument to the associated "*Price/Index Level Decimals*" from the Standing Data message or file.

The prices must be calculated according to the following formula:

$$\text{Price} = \frac{Integer}{10^{\text{"Price/Index Level Decimals"}}}$$

For example, a price of 27.56 is sent in messages in the Price field as an Integer of 275600, if the "*Price / Index Level Decimals*" from the Standing Data is equal to 4.

- The same mechanism is used for:
  - All quantities with "*Quantity Decimals*"
  - All ratios and percentages with "*Ratio / Multiplier Decimals*"
  - All amounts with "*Amount Decimals*"

4.6 INSTRUMENT IDENTIFIERS AND EMM

4.6.1 Symbol Index

An instrument is identified by its Symbol Index.

The standard security identifier (for example ISIN), mnemonic, tick size, instrument name and other instrument characteristics are carried only in the following Market Data messages: **StandingData** message (1007), **OutrightStandingData** (1014), **StrategyStandingData** (1012), **ContractStandingData** (1013) and in the Standing Data files available on the HTTPS server. As such, the client applications must link the Symbol Index which is used in all messages, with other instrument characteristics present in the **StandingData** (1007) message or file.

The Symbol Index is assigned by Exchange and will not change over the lifetime of the instrument.

In some extraordinary cases an instrument can move from one Optiq segment to another keeping its Symbol Index. Clients will always be notified in advance before such changes.

Any Corporate Action leading to a change of ISIN will lead to change of SymbolIndex. These Corporate Actions are generally part of the mandatory reorganisation events; the most frequent ones being stock split, reverse stock split, change of name / denomination. However the ISIN change is not systematic and will be in any case communicated upfront through the Exchange Corporate Action notices.

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For further details on the Standing Data messages and files please refer to the *Luxembourg Stock Exchange – Optiq MDG Client Specifications.*

4.6.2 Order Priority

The *Order Priority* is provided in private **Ack** (03) messages for every order. It is used to allow clients to reconcile with the Market Data feed as the *Order Priority* is also provided in the **OrderUpdate** (1002) message.

For Stop orders *Order Priority* will be provided in the private **Ack** (03) message. This order priority indicates the rank of the stop order on its arrival. If multiple stop orders exist with the same price conditions, they would be triggered in the order of the priority assigned to the stop order upon entry.

When Stop orders are triggered, a new **Ack** (03) message is issued, with the field *Ack Type* set to "Stop Triggered Ack", they will be assigned a new order priority that indicates their priority vs. the rest of the order book.

For further details please refer to the description of the **Ack** (03) message and to the Kinematics document in Section *1.2.5.1 Private and Public feed reconciliation*.

4.6.3 EMM

The *Exchange Market Mechanism* represents the platform to which the order sent by the client must be routed. It must be specified by clients each time a *Symbol Index* is specified as it is used to route the order to the right platform.

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5. MESSAGES

5.1 IMPORTANT NOTES

5.1.1 Scope of Messages and Functionalities

While attempts are made to provide as comprehensive an overview of functionalities as possible please note that:

- Some of the functionalities and messages in the document are applicable only when enabled for the specific scope of instruments;
- The functionalities follow the rules set out in the Exchange's Trading manual and Rule books.

The following table describe each Optiq Segment tag. Each tag will be then used for each message to specify on which Optiq Segment this message applies on.

Optiq Segment	Number of Partitions
Luxembourg Stock Exchange	1
Drop Copy	10

5.1.2 Conditional Values in Outbound Messages

Please note that for the outbound messages (Client◀OEG) the "presence" of the fields in the block of the message is often set to "Conditional", which means that those fields might be populated with Null Value, when not required. As a single outbound message may cover several trading cases, it contains fields needed in all of these cases, which may be populated or not.

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5.2 MESSAGES FORMATTING

5.2.1 Introduction to Message Representation

To help reading the message structure in this document the following introductory explanation is provided.

- In all the structures of messages of this document (the tables representing the messages only):
  - All the lengths identified are in bytes.
  - Short descriptions of individual fields within the structures might not be exhaustive, please refer to Section 6 Field Description where further details are provided for each individual field.
  - Where a list of specific allowed values is provided, if client provides data that is outside of this range of values, the message will be rejected
  - In the fields description the following pictograms represent:
    - [C] means that the value is for Cash only;
    - [i] means that special conditions apply to the displayed value. These conditions are detailed in the "conditions" in the description of the corresponding field.
  - The display of message sections is formatted as described below:
    - **Block section**: The block is for all the non-repeated fields. They must be present on the wire for each message, even if they are optional or conditional. The length of the section is defined in each individual message template (in bytes).

Client Message Sequence Number	The Client Message Sequence Number is mandatory for all inbound messages, but the consistency of the sequence is not checked by the Exchange.	Sequence	4	From 0 to 2^32-2	Mandatory	96
Firm ID	Identifier of the member firm that sends the message.	Alphanumeric al ID	8	(See field description)	Mandatory	104
Message Sending Time	Indicates the time of message transmission, the consistency of the time provided is not checked by the Exchange. (Time in number of nanoseconds since 01/01/1970 UTC)	Epoch Time in Nanoseconds	8	From 0 to 2^64-2	Mandatory	111
Client Order ID	An identifier of a message assigned by the Client when submitting an order to the Exchange.	Numerical ID	8	From -2^63+1 to 2^63-1	Mandatory	96
Symbol Index	Exchange identification code of the instrument.	Numerical ID	4	From 0 to 2^32-2	Mandatory	125
EMM	Defines the Exchange Market Mechanism applied on each platform.	Enumerated	1	(See field description)	Mandatory	100

    - **Green Repeating section**: All the fields that are repeated. All these fields are in bold and green table borders, it might be **0 to *n* occurrence(s)** for this repeating section. (the maximum value of *n* is defined in the *Template*)

Bid Quantity	Quote bid quantity, (To be calculated with Quantity Decimals).	Quantity	8	From 0 to 2^64-1	Optional	93
Bid Price	Quote bid price, (To be calculated with Price/Index Level Decimals).	Price	8	From -2^63 to 2^63-1	Optional	93
Offer Quantity	Quote offer quantity, (To be calculated with Quantity Decimals).	Quantity	8	From 0 to 2^64-1	Optional	116
Offer Price	Quote offer price, (To be calculated with Price/Index Level Decimals).	Price	8	From -2^63 to 2^63-1	Optional	116
Symbol Index	Exchange identification code of the instrument.	Numerical ID	4	From 0 to 2^32-2	Mandatory	125
EMM	Defines the Exchange Market Mechanism applied on each platform.	Enumerated	1	(See field description)	Mandatory	100

    - **Light Blue Repeating section**: All these fields are in bold and light blue table borders, it might be **0 to 2 occurrence(s)** for this repeating section. This is mainly used to manage optional fields.

Free Text	Free Text is manually entered by the trader issuing the order. This field is part of the clearing aggregate.	Text	18	(See field description)	Optional	105

    - **Blue Repeating section**: All these fields are in bold and blue table borders, it might be **0 to 1 occurrence** for this repeating section. This is mainly used to manage optional fields.

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Collar Rejection Type	Hit collar type (high or low) in case of order rejection due to collar breach.	Enumerated	1	1 = Low dynamic collar 2 = High dynamic collar	Conditional	98
Breached Collar Price	Breached collar price in case of collar rejection.	Price	8	From -2^63 to 2^63-1	Conditional	94

- SBE message structures are organized as below:

SBE Section	Description	Length
Block	The block is for all the non-repeated fields. They must be present on the wire for each message, even if they are optional.	As defined by the individual message template (in bytes)
Repeating section 1	All the fields that are repeated. All these fields are in bold and are outlined by green table borders; there may be 0 to *n* occurrences of this repeating section. (the maximum value of *n* is defined in the *Template*)	As defined by the template (in bytes)
Repeating section 2	All these fields are in bold and are outlined by light blue table borders; there may be 0 to 2 occurrences of this repeating section. This it is mainly used to manage optional fields.	As defined by the template (in bytes)
Repeating section 3	All these fields are in bold and are outlined by blue table borders; there may be 0 to 1 occurrence of this repeating section. This it is mainly used to manage optional fields.	As defined by the template (in bytes)

- In this explanatory example, the Frame, SBE Header and SBE Repeating Section Header are represented in the structure. There are in a grey background and will not be provided in the rest of this document.
- Please note not all messages use repeating sections. In those cases repeating sections are not identified in the structure of the message.

- For example: the following combination of blocks could be present in a message structure:

SBE Section	Description	Length
Frame	The "Frame" field contains the length of the message including the length of the "Frame" and "SBE header" fields.	2 bytes
SBE Header	SBE header is composed of 4 fields, as previously defined.	8 bytes
Block	The block is for all the non-repeated fields. They must be present on the wire for each message, even if they are optional.	As defined by the template (in bytes)
Repeating section 1 header	This is how many times the repeating section is repeated and the length of the repeating section. It will not been displayed in any below message. *Num In Group* is at 0 if there is no repeating section.	2 bytes (1byte for the length 1byte for the count)
Repeating section 1.a	First occurrence of the repeating section 1.	As defined by the template (in bytes)
Repeating section 1.n	Occurrence N of the repeating section 1.	As defined by the template (in bytes)
Repeating section 2 header	This is how many times the repeating section is repeated and the length of the repeating section. It will not been displayed in any below message. *Num In Group* is at 0 if there is no repeating section.	2 bytes (1byte for the length 1byte for the count)

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SBE Section	Description	Length
Repeating section 2.a	All these fields are in bold and blue table borders, it might be 0 to 1 occurrence for this repeating section. This it is used to manage optional fields.	As defined by the template (in bytes)

5.2.2 Example: NewOrder (01) message

- Below is an example representing the sections using the **NewOrder** (01) message (Frame and headers provided):

SBE Section	Description	Length
Frame	The "Frame" field contains the length of the message including the length of the "Frame" and "SBE header" fields.	2 bytes
SBE Header	SBE header is composed of 4 fields, as previously defined.	8 bytes
Block	Includes all the mandatory fields for the NewOrder (01) message.	As defined by the template (in bytes)
Repeating section header 1	This is how many times the repeating section 1 is repeated and the length of a repeating section 1. It will not been displayed in any below message. It is at 0 if there is no repeating section.	2 bytes (1byte for the length 1byte for the count)
Repeating section 1	This repeating section contains only the *FreeText* and can be populated 0, 1 or 2 times (2 times for Cross Orders only).	As defined by the template (in bytes)
Repeating section header 2	This is how many times the repeating section 2 is repeated and the length of a repeating section 2. It will not been displayed in any below message. It is at 0 if there is no repeating section.	2 bytes (1byte for the length 1byte for the count)
Repeating section 2	This repeating section contains MiFID II short codes and can be populated 0, 1 or 2 times (2 times for Cross Orders only).	As defined by the template (in bytes)
Repeating section header 3	This is how many times the repeating section 3 is repeated and the length of a repeating section 3. It will not been displayed in any below message. It is at 0 if there is no repeating section.	2 bytes (1byte for the length 1byte for the count)
Repeating section 3	This repeating section contains additional order characteristics and can be populated 0 or 1 time.	As defined by the template (in bytes)
Repeating section header 4	This is how many times the repeating section 4 is repeated and the length of a repeating section 4. It will not been displayed in any below message. It is at 0 if there is no repeating section.	2 bytes (1byte for the length 1byte for the count)
Repeating section 4	This repeating section contains the clearing data and can be populated 0, 1 or 2 times (2 times for Cross Orders only).	As defined by the template (in bytes)

It means that a message that contains at least one repeating section has a variable length, depending of the number of times each repeating section is populated.

- As an example below is a representation of the fields that may be sent in the structure of NewOrder (01) message, that represent some of the sections listed above.
  - The following sections are populated in this example: the Frame, SBE Header, Block, **Repeating Section 2** populated once, **Repeating Section 3** populated once.

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– The following sections are not populated in this example: **Repeating Section 1, Repeating Section 4**.

Please note that the values provided in this example are purely indicative and do not represent any specific trading case. Moreover the values are here provided in a "human readable format" when in reality they will be sent on the wire in a binary format.

Field	Short Description	Values	Presence
Frame	The "Frame" field contains the length of the message including the length of the "Frame" and "SBE header" fields.	148	Mandatory
Block Length	Length of the block. The Block is the message without the repeating sections.	64	Mandatory
Template ID	Identifier of the message template. This is the message type of the message	01	Mandatory
Schema ID	Identifier of the message schema that contains the template.	2	Mandatory
Schema version	Version of the message schema in which the message is defined.	1	Mandatory
Client Message Sequence Number	The Client Message Sequence Number is mandatory for all inbound messages, but the consistency of the sequence is not checked by the Exchange.	5	Mandatory
Firm ID	Firm ID.	00010258	Mandatory
Message Sending Time	Indicates the time of message transmission, the consistency of the time provided is not checked by the Exchange. (Time in number of nanoseconds since 01/01/1970 UTC)	26th October 2016 @ 12:16:46-015-255-248	Mandatory
Client Order ID	Client order ID.	1	Mandatory
Symbol Index	Exchange identification code of the instrument.	46489	Mandatory
EMM	Defines the Exchange Market Mechanism applied on each platform.	1 COB	Mandatory
Order Side	Indicates the side of the order.	2 Sell	Mandatory
Order Type	Type of Order.	2 Limit	Mandatory
Time In Force	Specifies the maximum validity of an order.	0 Day	Mandatory
Order Price	Instrument price per quantity unit.	150000000	Conditional
Order Quantity	Total order quantity, per quantity unit.	200000000	Mandatory
ExecutionWithinFirmShortCode	MiFID II short code, Execution within firm, identifier of the trader or algorithm responsible for the execution making.	54687785	Mandatory
Trading Capacity	MiFID II field that indicates whether the order submission results from trading as matched principal, on own account or as any other capacity.	1	Mandatory
Account Type	Indicates the account type for which the order is entered.	4 RO	Mandatory
LP Role	Liquidity Provider Role identifies the type of the Liquidity Provider.	Null Value	Conditional
Execution Instruction	Field used as instruction for order handling.	00000000	Mandatory

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Field	Short Description	Values	Presence
Dark Execution Instruction	Field used as instruction for dark order handling.	00000000	Mandatory
MiFID Indicators	Field used as instruction for order handling.	00000000	Mandatory
STP ID	For Future Use.	Null Value	Optional
Block Length for repeating section 1	Defines the length in bytes of the repeating section 1.	18	Mandatory
Num In Group for repeating section 1	Defines how many times the repeating section 1 is repeated.	0	Mandatory
Block Length for repeating section 2	Defines the length in bytes of the repeating section 2.	16	Mandatory
Num In Group for repeating section 2	Defines how many times the repeating section 2 is repeated.	1	Mandatory
InvestmentDecisionWFirmShortCode	MiFID II short code, Investment decision within firm, identifier of the trader or algorithm responsible for the investment decision.	Null Value	Conditional
NonExecutingBrokerShortCode	MiFID II short code, Non-executing broker, identifier of the non-executing broker.	432108435	Optional
ClientIdentificationShortCode	MiFID II short code, Client identification code. Short Code used to identify the entity executing the transaction. In case there is DEA, the code of the DEA user shall be used.	525896547	Conditional
Block Length for repeating section 3	Defines the length in bytes of the repeating section 3.	50	Mandatory
Num In Group for repeating section 3	Defines how many times the repeating section 3 is repeated.	1	Mandatory
Stop Trigger Price	Stop Trigger Price is mandatory for stop orders.	Null Value	Conditional
Undisclosed Price	Optional price a client can give to the hidden part of an Iceberg order.	Null Value	Conditional
Disclosed Quantity	Maximum number of quantity units to be shown to market participants (Iceberg Order). (To be calculated with Quantity Level Decimals)	Null Value	Conditional
Minimum Order Quantity	Minimum quantity to be executed upon order entry (else the order is rejected), (To be calculated with Quantity Level Decimals).	50000000	Optional
QuoteReqID	*Numerical RFQ identifier assigned by the matching engine, unique per instrument and EMM.*	*Null Value*	*Optional*
Order Expiration Time	Field used as time of order expiration for GTT orders.	Null Value	Conditional
Order Expiration Date	Field used as date of order expiration for GTD orders.	Null Value	Conditional
Peg Offset	Tick offset for a pegged order.	Null Value	Conditional
Trading Session Validity	Trading Session Validity.	Null Value	Optional

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Field	Short Description	Values	Presence
Undisclosed Iceberg Type	Order handling related to the undisclosed part of an Iceberg order eligible to a matching in the Dark pool of liquidity.	Null Value	Optional
Triggered Stop Time In Force	Specifies the maximum validity of an triggered stop order.	Null Value	Conditional
Block Length for repeating section 4	Defines the length in bytes of the repeating section 4.	34	Mandatory
Num In Group for repeating section 4	Defines how many times the repeating section 4 is repeated.	0	Mandatory

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5.3 ADMINISTRATION MESSAGES

5.3.1 Logon (100)

Client ▶OEG
Message Usage:

The **Logon** (100) message is used by the clients to establish a connection with the Exchange and identify the last response message they have processed. It must be the first message sent by the client otherwise the OEG will drop the connection.

The **Logon** (100) message contains the following fields:

- *Logical Access ID*: it must be populated by the client according to the Logical Access used.
- *OE Partition ID*: it must be populated according to the partition the client connects to.
- *Last Message Sequence Number*: it is the sequence number of the last message received by the client from the Exchange on a specific OE Session.
- *Software Provider*: it is an optional field that should be populated for client using software provider services.
- *Queueing Indicator*: defines whether the orders are rejected or queued in case of throttling.

If the logon is successful the OEG sends back a **LogonAck** (101) message providing the exchange identifier (*Exchange ID*) and the sequence number of the last message received from the client. Otherwise the OEG sends back a **LogonReject** (102) message providing the reason of the rejection (*Logon Reject Code*) and closes the connection.

Usage of the Last Message Sequence Number:

At the first logon of the trading day the client must set the field *Last Message Sequence Number* to 0, as no message can be received before a successful logon.

In case of an unintentional disconnection the client must use the field *Last Message Sequence Number* to indicate to the Exchange the sequence number of the last message he has received. If some messages have been lost during the disconnection the OEG will resend them to the client.

The clients must not skip sequence numbers; can however pass the Null Value as *Last Message Sequence Number* to notify the server not to validate the next sequence number. The server will accept the next sequence from the client and then send what it thinks is the next outbound sequence.

If the *Last Message Sequence Number* provided in the Logon message exceeds the sequence number of the last message sent by the Exchange the OEG will reject the logon (**LogonReject** (102)) and will drop the connection. (This behaviour may differ for specific recovery cases)

Field	Short Description	Format	Len	Values	Presence	Page
Logical Access ID	Identifier of the Logical Access.	Numerical ID	4	From 0 to 2^32-2	Mandatory	89

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Field	Short Description	Format	Len	Values	Presence	Page
OE Partition ID	Identifies uniquely an OE Optiq partition by which the engine is reached.	Numerical ID	2	From 0 to 2^16-2	Mandatory	92
Last Message Sequence Number	Indicates the sequence number of the last message received by the Client from the Exchange on the OE Session.	Sequence	4	From 0 to 2^32-2	Conditional	86
Software Provider	Free text field entered by the client in the Logon (100) message, identifying the provider of the software used for exchange of messages for trading purposes.	Text	8	(See field description)	Optional	100
Queueing Indicator	Indicates whether the client requests its orders to be queued or rejected in case of throttling. (0: False - Reject ; 1: True - Queue).	Boolean	1	0 = False 1 = True	Mandatory	99

5.3.2 Logon Ack (101)

Client ◀OEG
Message Usage:

The **LogonAck** (101) message is sent by the OEG as a response to a successful logon of a client. The message provides the Exchange identifier (*Exchange ID*) along with the sequence number of the last client message processed by the system.

The sequence number may be used to identify gap in the messages sent or received. If the client realizes that some messages have been dropped, he can decide whether to resend or not to the messages that have not been processed by the Exchange.

Please note that rejected messages are considered as processed messages.

Field	Short Description	Format	Len	Values	Presence	Page
Exchange ID	Identifies a physical Optiq partition.	Text	8	LuxSE	Mandatory	81
Last Client Message Sequence Number	Indicates the sequence number of the last message received by the Exchange from the Client on the OE Session.	Sequence	4	From 0 to 2^32-2	Mandatory	86

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5.3.3 Logon Reject (102)

Client ◀OEG
Message Usage:

The **LogonReject** (102) message is sent by the OEG as a response to an unsuccessful logon of a client. The message provides the Exchange identifier (*Exchange ID*) along with the reason of the rejection (*Logon Reject Code*).

The *Last Client Message Sequence Number* indicates the sequence number of the last client message processed by the system and *Last Message Sequence Number* indicates the the sequence number of the last message sent by the Exchange.

A logon rejection will automatically lead OEG to drop the connection.

If the logon fails because the OEG does not recognize the **Logon** (100) message at all (because of a structural error, when a message is improperly formed according to these specifications, for example), then no connection is established and OEG does NOT send a **LogonReject** (102) message. In this circumstance, the client does not receive any response at all to the **Logon** (100) message.

Field	Short Description	Format	Len	Values	Presence	Page
Exchange ID	Identifies a physical Optiq partition.	Text	8	(See field description)	Mandatory	81
Logon Reject Code	Provides the logon rejection reason.	Enumerated	1	(See field description)	Mandatory	89
Last Client Message Sequence Number	Indicates the sequence number of the last message received by the Exchange from the Client on the OE Session.	Sequence	4	From 0 to 2^32-2	Mandatory	86
Last Message Sequence Number	Indicates the sequence number of the last message received by the Client from the Exchange on the OE Session.	Sequence	4	From 0 to 2^32-2	Mandatory	86

5.3.4 Logout (103)

Client ◀▶OEG
Message Usage:

The **Logout (103)** message with *Log Out Reason Code* = 0 is sent by the client in order to close the connection with the Exchange.

In regular cases, at the end of day the Exchange sends a **Logout (103)** message with *Log Out Reason Code* = 1 to the clients before dropping the connection.

Please note that in both cases it will trigger the Cancel On Disconnect mechanism if it is enabled.

Field	Short Description	Format	Len	Values	Presence	Page
Log Out Reason Code	Log Out Reason Code. Value 0 is from client, value 1 is from Exchange.	Enumerated	1	0 = Regular Logout By Client 1 = End Of Day	Mandatory	88

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5.3.5 Heartbeat (106)

Client ◀▶OEG
Message Usage:

The **Heartbeat** (106) message is used during periods of inactivity, (i.e. when there is no exchange of application messages), either by the OEG or the clients to notify each other that this inactivity is not due to a technical issue.

The message is only composed of an SBE Header. Please refer to Section 4.1.1 SBE Header.

It is sent by:

- The OEG after *n* second(s) of inactivity to notify the client that the connection functions properly, or as a response to a client's **TestRequest** (107).
- The client as a response to a **TestRequest** (107) message to notify the OEG that his system functions properly. (Please note that any application message is also a proper response to the **TestRequest** (107) message.)

The parameter *n* has a specific value defined for each Optiq Segment.

5.3.6 TestRequest (107)

Client ◀▶OEG
Message Usage:

The **TestRequest** (107) message is used by the OEG to check if the network and the client's system function properly.

The message is only composed of an SBE Header. Please refer to Section 4.1.1 Header.

It is sent by the OEG after *n* second(s) of inactivity on the client side. Then:

- The client has *n* second(s) delay to answer the **TestRequest** (107) message by sending a **Heartbeat** (106) message, or any other application message.
- Otherwise if the client does not issue any message within the given delay, the OEG closes the connection. (Note that it triggers the Cancel on Disconnect mechanism if it is enabled)

It can also be sent by the clients to the OEG at any moment and the OEG will answer with a **Heartbeat** (106) message.

The parameter *n* has a specific value defined for each Optiq Segment

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5.3.7 Technical Reject (108)

Client ◀OEG
Message Usage:

The **TechnicalReject** (108) message is sent by the order entry gateway to notify the request issuer that their requests are not processed. It is used to reject application and unknown messages sent by the client.

The **TechnicalReject** (108) message is sent by the order entry gateway for the following reasons:

- Throttling
- Unknown message

The *Rejected Client Message Sequence Number* provided in the **TechnicalReject** (108) message identifies the request which is rejected: it is the *Client Message Sequence Number* of the corresponding inbound message sent by the client.

Note: in case of a rejection of an unknown message the *Rejected Client Message Sequence Number* may not be provided.

The reason of the rejection is provided by the Error Code, and a text message explaining the error is provided in the Error Code List.

Please refer to the *Luxembourg Stock Exchange - Connectivity Configuration Specifications* and *Luxembourg Stock Exchange – Throttling Description* documents for further details.

Field	Short Description	Format	Len	Values	Presence	Page
OEG OUT To Member	Order Entry Gateway OUT time to member (in ns), measured when outbound message leaves the gateway (Time in number of nanoseconds since 01/01/1970 UTC).	Epoch Time in Nanoseconds	8	From 0 to 2^64-2	Conditional	93
Rejected Client Message Sequence Number	Indicates the Client Message Sequence Number of the rejected message.	Sequence	4	From 0 to 2^32-2	Conditional	99
Rejected Message	*[N/A] Deprecated field*	*Numerical ID*	*1*	*From 0 to 2^8-2*	*Conditional*	*100*
Error Code	Error code in case of rejection.	Numerical ID	2	From 0 to 2^16-2	Mandatory	80
Rejected Message ID	Provides the ID (Template ID) of the rejected message.	Numerical ID	2	From 0 to 2^16-1	Conditional	100

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5.4 APPLICATION MESSAGES

5.4.1 New Order (01)

Client ▶OEG
Message Usage:

The **NewOrder** (01) message is used by the clients to create a new order.

All the fields in the block of the message must be populated for each **NewOrder** (01) otherwise the message will be immediately rejected by the Order Entry Gateway (OEG).

Optional fields clients do not want to populate must still be present in the block and set to the null value by the client application. For example, for Market, Stop-Market and Market To Limit orders, the *Order Price* is useless but the field must be present and set to the null value.

Repeating Section Usage:

The message contains **four optional repeating sections:**

- **FreeText repeating section:** the first repeating section contains only the field *FreeText*. It can be populated once for Buy and Sell orders. Please note that the *FreeText* is part of the Clearing Data repeating section, which aggregates the clearing-related data (clearing aggregate) but it is set in a dedicated repeating section for performance purpose. Possible number of repeating groups: 0, 1.
- **MiFID Shortcodes repeating section:** the second repeating section contains the MiFID shortcodes and can be populated once for Buy and Sell orders. Possible number of repeating groups: 0, 1.
- **Additional Order Characteristics repeating section:** the third repeating section can be populated only once and contains optional order characteristics along with conditionally required fields. For the specific conditions on the conditionally required fields please refer to section *Order Characteristics*. Possible number of repeating groups: 0, 1.
- **Clearing Data repeating section:** the fourth repeating section contains the clearing fields. Possible number of repeating groups: 0, 1.
  - For standard Buy and Sell orders the first occurrence is optional and contains all the clearing data of the order.

Field	Short Description	Format	Len	Values	Presence	Page
Client Message Sequence Number	The Client Message Sequence Number is mandatory for all inbound messages, but the consistency of the sequence is not checked by the Exchange.	Sequence	4	From 0 to 2^32-2	Mandatory	76
Firm ID	Identifier of the member firm that sends the message.	Alphanumeric al ID	8	(See field description)	Mandatory	83
Message Sending Time	Indicates the time of message transmission, the consistency of the time provided is not checked by the Exchange. (Time in number of nanoseconds since 01/01/1970 UTC)	Epoch Time in Nanoseconds	8	From 0 to 2^64-2	Mandatory	90
Client Order ID	An identifier of a message assigned by the Client when submitting an order to the Exchange.	Numerical ID	8	From -2^63+1 to 2^63-1	Mandatory	76
Symbol Index	Exchange identification code of the instrument.	Numerical ID	4	From 0 to 2^32-2	Mandatory	101

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Field	Short Description	Format	Len	Values	Presence	Page
EMM	Defines the Exchange Market Mechanism applied on each platform.	Enumerated	1	(See field description)	Mandatory	80
Order Side	Indicates the side of the order.	Enumerated	1	1 = Buy 2 = Sell 3 = Cross [i]	Mandatory	97
Order Type	Type of Order.	Enumerated	1	(See field description)	Mandatory	97
Time In Force	Specifies the maximum validity of an order.	Enumerated	1	(See field description)	Mandatory	102
Order Price	Instrument price per quantity unit (To be calculated with Price/Index Level Decimals).	Price	8	From -2^63+1 to 2^63-1	Conditional	96
Order Quantity	Total order quantity, per quantity unit.(To be calculated with Quantity Decimals)	Quantity	8	From 0 to 2^64-2	Mandatory	96
ExecutionWithinFirm ShortCode	MiFID II short code, Execution within firm, identifier of the trader or algorithm responsible for the execution making.	Numerical ID	4	From -2^31+1 to 2^31-1	Mandatory	82
Trading Capacity	Indicates whether the order submission results from trading as matched principal, on own account or as any other capacity.	Enumerated	1	1 = Dealing on own account (DEAL) 2 = Matched principal (MTCH) 3 = Any other capacity (AOTC)	Mandatory	104
Account Type	Indicates the account type for which the order is entered. For example, an order can be entered for a client account, a house account or a liquidity provider account.	Enumerated	1	(See field description)	Mandatory	72
LP Role	Liquidity Provider Role identifies the type of the Liquidity Provider when Account Type is equal to "Liquidity Provider".	Enumerated	1	1 = Liquidity Provider or Market Maker 3 = Retail Liquidity Provider [C]	Conditional	89
Execution Instruction	Field used as instruction for order handling. Values specified, in the list of possible values, indicate the bit positions that should be used to set zero (0) or one (1) values. A single field contains multiple values provided in different positions.	Bitmap	1	(See field description)	Mandatory	81
Dark Execution Instruction	***[N/A]*** *Field used as instruction for dark order handling (For Future Use, Pending Regulatory Approval). Values specified, in the list of possible values, indicate the bit positions that should be used to set zero (0) or one (1) values. A single field contains multiple values provided in different positions.*	*Bitmap*	*1*	*(See field description)*	*Mandatory*	*79*

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Field	Short Description	Format	Len	Values	Presence	Page
MiFID Indicators	Field used as instruction for order handling. Values specified, in the list of possible values, indicate the bit positions that should be used to set zero (0) or one (1) values. A single field contains multiple values provided in different positions.	Bitmap	1	(See field description)	Mandatory	91
STP ID	***[N/A]** For Future Use.*	*Numerical ID*	*2*	*From 0 to 2^16-1*	*Optional*	*101*
Free Text	Free Text is manually entered by the trader issuing the order. This field is part of the clearing aggregate.	Text	18	(See field description)	Optional	84
InvestmentDecisionWFirmShortCode	MiFID II short code, Investment decision within firm, identifier of the trader or algorithm responsible for the investment decision.	Numerical ID	4	From -2^31 to 2^31-1	Conditional	85
NonExecutingBrokerShortCode	MiFID II short code, Non-executing broker, identifier of the non-executing broker.	Numerical ID	4	From -2^31 to 2^31-1	Optional	92
ClientIdentificationShortCode	MiFID II short code, Client identification code.	Numerical ID	4	From -2^31 to 2^31-1	Conditional	77
Stop Trigger Price	Stop Trigger Price is mandatory for stop orders.	Price	8	From -2^63 to 2^63-1	Conditional	101
Undisclosed Price	***[N/A]** Optional price for the hidden part of an Iceberg order. (For Future Use, Pending Regulatory Approval)*	*Price*	*8*	*From -2^63 to 2^63-1*	*Optional*	*106*
Disclosed Quantity	Maximum number of quantity units to be shown to market participants (Iceberg Order). (To be calculated with Quantity Decimals)	Quantity	8	From 1 to 2^64-1	Conditional	79
Minimum Order Quantity	Minimum quantity to be executed upon order entry (else the order is rejected), (To be calculated with Quantity Decimals).	Quantity	8	From 0 to 2^64-1	Optional	91
QuoteReqID	***[N/A]** Numerical RFQ identifier assigned by the matching engine, unique per instrument and EMM. (For Future Use)*	*Numerical ID*	*8*	*From 0 to 2^64-1*	*Conditional*	*99*
Order Expiration Time	Field used as time of order expiration for GTT orders.	Numerical ID	4	From 0 to 2^32-1	Conditional	95
Order Expiration Date	Field used as date of order expiration for GTD orders.	Date	2	From 0 to 2^16-1	Conditional	95
Peg Offset	***[N/A]** Tick offset for a pegged order. (For Future Use)*	*Numerical ID*	*1*	*From -128 to 127*	*Conditional*	*98*

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Field	Short Description	Format	Len	Values	Presence	Page
Trading Session Validity	***[N/A]*** *Trading Session Validity. Values specified, in the list of possible values, indicate the bit positions that should be used to set zero (0) or one (1) values. A single field contains multiple values provided in different positions.*	*Bitmap*	*1*	*1 = Session 1* *2 = Session 2* *3 = Session 3*	*Conditional*	*104*
Undisclosed Iceberg Type	***[N/A]*** *Order handling related to the undisclosed part of an Iceberg order eligible to a matching in the Dark pool of liquidity. (For Future Use, Pending Regulatory Approval)*	*Enumerated*	*1*	*1 = Limit* *2 = Peg Mid-Point* *3 = Peg Primary* *4 = Peg Market*	*Optional*	*106*
Triggered Stop Time In Force	Specifies the maximum validity of an triggered stop order.	Enumerated	1	0 = Day 1 = Good Till Cancel 6 = Good till Date	Conditional	105
Clearing Firm ID	Clearing firm ID.	Alphanumeric al ID	8	(See field description)	Optional	75
Client ID	Field used to identify the client (investor).	Alphanumeric al ID	8	(See field description)	Optional	76
Account Number	Account Number. Client account number identifying the investor's account. This field is part of the clearing aggregate.	Alphanumeric al ID	12	(See field description)	Optional	72
Technical Origin	Indicates the origin of the order; for example, manual entry, or an order coming from a Program Trading system. This field is part of the clearing aggregate.	Enumerated	1	(See field description)	Optional	102
Open Close	Open Close Indicator, Posting action. This field is part of the clearing aggregate.	Bitmap	2	(See field description)	Optional	94
Clearing Instruction	Clearing Instruction.	Enumerated	2	(See field description)	Optional	75
Account Type Cross	***[N/A]*** *Indicates the account type for which the sell side of a cross order is entered.*	*Enumerated*	*1*	*(See field description)*	*Optional*	*72*

5.4.2 Ack (03)

Client ◀OEG
Message Usage:

The acknowledgment message is sent by the matching engine to confirm that the corresponding request has been taken into account by the matching engine. Moreover it usually allows the client to reconcile the *Client Order ID* he has given to its request with the *Order ID* assigned by the matching engine.

Note: *Original Client Order ID* is only provided in the **Ack** (03) as response to a **CancelReplace** (06) message if originally used in the corresponding request.

The acknowledgment message is sent by the matching engine in the following situations:

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- Responses to **NewOrder** (01) requests in case of acceptation;
- Responses to **CancelReplace** (06) requests in case of acceptation;
- Responses to **CollarBreachConfirmation** (20) requests in case of acceptation;
- Responses to **PriceInput** (28) requests in case of acceptation;
- Responses to **NewOrder** (01) or **CancelReplace** (06) for an Iceberg Transformed to Limit due to Minimum size;
- Notifications of triggered Stop-Market/Stop-Limit orders;
- Notifications of triggered Valid For Uncrossing and Valid For Closing Uncrossing orders;
- Notifications of refilled Iceberg orders;
- Notifications of MTL orders transformed into Limit at the end of an Uncrossing trading phase;
- Notifications of order creations by Market Operations.

As a response to a NewOrder (01) request, *Ack Type*=New Order Ack.
It confirms the creation of the new order and specifies the *Order ID*, *Order Side*, *Order Price* (if any), *Order Quantity* for which the system has processed the order.

As a response to a CancelReplace (06) request, *Ack Type*=Replace Ack.
It confirms the modification of the order identified by the *Order ID* and specifies the *Order Side*, *Order Price (if any)*, *Order Quantity* for which the system has processed the modified order. The *Original Client Order ID* will also be provided if it was provided in the original corresponding request. Note that the *Order Quantity* is the total order quantity originally submitted or newly modified by the client and not the leaves quantity.

As a response to a CollarBreachConfirmation (20) request, *Ack Type*=Collar Confirmation Ack.
It confirms that the price of the order lies now within the updated collars and that the new order has been created. It also specifies the *Order ID, Order Side*, *Order Price* (if any), *Order Quantity* for which the system has processed the order.

As a response to a PriceInput (20) request, *Ack Type*=Price Input Ack.
It confirms that the matching engine has accepted the submitted reference price. It specifies the accepted price in the field *Order Price*, the fields *Order Side* and *Order Quantity* are irrelevant and then set to the null value.

As a response to a NewOrder (01) or CancelReplace (06) request for an Iceberg Transformed to Limit due to Minimum size, *Ack Type*= Iceberg Transformed to Limit due to Minimum size.
It confirms the creation of the new order or the modification of the order but it notifies the client that his iceberg order has been transformed into a limit order because any Iceberg order that is entered into the book below the minimum iceberg amount (as defined by MiFID II), or has its total amount updated to be below this amount, is automatically converted to a Limit order.

As a notification of a triggered Stop-Market/Stop-Limit order, *Ack Type*=Stop Triggered Ack.
It is an unsolicited message which notifies the client that its stop order previously submitted (identified by the *Order ID*) has been triggered and it specifies the *Order Side*, *Order Price* (if any), *Order Quantity* and *Order Priority* for which the system has processed the order.

As a notification of a triggered Valid For Uncrossing and Valid For Closing Uncrossing orders, *Ack Type*= VFU/VFC Triggered Ack.
It is an unsolicited message which notifies the client that its VFU/VFC order previously submitted (identified by the *Order ID*) has been triggered and it specifies the *Order Side*, *Order Price* (if any), *Order Quantity* and *Order Priority* for which the system has processed the order.

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As a notification of a refilled Iceberg order, *Ack Type*=Refilled Iceberg Ack.
It is an unsolicited message which notifies the client that its Iceberg order has been refilled and it specifies the *Order Side*, *Order Price*, *Order Quantity* and *Order Priority* for which the system has processed the refilled order. Note that the *Order Quantity* is the total order quantity originally submitted by the client and not the quantity shown to the market nor the leaves quantity.

As a notification of a resting MTL order transformed into Limit order during uncrossing, *Ack Type*=MTL Second Ack.
It is an unsolicited message which notifies the client that its MTL has been transformed into a Limit order. It specifies the *Order Side*, *Order Price*, *Order Quantity* for which the system has processed the order. The *Order Price* is the price of the transformed Limit order and the *Order Quantity* is the total order quantity submitted by the client and not the leaves quantity.
It occurs if at the end of an Uncrossing trading phase:

- the instrument switches to a Continuous trading phase, all MTL orders (partially or not executed) always become Limit orders at the Uncrossing price for their remaining quantity;
- the instrument switches to a Call trading phase, all MTL orders partially executed become Limit orders at the Uncrossing price for their remaining quantity.

As a notification of an order created on behalf of a client by Market Operations, *Ack Type*= Order Creation By Market Operations.
It is an unsolicited message which notifies the client that Market Operations has created an order on his behalf. It specifies the *Order ID*, *Order Side*, *Order Price*, *Order Quantity* for which the system has processed the order.

Private & Public feed reconciliation:

The **Ack** (03) message allows the clients to reconcile their orders with the Market Data feed by using the field *Order Priority*.

This mechanism is clearly explained in the Kinematics document in Section *1.2.5.1 Private and Public feed reconciliation*.

This allows the clients to identify their orders in public feed as the *Order Priority* is also provided in the public **OrderUpdate** (1002) message. The *Order Priority* is thus used as an order identifier.

Please note that the field Order Priority is provided for all orders on the market. List below identifies the cases in which it is provided:

- In the **Ack** (03) message as a response to a **NewOrder** (01) (*including Stop-market/Stop-limit orders*) or a **CollarBreachConfirmation** (20);
- In the **Ack** (03) message for a triggered Stop-market/Stop-limit and VFU/VFC orders;
- In the **Ack** (03) message for a refilled Iceberg Order.

Modifications of non-triggered stop orders should not result in modification of their priority.

Field	Short Description	Format	Len	Values	Presence	Page
Message Sequence Number	Indicates the Message Sequence Number per OE Session. (for messages sent by the Exchange)	Sequence	4	From 0 to 2^32-2	Mandatory	90
Firm ID	Identifier of the member firm that sends the message.	Alphanumeric al ID	8	(See field description)	Mandatory	83

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Field	Short Description	Format	Len	Values	Presence	Page
Message Sending Time	Indicates the time of message transmission, the consistency of the time provided is not checked by the Exchange. (Time in number of nanoseconds since 01/01/1970 UTC)	Epoch Time in Nanoseconds	8	From 0 to 2^64-1	Conditional	90
OEG IN From Member	Order Entry Gateway IN time from member (in ns), measured when inbound message enters the gateway (Time in number of nanoseconds since 01/01/1970 UTC).	Epoch Time in Nanoseconds	8	From 0 to 2^64-1	Conditional	93
OEG OUT To ME	Gateway OUT time to ME (in ns), measured when inbound message leaves the gateway (Time in number of nanoseconds since 01/01/1970 UTC).	Epoch Time in Nanoseconds	8	From 0 to 2^64-1	Conditional	93
Book IN Time	Matching Engine IN time (in ns), time at which the corresponding inbound message entered the Matching Engine. (Time in number of nanoseconds since 01/01/1970 UTC)	Epoch Time in Nanoseconds	8	From 0 to 2^64-2	Mandatory	74
Book OUT Time	Matching Engine OUT time (in ns), when message leaves the Matching Engine (Time in number of nanoseconds since 01/01/1970 UTC).	Epoch Time in Nanoseconds	8	From 0 to 2^64-1	Conditional	74
OEG IN From ME	Gateway IN time from ME (in ns), measured when outbound message enters the gateway (Time in number of nanoseconds since 01/01/1970 UTC).	Epoch Time in Nanoseconds	8	From 0 to 2^64-1	Conditional	92
OEG OUT To Member	Order Entry Gateway OUT time to member (in ns), measured when outbound message leaves the gateway (Time in number of nanoseconds since 01/01/1970 UTC).	Epoch Time in Nanoseconds	8	From 0 to 2^64-1	Conditional	93
Client Order ID	An identifier of a message assigned by the Client when submitting an order to the Exchange.	Numerical ID	8	From -2^63 to 2^63-1	Conditional	76
Original Client Order ID	Client order ID of the original order.	Numerical ID	8	From -2^63 to 2^63-1	Conditional	98
Symbol Index	Exchange identification code of the instrument.	Numerical ID	4	From 0 to 2^32-2	Mandatory	101
EMM	Defines the Exchange Market Mechanism applied on each platform.	Enumerated	1	(See field description)	Mandatory	80
Order Side	Indicates the side of the order.	Enumerated	1	1 = Buy 2 = Sell	Conditional	97
Ack Type	Indicates the type of the Ack message	Enumerated	1	(See field description)	Mandatory	73

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Field	Short Description	Format	Len	Values	Presence	Page
Ack Phase	Indicates the trading phase during which the Matching Engine has processed the event that has triggered this Ack (03) message.	Enumerated	1	(See field description)	Conditional	73
Order ID	Numerical order identifier assigned by the matching engine, unique per instrument and EMM.	Numerical ID	8	From 0 to 2^64-1	Conditional	95
Order Priority	Rank giving the priority of the order. The order with the lowest value of Order Priority has the highest priority.	Numerical ID	8	From 0 to 2^64-1	Conditional	96
Order Price	Instrument price per quantity unit (To be calculated with Price/Index Level Decimals).	Price	8	From -2^63 to 2^63-1	Conditional	96
Order Quantity	Total order quantity, per quantity unit.(To be calculated with Quantity Decimals)	Quantity	8	From 0 to 2^64-1	Conditional	96
Ack Qualifiers	Field used to provide additional information on the corresponding order. Values specified, in the list of possible values, indicate the bit positions that should be used to set zero (0) or one (1) values. A single field contains multiple values provided in different positions.	Bitmap	1	(See field description)	Mandatory	73

5.4.3 Fill (04)

Client ◀OEG

Message Usage:

The **Fill** (04) message is an unsolicited message sent by the matching engine and is used to relay order execution reports. It notifies the issuers of orders that their orders have been partially or completely filled.

The order that has matched is identified by its *Order ID*.

The message specifies the price (*Last Traded Price*), the quantity (*Last Traded Quantity*), the execution type (*Trade Type*) and the time (*Trade Time*) of the execution along with the *Execution ID* assigned by the matching engine. It also provides the remaining quantity of the order (*Leaves Quantity*).

For purposes of Trading Venue Transaction Identification Code (TVTIC), clients are required to concatenate the values of fields *Symbol Index*, *EMM* and *Execution ID*, provided in the **Fill** (04) message in order to obtain the unique Execution ID by instrument per MIC and day for reporting purposes.

The concatenated value can also be mapped to the value provided in the field "*MiFID Execution ID*" of the **FullTradeInfo** (1004) message in MDG.

Repeating Section Usage:

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The message may contain **two repeating sections:**

- **Additional Execution Data repeating section:** the first repeating section can be populated only once and contains only one field used by the matching engine: *Counterpart Firm ID*. Possible number of repeating groups: 0, 1.
- **Strategy Execution Data repeating section:** the second repeating section is only used by the derivatives matching engine. N/A for LuxSE

Field	Short Description	Format	Len	Values	Presence	Page
Message Sequence Number	Indicates the Message Sequence Number per OE Session. (for messages sent by the Exchange)	Sequence	4	From 0 to 2^32-2	Mandatory	90
Firm ID	Identifier of the member firm that sends the message.	Alphanumerical ID	8	(See field description)	Mandatory	83
Trade Time	Time of the trade.	Epoch Time in Nanoseconds	8	From 0 to 2^64-2	Mandatory	104
Book OUT Time	Matching Engine OUT time (in ns), when message leaves the Matching Engine (Time in number of nanoseconds since 01/01/1970 UTC).	Epoch Time in Nanoseconds	8	From 0 to 2^64-1	Conditional	74
OEG IN From ME	Gateway IN time from ME (in ns), measured when outbound message enters the gateway (Time in number of nanoseconds since 01/01/1970 UTC).	Epoch Time in Nanoseconds	8	From 0 to 2^64-1	Conditional	92
OEG OUT To Member	Order Entry Gateway OUT time to member (in ns), measured when outbound message leaves the gateway (Time in number of nanoseconds since 01/01/1970 UTC).	Epoch Time in Nanoseconds	8	From 0 to 2^64-1	Conditional	93
Client Order ID	An identifier of a message assigned by the Client when submitting an order to the Exchange.	Numerical ID	8	From -2^63 to 2^63-1	Conditional	76
Symbol Index	Exchange identification code of the instrument.	Numerical ID	4	From 0 to 2^32-2	Mandatory	101
EMM	Defines the Exchange Market Mechanism applied on each platform.	Enumerated	1	(See field description)	Mandatory	80
Order Side	Indicates the side of the order.	Enumerated	1	1 = Buy 2 = Sell	Mandatory	97
Trade Type	Type of trade.	Enumerated	1	(See field description)	Mandatory	104
Trade Qualifier	Trade Qualifier. Values specified, in the list of possible values, indicate the bit positions that should be used to set zero (0) or one (1) values. A single field contains multiple values provided in different positions.	Bitmap	1	(See field description)	Mandatory	103

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Field	Short Description	Format	Len	Values	Presence	Page
Order ID	Numerical order identifier assigned by the matching engine, unique per instrument and EMM.	Numerical ID	8	From 0 to 2^64-2	Mandatory	95
Last Traded Price	The Last Traded Price indicates the price of last fill on an instrument (to be calculated with the Price/Index Decimals).	Price	8	From -2^63+1 to 2^63-1	Mandatory	87
Last Traded Quantity	The Last Traded Quantity indicates the quantity of last fill on an instrument (to be calculated with the Quantity Decimals).	Quantity	8	From 0 to 2^64-2	Mandatory	87
Leaves Quantity	Indicates the remaining quantity of an order, i.e. the quantity open for further execution.	Quantity	8	From 0 to 2^64-2	Mandatory	87
Execution ID	The Execution ID is unique per instrument and per day. It is the unique identifier of a trade per instrument. This field is provided in case of fill, partial fill or trade cancellation.	Numerical ID	4	From 0 to 2^32-2	Mandatory	81
Execution Phase	Indicates the trading phase during which the trade has occurred.	Enumerated	1	(See field description)	Mandatory	82
Counterpart Firm ID	ID of the Counterpart Firm in specific cases.	Alphanumerical ID	8	(See field description)	Conditional	78
Underlying Last Traded Price	***[N/A]*** *For Basis and Against Actual trades only: underlying cash leg price.*	*Price*	*8*	*From -2^63 to 2^63-1*	*Conditional*	*105*
Package ID	***[N/A]*** *ID used to link several Large in Scale (LiS) Package trades together.*	*Alphanumerical ID*	*12*	*(See field description)*	*Conditional*	*98*
Underlying Instrument ID	***[N/A]*** *The commodity key for the other component leg of an asset allocation or ISIN code for the underlying cash leg that is part of a Basis or Against Actuals trade.*	*Numerical ID*	*4*	*From 0 to 2^32-1*	*Conditional*	*105*
Leg Last Traded Price	***[N/A]*** *Leg Last Traded Price*	*Price*	*8*	*From -2^63 to 2^63-1*	*Conditional*	*88*
Leg Last Traded Quantity	***[N/A]*** *Leg Last Traded Quantity*	*Quantity*	*8*	*From 0 to 2^64-1*	*Conditional*	*88*
Leg Instrument ID	***[N/A]*** *Numerical leg instrument identifier (SymbolIndex) valid for the life of the instrument.*	*Numerical ID*	*4*	*From 0 to 2^32-1*	*Conditional*	*87*
Leg Side	***[N/A]*** *Indicates the side of the trade leg.*	*Enumerated*	*1*	*1 = Buy* *2 = Sell*	*Conditional*	*88*

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5.4.4 Kill (05)

Client ◀OEG
Message Usage:

The **Kill** (05) message is a message sent by the matching engine to notify the order issuer that his or her order is no longer active.

The **Kill** (05) message is sent by the matching engine in the following situations:

- Responses to **CancelRequest** (12) requests in case of acceptation;
- Responses to **MassCancel** (13) requests for each order successfully cancelled;
- Notifications of the cancellation of the remaining quantity of IOC orders;
- Notification of orders cancelled by STP;
- Notifications of expired orders;
- Notifications of killed orders due to the Cancel On Disconnect mechanism;
- Notifications of killed orders due to a Kill command;
- Notifications of orders eliminated due to Corporate Events;
- Notifications of orders cancelled by Market Operations;
- Notifications of MTL orders cancelled at the end of an Uncrossing trading phase when switching to a Continuous trading phase if the order book on the opposite side is empty;

In the block of the message the field *Client Order ID* identifies the request originally sent by the client that triggered the **Kill** (05) message, thus it is filled only if the **Kill** (05) message was solicited (e.g. as a response to a **CancelRequest** (06) message). It represents the data provided by the client and does not identify the id used by the system to kill the order, for these purposes the system uses the Order ID.

The killed order is identified by its *Order ID* and a *Kill Reason* is always provided for each killed order.

Field	Short Description	Format	Len	Values	Presence	Page
Message Sequence Number	Indicates the Message Sequence Number per OE Session. (for messages sent by the Exchange)	Sequence	4	From 0 to 2^32-2	Mandatory	90
Firm ID	Identifier of the member firm that sends the message.	Alphanumeric al ID	8	(See field description)	Mandatory	83
Message Sending Time	Indicates the time of message transmission, the consistency of the time provided is not checked by the Exchange. (Time in number of nanoseconds since 01/01/1970 UTC)	Epoch Time in Nanoseconds	8	From 0 to 2^64-1	Conditional	90

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Field	Short Description	Format	Len	Values	Presence	Page
OEG IN From Member	Order Entry Gateway IN time from member (in ns), measured when inbound message enters the gateway (Time in number of nanoseconds since 01/01/1970 UTC).	Epoch Time in Nanoseconds	8	From 0 to 2^64-1	Conditional	93
OEG OUT To ME	Gateway OUT time to ME (in ns), measured when inbound message leaves the gateway (Time in number of nanoseconds since 01/01/1970 UTC).	Epoch Time in Nanoseconds	8	From 0 to 2^64-1	Conditional	93
Book IN Time	Matching Engine IN time (in ns), time at which the corresponding inbound message entered the Matching Engine. (Time in number of nanoseconds since 01/01/1970 UTC)	Epoch Time in Nanoseconds	8	From 0 to 2^64-2	Mandatory	74
Book OUT Time	Matching Engine OUT time (in ns), when message leaves the Matching Engine (Time in number of nanoseconds since 01/01/1970 UTC).	Epoch Time in Nanoseconds	8	From 0 to 2^64-1	Conditional	74
OEG IN From ME	Gateway IN time from ME (in ns), measured when outbound message enters the gateway (Time in number of nanoseconds since 01/01/1970 UTC).	Epoch Time in Nanoseconds	8	From 0 to 2^64-1	Conditional	92
OEG OUT To Member	Order Entry Gateway OUT time to member (in ns), measured when outbound message leaves the gateway (Time in number of nanoseconds since 01/01/1970 UTC).	Epoch Time in Nanoseconds	8	From 0 to 2^64-1	Conditional	93
Client Order ID	An identifier of a message assigned by the Client when submitting an order to the Exchange.	Numerical ID	8	From -2^63 to 2^63-1	Conditional	76
Original Client Order ID	Client order ID of the original order.	Numerical ID	8	From -2^63 to 2^63-1	Conditional	98
Order ID	Numerical order identifier assigned by the matching engine, unique per instrument and EMM.	Numerical ID	8	From 0 to 2^64-2	Mandatory	95
Symbol Index	Exchange identification code of the instrument.	Numerical ID	4	From 0 to 2^32-2	Mandatory	101
EMM	Defines the Exchange Market Mechanism applied on each platform.	Enumerated	1	(See field description)	Mandatory	80
Kill Reason	Order Kill Reason	Enumerated	2	(See field description)	Mandatory	85

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5.4.5 Cancel Replace (06)

Client ▶OEG
Message Usage:

The **CancelReplace** (06) message is used to modify **active orders in the order book**, note that only the originating Firm (regardless of the Logical Access) is authorized to modify its orders.

An active order can be modified by specifying the *Order ID* of the original order or the *Original Client Order ID*:

- If the **CancelRequest** (12) message contains both *Order ID* and *Original Client Order ID*, the matching engine uses the *Order ID* to cancel the order. If the *Order ID* specified in the message is not found in the active orders list, the order modification is rejected. If the Order ID specified in the message is found the matching engine does not check that the Client Order ID of the order found ("modified" order) matches with the *Original Client Order ID* contained in the **CancelRequest** (12) message.

Further to the previous remark on the *Order ID*, all the **fields in the block of the message must be populated** for each **CancelReplace** (06) otherwise the message will be immediately rejected by the Order Entry Gateway (OEG).

Please note that the field *Client Order ID* is an identifier of the **CancelReplace** (06) request.

The MiFID short codes included in this message concern the **CancelReplace** (06) itself ; it will not lead to any modification on the MiFID short codes previously submitted and associated to the live order to be modified.

Repeating Section Usage:

The message contains **three optional repeating sections**:

- **FreeText repeating section:** the first repeating section contains only the field *FreeText*. It can be populated only once and will override the previously submitted value if populated, if not populated the previously submitted value will be deleted. Possible number of repeating groups: 0, 1.
- **Additional Order Characteristics repeating section:** the third repeating can be populated only once and contains optional order characteristics. If some optional fields are populated those values will override the previously submitted values, otherwise if not populated the previously submitted value will be deleted. Possible number of repeating groups: 0, 1.
- **Clearing Data repeating section:** the forth repeating section contains the clearing fields. If some values are populated they will override the previously submitted values, otherwise if not populated the previously submitted value will be deleted. Possible number of repeating groups: 0, 1.

Handling of fields not available for modification:

- *Account Type* and *LP Role* fields present in this message will always be ignored by the system, which means that clients are not able to modify *Account Type/ LP Role* of their live orders. If modification is required clients must cancel their existing order and submit a new one with a **NewOrder** (01) message.
- *Order Side* and *Order Type* fields present in this message are not available for modification but the values provided must match the values originally set on submission of the order. In the case where the values in the **CancelReplace** (06) message do not match with the *Order Side* and *Order Type* of the targeted order it will lead to the rejection of the request with the error code 2101 "Unknown Order". (For triggered Stop orders, the value in field *Order Type* must be equal to Limit (2), for Stop-limit, or Market (1) for Stop-market order, corresponding to the type of stop order originally submitted.)

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Field	Short Description	Format	Len	Values	Presence	Page
Client Message Sequence Number	The Client Message Sequence Number is mandatory for all inbound messages, but the consistency of the sequence is not checked by the Exchange.	Sequence	4	From 0 to 2^32-2	Mandatory	76
Firm ID	Identifier of the member firm that sends the message.	Alphanumerical ID	8	(See field description)	Mandatory	83
Message Sending Time	Indicates the time of message transmission, the consistency of the time provided is not checked by the Exchange. (Time in number of nanoseconds since 01/01/1970 UTC)	Epoch Time in Nanoseconds	8	From 0 to 2^64-2	Mandatory	90
ExecutionWithinFirmShortCode	MiFID II short code, Execution within firm, identifier of the trader or algorithm responsible for the execution making.	Numerical ID	4	From -2^31+1 to 2^31-1	Mandatory	82
ClientIdentificationShortCode	MiFID II short code, Client identification code.	Numerical ID	4	From -2^31 to 2^31-1	Conditional	77
Client Order ID	An identifier of a message assigned by the Client when submitting an order to the Exchange.	Numerical ID	8	From -2^63+1 to 2^63-1	Mandatory	76
Order ID	Numerical order identifier assigned by the matching engine, unique per instrument and EMM.	Numerical ID	8	From 0 to 2^64-1	Conditional	95
Original Client Order ID	Client order ID of the original order.	Numerical ID	8	From -2^63 to 2^63-1	Conditional	98
Order Price	Instrument price per quantity unit (To be calculated with Price/Index Level Decimals).	Price	8	From -2^63 to 2^63-1	Conditional	96
Order Quantity	Total order quantity, per quantity unit.(To be calculated with Quantity Decimals)	Quantity	8	From 0 to 2^64-2	Mandatory	96
Symbol Index	Exchange identification code of the instrument.	Numerical ID	4	From 0 to 2^32-2	Mandatory	101
EMM	Defines the Exchange Market Mechanism applied on each platform.	Enumerated	1	(See field description)	Mandatory	80
Order Side	Indicates the side of the order.	Enumerated	1	1 = Buy 2 = Sell	Mandatory	97
Order Type	Type of Order.	Enumerated	1	(See field description)	Mandatory	97
Time In Force	Specifies the maximum validity of an order.	Enumerated	1	(See field description)	Mandatory	102
Account Type	***[N/A]*** *Indicates the account type for which the order is entered. For example, an order can be entered for a client account, a house account or a liquidity provider account.*	*Enumerated*	*1*	*(See field description)*	*Optional*	*72*

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Field	Short Description	Format	Len	Values	Presence	Page
LP Role	***[N/A]** Liquidity Provider Role identifies the type of the Liquidity Provider when Account Type is equal to "Liquidity Provider".*	*Enumerated*	*1*	*1 = Liquidity Provider or Market Maker* *3 = Retail Liquidity Provider [C]*	*Optional*	*89*
Execution Instruction	Field used as instruction for order handling. Values specified, in the list of possible values, indicate the bit positions that should be used to set zero (0) or one (1) values. A single field contains multiple values provided in different positions.	Bitmap	1	(See field description)	Mandatory	81
Dark Execution Instruction	***[N/A]** Field used as instruction for dark order handling (For Future Use, Pending Regulatory Approval). Values specified, in the list of possible values, indicate the bit positions that should be used to set zero (0) or one (1) values. A single field contains multiple values provided in different positions.*	*Bitmap*	*1*	*(See field description)*	*Mandatory*	*79*
MiFID Indicators	Field used as instruction for order handling. Values specified, in the list of possible values, indicate the bit positions that should be used to set zero (0) or one (1) values. A single field contains multiple values provided in different positions.	Bitmap	1	(See field description)	Mandatory	91
STP ID	***[N/A]** For Future Use.*	*Numerical ID*	*2*	*From 0 to 2^16-1*	*Optional*	*101*
Free Text	Free Text is manually entered by the trader issuing the order. This field is part of the clearing aggregate.	Text	18	(See field description)	Optional	84
Stop Trigger Price	Stop Trigger Price is mandatory for stop orders.	Price	8	From -2^63 to 2^63-1	Conditional	101
Peg Offset	***[N/A]** Tick offset for a pegged order. (For Future Use)*	*Numerical ID*	*1*	*From -128 to 127*	*Conditional*	*98*
Undisclosed Price	***[N/A]** Optional price for the hidden part of an Iceberg order. (For Future Use, Pending Regulatory Approval)*	*Price*	*8*	*From -2^63 to 2^63-1*	*Optional*	*106*
Disclosed Quantity	Maximum number of quantity units to be shown to market participants (Iceberg Order). (To be calculated with Quantity Decimals)	Quantity	8	From 1 to 2^64-1	Conditional	79
Order Expiration Time	Field used as time of order expiration for GTT orders.	Numerical ID	4	From 0 to 2^32-1	Conditional	95
Order Expiration Date	Field used as date of order expiration for GTD orders.	Date	2	From 0 to 2^16-1	Conditional	95

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Field	Short Description	Format	Len	Values	Presence	Page
Trading Session Validity	***[N/A]** Trading Session Validity. Values specified, in the list of possible values, indicate the bit positions that should be used to set zero (0) or one (1) values. A single field contains multiple values provided in different positions.*	*Bitmap*	*1*	*1 = Session 1* *2 = Session 2* *3 = Session 3*	*Conditional*	*104*
Triggered Stop Time In Force	Specifies the maximum validity of an triggered stop order.	Enumerated	1	0 = Day 1 = Good Till Cancel 6 = Good till Date	Conditional	105
Undisclosed Iceberg Type	***[N/A]** Order handling related to the undisclosed part of an Iceberg order eligible to a matching in the Dark pool of liquidity. (For Future Use, Pending Regulatory Approval)*	*Enumerated*	*1*	*1 = Limit* *2 = Peg Mid-Point* *3 = Peg Primary* *4 = Peg Market*	*Optional*	*106*
Clearing Firm ID	Clearing firm ID.	Alphanumeric al ID	8	(See field description)	Optional	75
Client ID	Field used to identify the client (investor).	Alphanumeric al ID	8	(See field description)	Optional	76
Account Number	Account Number. Client account number identifying the investor's account. This field is part of the clearing aggregate.	Alphanumeric al ID	12	(See field description)	Optional	72
Technical Origin	Indicates the origin of the order; for example, manual entry, or an order coming from a Program Trading system. This field is part of the clearing aggregate.	Enumerated	1	(See field description)	Optional	102
Open Close	Open Close Indicator, Posting action. This field is part of the clearing aggregate.	Bitmap	2	(See field description)	Optional	94
Clearing Instruction	Clearing Instruction.	Enumerated	2	(See field description)	Optional	75

5.4.6 Reject (07)

Client ◀OEG
Message Usage:

The **Reject** (07) message is a message sent by the matching engine to notify the request issuer that his or her request is not processed by the matching engine. It is a possible response to every application message sent by the client.

The **Reject** (07) message is sent by the matching engine in the following situations:

- **For technical reasons**: symbol is unknown, message is wrongly formatted, unknown value, client not authorized to send messages, etc.
- **For functional reasons**: type of order forbidden for this trading phase, type of order not authorized for the client, quantity to modify no longer available, last traded price better than the stop trigger price, collars breached, etc.

Please refer to the Error Code List document for an exhaustive list of those cases.

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The *Client Order ID* provided in the Reject message identifies the request which is rejected; it does not refer to an order of the order book. Hence in case of a rejection of a **CancelReplace** (06) message, the *Client Order ID* field will refer to the *Client Order ID* provided in the rejected **CancelReplace** (06) request, not to the targeted order.

In case of a functional rejection of a **NewOrder** (01) the matching engine will assign an *Order ID* to the rejected order.

If a client sends an Invalid value in an enumerated field, then in place of this value the Reject messages will contain a Null value (note: the *Firm ID* behaves as an enumerated field).

If a client sends an unknown ID (such as *Symbol Index*, *Order Id*, *Original Client Order ID*…) which, however, can be decoded by the system, this value is provided as entered back to the client in the **Reject** (07) message sent back.

The reason of the rejection is provided by the Error Code, and a text message explaining the error is provided in the Error Code List.

All application messages are rejected by the **Reject** (07) message, unless for specific case for more information on which please refer to **TechnicalReject** (108) message.

Repeating Section Usage:

In this message the repeating section is populated only once and only in the case of a rejection due to a breached collar. It provides the details related to the breached collar (high or low) and its price. Possible number of repeating groups: 0, 1.

Field	Short Description	Format	Len	Values	Presence	Page
Message Sequence Number	Indicates the Message Sequence Number per OE Session. (for messages sent by the Exchange)	Sequence	4	From 0 to 2^32-2	Mandatory	90
Firm ID	Identifier of the member firm that sends the message.	Alphanumeric al ID	8	(See field description)	Conditional	83
Message Sending Time	Indicates the time of message transmission, the consistency of the time provided is not checked by the Exchange. (Time in number of nanoseconds since 01/01/1970 UTC)	Epoch Time in Nanoseconds	8	From 0 to 2^64-1	Conditional	90
OEG IN From Member	Order Entry Gateway IN time from member (in ns), measured when inbound message enters the gateway (Time in number of nanoseconds since 01/01/1970 UTC).	Epoch Time in Nanoseconds	8	From 0 to 2^64-1	Conditional	93
OEG OUT To ME	Gateway OUT time to ME (in ns), measured when inbound message leaves the gateway (Time in number of nanoseconds since 01/01/1970 UTC).	Epoch Time in Nanoseconds	8	From 0 to 2^64-1	Conditional	93

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Field	Short Description	Format	Len	Values	Presence	Page
Book IN Time	Matching Engine IN time (in ns), time at which the corresponding inbound message entered the Matching Engine. (Time in number of nanoseconds since 01/01/1970 UTC)	Epoch Time in Nanoseconds	8	From 0 to 2^64-1	Conditional	74
Book OUT Time	Matching Engine OUT time (in ns), when message leaves the Matching Engine (Time in number of nanoseconds since 01/01/1970 UTC).	Epoch Time in Nanoseconds	8	From 0 to 2^64-1	Conditional	74
OEG IN From ME	Gateway IN time from ME (in ns), measured when outbound message enters the gateway (Time in number of nanoseconds since 01/01/1970 UTC).	Epoch Time in Nanoseconds	8	From 0 to 2^64-1	Conditional	92
OEG OUT To Member	Order Entry Gateway OUT time to member (in ns), measured when outbound message leaves the gateway (Time in number of nanoseconds since 01/01/1970 UTC).	Epoch Time in Nanoseconds	8	From 0 to 2^64-1	Conditional	93
Client Order ID	An identifier of a message assigned by the Client when submitting an order to the Exchange.	Numerical ID	8	From -2^63 to 2^63-1	Conditional	76
Order ID	Numerical order identifier assigned by the matching engine, unique per instrument and EMM.	Numerical ID	8	From 0 to 2^64-1	Conditional	95
Symbol Index	Exchange identification code of the instrument.	Numerical ID	4	From 0 to 2^32-1	Conditional	101
EMM	Defines the Exchange Market Mechanism applied on each platform.	Enumerated	1	(See field description)	Conditional	80
Rejected Message	*[N/A] Deprecated field*	*Numerical ID*	*1*	*From 0 to 2^8-1*	*Conditional*	*100*
Error Code	Error code in case of rejection.	Numerical ID	2	From 0 to 2^16-2	Mandatory	80
Rejected Message ID	Provides the ID (Template ID) of the rejected message.	Numerical ID	2	From 0 to 2^16-1	Conditional	100
Collar Rejection Type	Hit collar type (high or low) in case of order rejection due to collar breach.	Enumerated	1	1 = Low dynamic collar 2 = High dynamic collar	Conditional	78
Breached Collar Price	Breached collar price in case of collar rejection.	Price	8	From -2^63 to 2^63-1	Conditional	75

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5.4.7 Cancel Request (12)

Client ▶OEG
Message Usage:

The **CancelRequest** (12) message is used to request the cancellation of the entire remaining quantity of **an active order in the order book**, note that only the originating Firm is authorized to cancel its own orders.

An order cancellation only applies to the remaining quantity of an order in the book. If the order to be cancelled was partially filled, the cancellation has no effect on the previous trades (or any previously executed quantity).

An active order can be cancelled by specifying the *Client Order ID* of the original order:

- If the **CancelRequest** (12) message contains both *Order ID* and *Original Client Order ID*, the matching engine uses the *Order ID* to cancel the order. If the *Order ID* specified in the message is not found in the active orders list, the order modification is rejected. If the *Order ID* specified in the message is found the matching engine does not check that the Client Order ID of the order found ("cancelled" order) matches with the *Original Client Order ID* contained in the **CancelRequest** (12) message.

In the case where the values of the *Order Side* and/or *Order Type* provided in the **CancelRequest** (12) message do not match with the *Order Side* and *Order Type* of the targeted order it will lead to the rejection of the request with the error code 2101 "Unknown Order". (For triggered Stop orders, the value in field *Order Type* must be equal to Limit (2), for Stop-limit, or Market (1) for Stop-market order, corresponding to the type of stop order originally submitted.)

Field	Short Description	Format	Len	Values	Presence	Page
Client Message Sequence Number	The Client Message Sequence Number is mandatory for all inbound messages, but the consistency of the sequence is not checked by the Exchange.	Sequence	4	From 0 to 2^32-2	Mandatory	76
Firm ID	Identifier of the member firm that sends the message.	Alphanumeric al ID	8	(See field description)	Mandatory	83
Message Sending Time	Indicates the time of message transmission, the consistency of the time provided is not checked by the Exchange. (Time in number of nanoseconds since 01/01/1970 UTC)	Epoch Time in Nanoseconds	8	From 0 to 2^64-2	Mandatory	90
ExecutionWithinFirm ShortCode	MiFID II short code, Execution within firm, identifier of the trader or algorithm responsible for the execution making.	Numerical ID	4	From -2^31+1 to 2^31-1	Mandatory	82
ClientIdentificationS hortCode	MiFID II short code, Client identification code.	Numerical ID	4	From -2^31 to 2^31-1	Conditional	77
Client Order ID	An identifier of a message assigned by the Client when submitting an order to the Exchange.	Numerical ID	8	From -2^63+1 to 2^63-1	Mandatory	76
Order ID	Numerical order identifier assigned by the matching engine, unique per instrument and EMM.	Numerical ID	8	From 0 to 2^64-1	Conditional	95

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Field	Short Description	Format	Len	Values	Presence	Page
Original Client Order ID	Client order ID of the original order.	Numerical ID	8	From -2^63 to 2^63-1	Conditional	98
Symbol Index	Exchange identification code of the instrument.	Numerical ID	4	From 0 to 2^32-2	Mandatory	101
EMM	Defines the Exchange Market Mechanism applied on each platform.	Enumerated	1	(See field description)	Mandatory	80
Order Side	Indicates the side of the order.	Enumerated	1	1 = Buy 2 = Sell 3 = Cross [i]	Mandatory	97
Order Type	Type of Order.	Enumerated	1	(See field description)	Mandatory	97

5.4.8 Mass Cancel (13)

Client ▶OEG

Message Usage:

The **MassCancel** (13) message is used to request the cancellation of the entire remaining quantity of **all active orders** matching the specified criteria(s), note that only the originating Firm is authorized to cancel its own orders.

An order cancellation only applies to the remaining quantity of an order in the book. If the order to be cancelled was partially filled, the cancellation has no effect on the previous trades (or any previously executed quantity).

Either the *Instrument Group Code* field or the *Symbol Index* field must be populated to determine the scope of the mass cancel; otherwise the Mass Cancel will be rejected. (Note that if both are populated, *Instrument Group Code* is ignored, and the *Symbol Index* will be used as the reference.)

Optional additional criteria can be specified: *EMM*, *Order Side*, *Logical Access ID*, and *OE Partition ID* (*Maturity*, *Contract ID, and Option Type* are not applicable for LuxSE). Those filters are used to restrict the scope of the Mass Cancel request. (Please note that *OE Partition ID* is not taken into account if *Logical Access ID* is not populated).

Field	Short Description	Format	Len	Values	Presence	Page
Client Message Sequence Number	The Client Message Sequence Number is mandatory for all inbound messages, but the consistency of the sequence is not checked by the Exchange.	Sequence	4	From 0 to 2^32-2	Mandatory	76
Firm ID	Identifier of the member firm that sends the message.	Alphanumeric al ID	8	(See field description)	Mandatory	83

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Field	Short Description	Format	Len	Values	Presence	Page
Message Sending Time	Indicates the time of message transmission, the consistency of the time provided is not checked by the Exchange. (Time in number of nanoseconds since 01/01/1970 UTC)	Epoch Time in Nanoseconds	8	From 0 to 2^64-2	Mandatory	90
ExecutionWithinFirm ShortCode	MiFID II short code, Execution within firm, identifier of the trader or algorithm responsible for the execution making.	Numerical ID	4	From -2^31+1 to 2^31-1	Mandatory	82
ClientIdentificationS hortCode	MiFID II short code, Client identification code.	Numerical ID	4	From -2^31+1 to 2^31-1	Conditional	77
Client Order ID	An identifier of a message assigned by the Client when submitting an order to the Exchange.	Numerical ID	8	From -2^63+1 to 2^63-1	Mandatory	76
Symbol Index	Exchange identification code of the instrument.	Numerical ID	4	From 0 to 2^32-1	Conditional	101
EMM	Defines the Exchange Market Mechanism applied on each platform.	Enumerated	1	(See field description)	Optional	80
Instrument Group Code	Instrument Trading Group / Class Identifier.	Alphanumeric al ID	2	(See field description)	Conditional	84
Order Side	Indicates the side of the order.	Enumerated	1	1 = Buy 2 = Sell	Optional	97
Logical Access ID	Identifier of the Logical Access.	Numerical ID	4	From 0 to 2^32-1	Optional	89
OE Partition ID	Identifies uniquely an OE Optiq partition by which the engine is reached.	Numerical ID	2	From 0 to 2^16-1	Optional	92
Contract ID	***[N/A]*** *Identifier of a derivatives contract (Symbol Index).*	*Alphanumeric al ID*	*4*	*From 0 to 2^32-1*	*Conditional*	*78*
Maturity	***[N/A]*** *Scope of active orders to be cancelled according the selected maturity, expressed in YYYYMMDD format.*	*Date*	*8*	*(See field description)*	*Optional*	*90*
Account Type	Indicates the account type for which the order is entered. For example, an order can be entered for a client account, a house account or a liquidity provider account.	Enumerated	1	(See field description)	Optional	72
Option Type	***[N/A]*** *Type of the option.*	*Enumerated*	*1*	*1 = Call* *2 = Put*	*Optional*	*94*

5.4.9 Mass Cancel Ack (14)

Client ◀OEG

Message Usage:

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The **MassCancelAck** (14) message is sent twice by the matching engine to confirm that the **MassCancel** request has been taken into account. The first **MassCancelAck** (14) message has *Total Affected Orders* set to -1, and repeats all the fields as they were submitted in the **MassCancel** (13) request.

The client will receive a **Kill** (05) message per successfully cancelled order (if any). Please note that **Kill** (05) messages are sent to the OE Session that owns the cancelled order.

When the mass cancel request is completely processed the client will receive a last **MassCancelAck** (14) message to notify them of the *Total Affected Orders*. The number provided by *Total Affected Orders* field could be different than the number of killed order notifications received by the issuer of the Mass Cancel request if some killed orders belonged to other OE Sessions. (Please refer to the Kinematics for further details)

Field	Short Description	Format	Len	Values	Presence	Page
Message Sequence Number	Indicates the Message Sequence Number per OE Session. (for messages sent by the Exchange)	Sequence	4	From 0 to 2^32-2	Mandatory	90
Firm ID	Identifier of the member firm that sends the message.	Alphanumeric al ID	8	(See field description)	Mandatory	83
Message Sending Time	Indicates the time of message transmission, the consistency of the time provided is not checked by the Exchange. (Time in number of nanoseconds since 01/01/1970 UTC)	Epoch Time in Nanoseconds	8	From 0 to 2^64-1	Conditional	90
OEG IN From Member	Order Entry Gateway IN time from member (in ns), measured when inbound message enters the gateway (Time in number of nanoseconds since 01/01/1970 UTC).	Epoch Time in Nanoseconds	8	From 0 to 2^64-1	Conditional	93
OEG OUT To ME	Gateway OUT time to ME (in ns), measured when inbound message leaves the gateway (Time in number of nanoseconds since 01/01/1970 UTC).	Epoch Time in Nanoseconds	8	From 0 to 2^64-1	Conditional	93
Book IN Time	Matching Engine IN time (in ns), time at which the corresponding inbound message entered the Matching Engine. (Time in number of nanoseconds since 01/01/1970 UTC)	Epoch Time in Nanoseconds	8	From 0 to 2^64-2	Mandatory	74
Book OUT Time	Matching Engine OUT time (in ns), when message leaves the Matching Engine (Time in number of nanoseconds since 01/01/1970 UTC).	Epoch Time in Nanoseconds	8	From 0 to 2^64-2	Mandatory	74
OEG IN From ME	Gateway IN time from ME (in ns), measured when outbound message enters the gateway (Time in number of nanoseconds since 01/01/1970 UTC).	Epoch Time in Nanoseconds	8	From 0 to 2^64-2	Mandatory	92

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Field	Short Description	Format	Len	Values	Presence	Page
OEG OUT To Member	Order Entry Gateway OUT time to member (in ns), measured when outbound message leaves the gateway (Time in number of nanoseconds since 01/01/1970 UTC).	Epoch Time in Nanoseconds	8	From 0 to 2^64-2	Mandatory	93
Client Order ID	An identifier of a message assigned by the Client when submitting an order to the Exchange.	Numerical ID	8	From -2^63+1 to 2^63-1	Mandatory	76
Total Affected Orders	Number of orders affected following a global request. It is set to -1 to indicate that the request is processed.	Numerical ID	4	From -2^31+1 to 2^31-1	Mandatory	103
Symbol Index	Exchange identification code of the instrument.	Numerical ID	4	From 0 to 2^32-1	Conditional	101
EMM	Defines the Exchange Market Mechanism applied on each platform.	Enumerated	1	(See field description)	Conditional	80
Instrument Group Code	Instrument Trading Group / Class Identifier.	Alphanumerical ID	2	(See field description)	Conditional	84
Order Side	Indicates the side of the order.	Enumerated	1	1 = Buy 2 = Sell	Conditional	97
Logical Access ID	Identifier of the Logical Access.	Numerical ID	4	From 0 to 2^32-1	Conditional	89
OE Partition ID	Identifies uniquely an OE Optiq partition by which the engine is reached.	Numerical ID	2	From 0 to 2^16-1	Conditional	92
Contract ID	***[N/A]*** *Identifier of a derivatives contract (Symbol Index).*	*Alphanumerical ID*	*4*	*From 0 to 2^32-1*	*Conditional*	*78*
Maturity	***[N/A]*** *Scope of active orders to be cancelled according the selected maturity, expressed in YYYYMMDD format.*	*Date*	*8*	*(See field description)*	*Conditional*	*90*
Account Type	Indicates the account type for which the order is entered. For example, an order can be entered for a client account, a house account or a liquidity provider account.	Enumerated	1	(See field description)	Conditional	72
Option Type	***[N/A]*** *Type of the option.*	*Enumerated*	*1*	*1 = Call* *2 = Put*	*Conditional*	*94*

5.4.10 Open Order Request (15)

Client ▶OEG

Message Usage:

The **OpenOrderRequest** (15) message is used by the clients to request the status of the target order (*Order ID* or *Original Client Order ID*):

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- If there is a corresponding live order in the Order Book, the system will acknowledge the request with an **Ack** (03) message (*Ack Type* = 17) ;
- If there is no corresponding order in the Order Book, the system will reject the request with a **Reject** (07) message (*Error Code* = 2101 'Unknown Order').

Field	Short Description	Format	Len	Values	Presence	Page
Client Message Sequence Number	The Client Message Sequence Number is mandatory for all inbound messages, but the consistency of the sequence is not checked by the Exchange.	Sequence	4	From 0 to 2^32-2	Mandatory	76
Firm ID	Identifier of the member firm that sends the message.	Alphanumerical ID	8	(See field description)	Mandatory	83
Message Sending Time	Indicates the time of message transmission, the consistency of the time provided is not checked by the Exchange. (Time in number of nanoseconds since 01/01/1970 UTC)	Epoch Time in Nanoseconds	8	From 0 to 2^64-2	Mandatory	90
ExecutionWithinFirm ShortCode	MiFID II short code, Execution within firm, identifier of the trader or algorithm responsible for the execution making.	Numerical ID	4	From -2^31+1 to 2^31-1	Mandatory	82
ClientIdentificationShortCode	MiFID II short code, Client identification code.	Numerical ID	4	From -2^31 to 2^31-1	Conditional	77
Client Order ID	An identifier of a message assigned by the Client when submitting an order to the Exchange.	Numerical ID	8	From -2^63+1 to 2^63-1	Mandatory	76
Order ID	Numerical order identifier assigned by the matching engine, unique per instrument and EMM.	Numerical ID	8	From 0 to 2^64-1	Conditional	95
Original Client Order ID	Client order ID of the original order.	Numerical ID	8	From -2^63 to 2^63-1	Conditional	98
Symbol Index	Exchange identification code of the instrument.	Numerical ID	4	From 0 to 2^32-2	Mandatory	101
EMM	Defines the Exchange Market Mechanism applied on each platform.	Enumerated	1	(See field description)	Mandatory	80

5.4.11 Ownership Request Ack (17) [Future Use]

Client ◀OEG

Message Usage:

The **OwnershipRequestAck** (17) message is sent twice by the matching engine to confirm that the **OwnershipRequest** (18) has been taken into account. The first **OwnershipRequestAck** (17) message has *Total Affected Orders* set to -1, and repeats all the fields as they were submitted in the **OwnershipRequest** (18).

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Subsequently the client will receive an **Ack** (03) message per order affected by the command.

When the Ownership request is totally processed the client will receive a last **OwnershipRequestAck** (17) message to notify the client of the *Total Affected Orders*.

Field	Short Description	Format	Len	Values	Presence	Page
Message Sequence Number	Indicates the Message Sequence Number per OE Session. (for messages sent by the Exchange)	Sequence	4	From 0 to 2^32-2	Mandatory	90
Firm ID	Identifier of the member firm that sends the message.	Alphanumerical ID	8	(See field description)	Mandatory	83
Client Order ID	An identifier of a message assigned by the Client when submitting an order to the Exchange.	Numerical ID	8	From -2^63+1 to 2^63-1	Mandatory	76
Order ID	Numerical order identifier assigned by the matching engine, unique per instrument and EMM.	Numerical ID	8	From 0 to 2^64-1	Conditional	95
Symbol Index	Exchange identification code of the instrument.	Numerical ID	4	From 0 to 2^32-2	Mandatory	101
Logical Access ID	Identifier of the Logical Access.	Numerical ID	4	From 0 to 2^32-1	Conditional	89
OE Partition ID	Identifies uniquely an OE Optiq partition by which the engine is reached.	Numerical ID	2	From 0 to 2^16-1	Conditional	92
Total Affected Orders	Number of orders affected following a global request. It is set to -1 to indicate that the request is processed.	Numerical ID	4	From -2^31+1 to 2^31-1	Mandatory	103

5.4.12 Ownership Request (18) [Future Use]

Client ▶OEG
Message Usage:

The **OwnershipRequest** (18) message is used by the clients to change the ownership of an active order from one OE Session to another OE Session belonging to the same Firm. Ownership migration is used to define the OE Session that will receive all outbound messages associated to the targeted order.

Please note that modifying an order (**CancelReplace** (06)) by a different OE session also leads to an ownership migration.

The scope of the ownership can be a single order by specifying the *Order ID* and *Symbol Index* of the targeted order. It could also be all orders of the specified *Symbol Index* belonging to the targeted Logical Access (*Logical Access ID*).

The **OwnershipRequest** (18) is acknowledged by the **OwnershipRequestAck** (17), and by **Ack** (03) message(s) which provides the affected order(s).

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Field	Short Description	Format	Len	Values	Presence	Page
Client Message Sequence Number	The Client Message Sequence Number is mandatory for all inbound messages, but the consistency of the sequence is not checked by the Exchange.	Sequence	4	From 0 to 2^32-2	Mandatory	76
Firm ID	Identifier of the member firm that sends the message.	Alphanumerical ID	8	(See field description)	Mandatory	83
Message Sending Time	Indicates the time of message transmission, the consistency of the time provided is not checked by the Exchange. (Time in number of nanoseconds since 01/01/1970 UTC)	Epoch Time in Nanoseconds	8	From 0 to 2^64-2	Mandatory	90
ExecutionWithinFirmShortCode	MiFID II short code, Execution within firm, identifier of the trader or algorithm responsible for the execution making.	Numerical ID	4	From -2^31+1 to 2^31-1	Mandatory	82
ClientIdentificationShortCode	MiFID II short code, Client identification code.	Numerical ID	4	From -2^31 to 2^31-1	Conditional	77
Client Order ID	An identifier of a message assigned by the Client when submitting an order to the Exchange.	Numerical ID	8	From -2^63+1 to 2^63-1	Mandatory	76
Order ID	Numerical order identifier assigned by the matching engine, unique per instrument and EMM.	Numerical ID	8	From 0 to 2^64-1	Conditional	95
Original Client Order ID	Client order ID of the original order.	Numerical ID	8	From -2^63 to 2^63-1	Conditional	98
Symbol Index	Exchange identification code of the instrument.	Numerical ID	4	From 0 to 2^32-2	Mandatory	101
EMM	Defines the Exchange Market Mechanism applied on each platform.	Enumerated	1	(See field description)	Mandatory	80
Logical Access ID	Identifier of the Logical Access.	Numerical ID	4	From 0 to 2^32-1	Conditional	89
OE Partition ID	Identifies uniquely an OE Optiq partition by which the engine is reached.	Numerical ID	2	From 0 to 2^16-1	Optional	92

5.4.13 Trade Bust Notification (19)

Client ◀OEG

Message Usage:

This message is sent to both counterparts of a trade if Market Operations busts a trade.

Please note that *Last Traded Price* and *Last Traded Quantity* refer to Price and Quantity of the cancelled trade.

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Field	Short Description	Format	Len	Values	Presence	Page
Message Sequence Number	Indicates the Message Sequence Number per OE Session. (for messages sent by the Exchange)	Sequence	4	From 0 to 2^32-2	Mandatory	90
Firm ID	Identifier of the member firm that sends the message.	Alphanumeric al ID	8	(See field description)	Mandatory	83
Book IN Time	Matching Engine IN time (in ns), time at which the corresponding inbound message entered the Matching Engine. (Time in number of nanoseconds since 01/01/1970 UTC)	Epoch Time in Nanoseconds	8	From 0 to 2^64-2	Mandatory	74
Book OUT Time	Matching Engine OUT time (in ns), when message leaves the Matching Engine (Time in number of nanoseconds since 01/01/1970 UTC).	Epoch Time in Nanoseconds	8	From 0 to 2^64-1	Conditional	74
OEG IN From ME	Gateway IN time from ME (in ns), measured when outbound message enters the gateway (Time in number of nanoseconds since 01/01/1970 UTC).	Epoch Time in Nanoseconds	8	From 0 to 2^64-1	Conditional	92
OEG OUT To Member	Order Entry Gateway OUT time to member (in ns), measured when outbound message leaves the gateway (Time in number of nanoseconds since 01/01/1970 UTC).	Epoch Time in Nanoseconds	8	From 0 to 2^64-1	Conditional	93
Symbol Index	Exchange identification code of the instrument.	Numerical ID	4	From 0 to 2^32-2	Mandatory	101
EMM	Defines the Exchange Market Mechanism applied on each platform.	Enumerated	1	(See field description)	Mandatory	80
Execution ID	The Execution ID is unique per instrument and per day. It is the unique identifier of a trade per instrument. This field is provided in case of fill, partial fill or trade cancellation.	Numerical ID	4	From 0 to 2^32-2	Mandatory	81
Last Traded Price	The Last Traded Price indicates the price of last fill on an instrument (to be calculated with the Price/Index Decimals).	Price	8	From -2^63+1 to 2^63-1	Mandatory	87
Last Traded Quantity	The Last Traded Quantity indicates the quantity of last fill on an instrument (to be calculated with the Quantity Decimals).	Quantity	8	From 0 to 2^64-2	Mandatory	87

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5.4.14 Collar Breach Confirmation (20)

Client ▶OEG
Message Usage:

The **CollarBreachConfirmation** (20) message is used by a client who wants to confirm the submission of the order previously rejected for dynamic collar breach.

If an order sent causes a matching price that breaches the dynamic thresholds the order gets automatically rejected and the client who has sent the order receives a **Reject** (07) message with an *Order ID* for the rejected order.

For instruments with appropriate collar logic, in case an order submission rejected due to collar breach, clients have the possibility to confirm the submission of this order by submitting a **CollarBreachConfirmation** (20) within 30 seconds after the rejection. The confirmation will lead to the collar recalculation, and then the order is checked against the updated collars and is either accepted or rejected again due to collar breach.

Please note that there is a maximum number of confirmations allowed possible per order. It is set per Trading Group (Class). Please refer to the Trading Manual for further information.

To confirm the rejected order the client must send a **CollarBreachConfirmation** (20) message and specify the *Order ID* of the concerned order (this *Order ID* was previously provided in the corresponding **Reject** (07) message).

Note that an order can be rejected for a breach of a collar even if it has partially matched; in this case the confirmation is applied to the remaining unmatched quantity of the order.

Field	Short Description	Format	Len	Values	Presence	Page
Client Message Sequence Number	The Client Message Sequence Number is mandatory for all inbound messages, but the consistency of the sequence is not checked by the Exchange.	Sequence	4	From 0 to 2^32-2	Mandatory	76
Firm ID	Identifier of the member firm that sends the message.	Alphanumeric al ID	8	(See field description)	Mandatory	83
Message Sending Time	Indicates the time of message transmission, the consistency of the time provided is not checked by the Exchange. (Time in number of nanoseconds since 01/01/1970 UTC)	Epoch Time in Nanoseconds	8	From 0 to 2^64-2	Mandatory	90
ExecutionWithinFirm ShortCode	MiFID II short code, Execution within firm, identifier of the trader or algorithm responsible for the execution making.	Numerical ID	4	From -2^31+1 to 2^31-1	Mandatory	82
ClientIdentificationS hortCode	MiFID II short code, Client identification code.	Numerical ID	4	From -2^31 to 2^31-1	Conditional	77
Client Order ID	An identifier of a message assigned by the Client when submitting an order to the Exchange.	Numerical ID	8	From -2^63+1 to 2^63-1	Mandatory	76
Symbol Index	Exchange identification code of the instrument.	Numerical ID	4	From 0 to 2^32-2	Mandatory	101

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Field	Short Description	Format	Len	Values	Presence	Page
EMM	Defines the Exchange Market Mechanism applied on each platform.	Enumerated	1	(See field description)	Mandatory	80
Order ID	Numerical order identifier assigned by the matching engine, unique per instrument and EMM.	Numerical ID	8	From 0 to 2^64-1	Conditional	95
Original Client Order ID	Client order ID of the original order.	Numerical ID	8	From -2^63 to 2^63-1	Conditional	98

5.4.15 Price Input (28)

Client ▶OEG
Message Usage:

The **PriceInput** (28) message is used by the clients to inject prices into the matching engine, disseminate price in Market Data and update the reference price of an instrument.

The type of price is specified in the *Input Price Type* field:

- 1 – Valuation Price: for this type the *Price* must not be provided. If the message is accepted by the matching engine a public **PriceUpdate** (1003) message will be disseminated to the market for one lot size at the reference price with *Market Data Price Type* equals to '23' Valuation Price. .
- 2 – Alternative Indicative Price: for this type the *Price* must be provided. If the message is accepted by the matching engine a **PriceUpdate** (1003) message will be disseminated to the market participants at the price provided by the client and it will accordingly update the instrument's reference price. The Dynamic Collars are updated around the price specified in the **PriceInput** (28) message and a public **MarketUpdate** (1001) message is sent to the market to disseminate the new collars.

For specific use and authorizations per Instrument Group (Class) please refer to the Trading Manual.

Field	Short Description	Format	Len	Values	Presence	Page
Client Message Sequence Number	The Client Message Sequence Number is mandatory for all inbound messages, but the consistency of the sequence is not checked by the Exchange.	Sequence	4	From 0 to 2^32-2	Mandatory	76
Firm ID	Identifier of the member firm that sends the message.	Alphanumeric al ID	8	(See field description)	Mandatory	83
Message Sending Time	Indicates the time of message transmission, the consistency of the time provided is not checked by the Exchange. (Time in number of nanoseconds since 01/01/1970 UTC)	Epoch Time in Nanoseconds	8	From 0 to 2^64-2	Mandatory	90
ExecutionWithinFirm ShortCode	MiFID II short code, Execution within firm, identifier of the trader or algorithm responsible for the execution making.	Numerical ID	4	From -2^31+1 to 2^31-1	Mandatory	82

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Field	Short Description	Format	Len	Values	Presence	Page
ClientIdentificationShortCode	MiFID II short code, Client identification code.	Numerical ID	4	From -2^31 to 2^31-1	Conditional	77
Client Order ID	An identifier of a message assigned by the Client when submitting an order to the Exchange.	Numerical ID	8	From -2^63+1 to 2^63-1	Mandatory	76
Symbol Index	Exchange identification code of the instrument.	Numerical ID	4	From 0 to 2^32-2	Mandatory	101
EMM	Defines the Exchange Market Mechanism applied on each platform.	Enumerated	1	(See field description)	Mandatory	80
Input Price Type	Type of input price.	Enumerated	1	1 = Valuation Price 2 = Alternative Indicative Price (AIP)	Mandatory	84
Price	Price per unit of quantity (to be calculated with the Price/Index Level Decimals).	Price	8	From -2^63 to 2^63-1	Conditional	98

5.4.16 User Notification (39)

Client ◀OEG

Message Usage:

In compliance with supplementing Directive 2014/65/EU of the European Parliament and of the Council with regard to regulatory technical standards specifying organisational requirements of trading venues, as well as for the services provided for such purposes for the investment firms engaged in algorithmic trading, Exchange Market operations, or authorized representatives of the investment firms, may suspend a member's or trader's access to the trading system or trigger the use of kill functionality in order to prevent disorderly trading conditions.

In such cases, the **UserNotification** (39) message is used to notify clients if they have been suspended/ killed or if their suspension/kill status has been lifted, and the scope (or granularity) on which this action has been applied.

The field *User Status* in this message indicates the nature of action and the case of Kill functionality the scope taken on the access and/or orders. In case of suspension the scope is provided either in the field *Symbol Index* or *Family ID*.

The text in the field *User Status* associated to each value provides for the following possible actions and granularities.

Actions:

Action	Description
Suspended	access to the trading system has been suspended
Suspension Cleared	access to the trading system has been restored after a Suspension
Killed	access to the trading system has been suspended and all unexecuted orders submitted have been cancelled
Kill Cleared	access to the trading system has been restored after a Kill functionality was initiated. Orders cancelled upon initiation of Kill functionality will NOT be restored

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Scope (for the Kill):

Firm ID is always provided but it represents the scope of the kill only in case the action has been taken only when specified by *User Status* as Firm.

Scope	Description	Identifier Field Provided
Trader-Algo	a trader or an algorithm will be in scope, applied based on the value specified in the field *ExecutionWithinFirmShortCode.* In this case the field *ExecutionWithinFirmShortCode* in the message will be populated with the stipulated value	ExecutionWithinFirmShortCode
Firm	member, including all of the physical connections and orders associated to the Firm ID will be in scope	*Firm ID*
DEA	the sub-set of orders / messages flagged as being submitted via a Direct Electronic access (DEA) provided by members to their own clients either for Sponsored Access or Direct Market Access (DMA). In case of Kill command being done for Sponsored access, the Status will identify "DEA" and the field *ClientIdentificationShortCode* is not populated In case the Kill command is done for the DMA, the command is applied based on the value specified in the field *ClientIdentificationShortCode*. In this case the field *ClientIdentificationShortCode* in the message will be populated with the stipulated value	ClientIdentificationShortCode

Field	Short Description	Format	Len	Values	Presence	Page
Message Sequence Number	Indicates the Message Sequence Number per OE Session. (for messages sent by the Exchange)	Sequence	4	From 0 to 2^32-2	Mandatory	90
Firm ID	Identifier of the member firm that sends the message.	Alphanumerical ID	8	(See field description)	Mandatory	83
ExecutionWithinFirmShortCode	MiFID II short code, Execution within firm, identifier of the trader or algorithm responsible for the execution making.	Numerical ID	4	From -2^31 to 2^31-1	Conditional	82
ClientIdentificationShortCode	MiFID II short code, Client identification code.	Numerical ID	4	From -2^31 to 2^31-1	Conditional	77
Family ID	Identifier of the family.	Alphanumerical ID	8	(See field description)	Conditional	83
Symbol Index	Exchange identification code of the instrument.	Numerical ID	4	From 0 to 2^32-1	Conditional	101
User Status	Status of the user.	Enumerated	1	(See field description)	Mandatory	106

5.4.17 Instrument Synchronization List (50)

Client ◀OEG

Message Usage:

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The **InstrumentSynchronizationList** (50) message is sent in order to associate each instrument with a *ResynchronizationID.* This ID is used only in case of failover of the matching engine.

Please refer to message **SynchronizationTime** (51) for further details.

Field	Short Description	Format	Len	Values	Presence	Page
Message Sequence Number	Indicates the Message Sequence Number per OE Session. (for messages sent by the Exchange)	Sequence	4	From 0 to 2^32-2	Mandatory	90
OEG OUT To Member	Order Entry Gateway OUT time to member (in ns), measured when outbound message leaves the gateway (Time in number of nanoseconds since 01/01/1970 UTC).	Epoch Time in Nanoseconds	8	From 0 to 2^64-2	Optional	93
Resynchronization ID	Each instrument is assigned to a Resynchronization ID, which is use in case of failover.	Numerical ID	2	From 0 to 2^16-2	Mandatory	100
Symbol Index	Exchange identification code of the instrument.	Numerical ID	4	From 0 to 2^32-2	Mandatory	101
EMM	Defines the Exchange Market Mechanism applied on each platform.	Enumerated	1	(See field description)	Mandatory	80

5.4.18 Synchronization Time (51)

Client ◀OEG
Message Usage:

The **SynchronizationTime** (51) message is sent after a disruptive incident affecting the trading chain to help the clients assess whether the messages received immediately before the disruptive incident are valid and stored state or if they must be discarded.

This message provides a timestamp (*Last Book In Time*) of the last known valid and stored message, and is sent by the system for the associated resynchronization ID (*Resynchronization ID*).

Upon the reception of the message, clients must check the list of all instruments associated to the field *Resynchronization ID* and analyze all messages received before the **Synchronization Time** (51) message, related to these instruments. Messages having *Book In Time* or *Trade Time* higher than the associated *Last Book In Time* must be discarded.

For example, upon the reception of a **Synchronization Time** (51) message, if a client previously received a **Fill** (04) message with the *Trade Time* higher than the *Last Book In Time*, then this **Fill** (04) message must be ignored and the order fill must be reversed in client system; the trade is considered as if it has never happened (i.e. the quantity has not been traded, and the order may still be present in the order book for further execution).

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Similarly, if a client previously received a **Kill** (05) message with a *Book In Time* higher than the *Last Book In Time,* then the Kill notification must be ignored (meaning that the order may still present in the order book for further execution).

All the messages received after the **SynchronizationTime** (51) messages must be processed normally.

Field	Short Description	Format	Len	Values	Presence	Page
Message Sequence Number	Indicates the Message Sequence Number per OE Session. (for messages sent by the Exchange)	Sequence	4	From 0 to 2^32-2	Mandatory	90
OEG OUT To Member	Order Entry Gateway OUT time to member (in ns), measured when outbound message leaves the gateway (Time in number of nanoseconds since 01/01/1970 UTC).	Epoch Time in Nanoseconds	8	From 0 to 2^64-2	Optional	93
Resynchronization ID	Each instrument is assigned to a Resynchronization ID, that is use in case of failover.	Numerical ID	2	From 0 to 2^16-2	Mandatory	100
Last Book IN Time	Last Matching Engine IN time (in ns) processed on the associated Resynchronization ID.	Epoch Time in Nanoseconds	8	From 0 to 2^64-2	Mandatory	86

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6. FIELD DESCRIPTION

A

Account Number

Field Name	Account Number
Description	Account Number. Client account number identifying the investor's account. This field is part of the clearing aggregate.
Used For	LuxSE
Format	Alphanumerical ID
Length	12
Possible Values	(See field description)
Used In	New Order (01) Cancel Replace (06)

Account Type

Field Name	Account Type
Description	Indicates the account type for which the order is entered. For example, an order can be entered for a client account, a house account or a liquidity provider account.
Used For	LuxSE
Format	Enumerated
Length	1
Possible Values	1 = Client 2 = House *4 = RO [C]* 6 = Liquidity Provider 7 = Related Party [C] *8 = Structured Product Market Maker [C]*
Conditions	It is mandatory for every NewOrder (01) message. In CancelReplace (06) message, if provided the value is ignored.
Used In	New Order (01) Cancel Replace (06) Mass Cancel (13) Mass Cancel Ack (14)

Account Type Cross

Field Name	Account Type Cross
Description	**[N/A for LuxSE]** Indicates the account type for which the sell side of a cross order is entered. Only for Cross orders.
Used For	LuxSE
Format	Enumerated
Length	1
Possible Values	*1 = Client* *2 = House*

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	4 = RO [C] *6 = Liquidity Provider* *7 = Related Party [C]* *8 = Structured Product Market Maker [C]*
Conditions	Not applicable for LuxSE
Used In	New Order (01)

Ack Phase

Field Name	Ack Phase
Description	Indicates the trading phase during which the Matching Engine has processed the event that has triggered this Ack (03) message.
Used For	LuxSE
Format	Enumerated
Length	1
Possible Values	1 = Continuous Trading Phase 2 = Call Phase 3 = Halt Phase [C] 4 = Closed Phase 5 = Trading At Last Phase 6 = Reserved 7 = Suspended
Used In	Ack (03)

Ack Qualifiers

Field Name	Ack Qualifiers
Description	Field used to provide additional information on the corresponding order. Values specified, in the list of possible values, indicate the bit positions that should be used to set zero (0) or one (1) values. A single field contains multiple values provided in different positions. - Dark Indicator: Indicates whether the corresponding order was entered as a dark order or not. (0: LIT ; 1: Dark). For Iceberg Order it indicates whether its undisclosed part is eligible to the Dark pool of liquidity or not. (For Future Use, Pending Regulatory Approval) - Queue Indicator: indicates whether the corresponding inbound message was queued because of throttling or not. (0: No ; 1: Yes)
Used For	LuxSE
Format	Bitmap
Length	1
Possible Values	*0 = Dark Indicator (For Future Use, Pending Regulatory Approval)* 1 = Queue Indicator
Used In	Ack (03)

Ack Type

Field Name	Ack Type
Description	Indicates the type of the Ack message
Used For	LuxSE
Format	Enumerated

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Length	1
Possible Values	0 = New Order Ack 1 = Replace Ack 2 = Order Creation By Market Operations 3 = Stop Triggered Ack [C] 4 = Collar Confirmation Ack [C] 5 = Refilled Iceberg Ack [C] 6 = MTL Second Ack [C] *7 = Knock-In By Issuer (KIBI) Ack [C]* *8 = Knock-Out By Issuer (KOBI) Ack [C]* *9 = Payment After Knock-Out (PAKO) Ack [C]* 10 = Price Input Ack [C] *11 = RFQ Ack [C]* *12 = Bid Only Ack [C]* *13 = Offer Only Ack [C]* 14 = Iceberg Transformed to Limit due to Minimum size [C] 15 = Ownership Request Ack [C] 16 = VFU/VFC Triggered Ack [C] 17 = Open Order Request Ack [C]
Used In	Ack (03)

B

Book IN Time

Field Name	Book IN Time
Description	Matching Engine IN time (in ns), time at which the corresponding inbound message entered the Matching Engine. (Time in number of nanoseconds since 01/01/1970 UTC)
Used For	LuxSE
Format	Epoch Time in Nanoseconds
Length	8
Possible Values	From 0 to 2^64-1
Conditions	In the Ack (03) message it corresponds to the time at which the event generating the Ack (03) entered the matching engine. In the Kill (05) message it corresponds to the time at which the corresponding order has been killed. In the Reject (07) it is provided only in case of a functional rejection, not in case of a technical rejection. In the Trade Bust Notification (19) it corresponds to the trade cancellation time.
Used In	Ack (03) Kill (05) Reject (07) Mass Cancel Ack (14) Trade Bust Notification (19)

Book OUT Time

Field Name	Book OUT Time
Description	Matching Engine OUT time (in ns), when message leaves the Matching Engine (Time in number of nanoseconds since 01/01/1970 UTC).
Used For	LuxSE

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Format	Epoch Time in Nanoseconds
Length	8
Possible Values	From 0 to 2^64-1
Used In	Ack (03) Fill (04) Kill (05) Reject (07) Mass Cancel Ack (14) Trade Bust Notification (19)

Breached Collar Price

Field Name	Breached Collar Price
Description	Breached collar price in case of collar rejection.
Used For	LuxSE
Format	Price
Length	8
Possible Values	From -2^63 to 2^63-1
Used In	Reject (07)

C

Clearing Firm ID

Field Name	Clearing Firm ID
Description	Clearing firm ID. Identifier of the give-up firm when a give-up is executed (a give-up is a trade executed by a firm for the client of another firm, the latter being referred to as the give-up firm).
Used For	LuxSE
Format	Alphanumerical ID
Length	8
Possible Values	(See field description)
Used In	New Order (01) Cancel Replace (06)

Clearing Instruction

Field Name	Clearing Instruction
Description	Clearing Instruction. Indicates the pre-posting and give-up action to be taken by the clearing system when a trade has occurred. ■ Process normally ■ Manual mode (pre-posting and/or pre-giveup) ■ Automatic posting mode (trade posting to the position account number specified) ■ Automatic give-up mode (trade give-up to the give-up destination number specified) [C]
Used For	LuxSE
Format	Enumerated

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Length	2
Possible Values	0 = Process normally [C] 8 = Manual mode 9 = Automatic posting mode 10 = Automatic give-up mode [C]
Used In	New Order (01) Cancel Replace (06)

Client ID

Field Name	Client ID
Description	Field used to identify the client (investor).
Used For	LuxSE
Format	Alphanumerical ID
Length	8
Possible Values	(See field description)
Used In	New Order (01) Cancel Replace (06)

Client Message Sequence Number

Field Name	Client Message Sequence Number
Description	The Client Message Sequence Number is mandatory for all inbound messages, but the consistency of the sequence is not checked by the Exchange.
Used For	LuxSE
Format	Sequence
Length	4
Possible Values	From 0 to 2^32-1
Used In	New Order (01) Cancel Replace (06) Cancel Request (12) Mass Cancel (13) Open Order Request (15) Ownership Request (18) Collar Breach Confirmation (20) Price Input (28)

Client Order ID

Field Name	Client Order ID
Description	An identifier of a message assigned by the Client when submitting an order to the Exchange. Clients must provide a Client Order ID in every inbound application message, otherwise the message will be immediately rejected by the OEG. Clients may provide any value that respects the Client Order ID format, which is an 8-byte signed integer, and the ranges as defined according to their access. The Exchange recommends setting an unique ID per order, Firm and Symbol Index. For order entry, the Client Order ID value is not checked by the Exchange, it is simply returned in the corresponding outbound message to allow clients to reconcile the response message with their original inbound request.

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	For modification and cancellation using the Original Client Order ID as unique identifier, the value is checked by the Exchange for possible duplicates, i.e. different orders submitted with the same Client Order ID. In case of duplication, the inbound request is rejected with the according error code.
Used For	LuxSE
Format	Numerical ID
Length	8
Possible Values	From -2^63 to 2^63-1
Conditions	In inbound application messages, this field is always mandatory. In outbound application messages, this field is provided for solicited messages and not provided (null value) for unsolicited messages. For the Fill (04) message, it is always set to the null value. For Reject (7) message: - If message is sent due to breach of collars, as in that case there is an Ack (3) message before, the Client Order ID is set to null in the Reject (7); - In all other cases the Client Order ID is populated in the Reject (7);
Used In	New Order (01) Ack (03) Fill (04) Kill (05) Cancel Replace (06) Reject (07) Cancel Request (12) Mass Cancel (13) Mass Cancel Ack (14) Open Order Request (15) Ownership Request Ack (17) Ownership Request (18) Collar Breach Confirmation (20) Price Input (28)

ClientIdentificationShortCode

Field Name	ClientIdentificationShortCode
Description	MiFID II short code, Client identification code. ESMA description of the field: Code used to identify the client of the member or participant of the trading venue. In case of DEA, the code of the DEA user should be provided. Where the client is a legal entity, the LEI code of the client shall be used. Where the client is not a legal entity, the {NATIONAL_ID} shall be used. In the case of aggregated orders, the flag AGGR shall be used. In case of pending allocations, the flag PNAL shall be used. This field shall be left blank only if the member or participant of the trading venue has no client.
Used For	LuxSE
Format	Numerical ID
Length	4
Possible Values	From -2^31 to 2^31-1
Conditions	This field is required for DEA User in every inbound message, or when Account Type = Client or RO. Provided in the User Notification (39) message, if User Status concerns a DEA to identify it. To indicate value of AGGR “1” shall be used. To indicate value of PNAL “2” shall be used.
Used In	New Order (01)

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	Cancel Replace (06) Cancel Request (12) Mass Cancel (13) Open Order Request (15) Ownership Request (18) Collar Breach Confirmation (20) Price Input (28) User Notification (39)

Collar Rejection Type

Field Name	Collar Rejection Type
Description	Hit collar type (high or low) in case of order rejection due to collar breach.
Used For	LuxSE
Format	Enumerated
Length	1
Possible Values	1 = Low dynamic collar 2 = High dynamic collar
Used In	Reject (07)

Contract ID

Field Name	Contract ID
Description	Identifier of a derivatives contract (Symbol Index).
Used For	[N/A of LuxSE]
Format	Alphanumerical ID
Length	4
Possible Values	From 0 to 2^32-1
Used In	Mass Cancel (13) Mass Cancel Ack (14)

Counterpart Firm ID

Field Name	Counterpart Firm ID
Description	ID of the Counterpart Firm in specific cases. The counterpart identifier is provided in the Fill (04) message in case the notified trade is the result of : ■ the Internal Matching Service (IMS), ■ the Internal Clearing Service (ICS) (For Future Use), ■ a transaction performed on a non-clearable instrument.
Used For	LuxSE
Format	Alphanumerical ID
Length	8
Possible Values	(See field description)
Conditions	Provided in the Fill (04) message in case the trade is the result of one of the cases listed above. Else not provided.
Used In	Fill (04)

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D

Dark Execution Instruction

Field Name	Dark Execution Instruction
Description	**[N/A]** Field used as instruction for dark order handling (For Future Use, Pending Regulatory Approval). Values specified, in the list of possible values, indicate the bit positions that should be used to set zero (0) or one (1) values. A single field contains multiple values provided in different positions. - Dark Indicator: indicates whether the client requests its order to benefit from a Large In Scale Pre-Transparency waiver to match the order in the Dark. (0: No ; 1: Yes) - Deferred Trade Indicator: indicates whether the client requests a deferred publication for a Hidden Order. (0: No ; 1: Yes) - Display Order Interaction: indicates whether the client requests its hidden order to match also with LIT orders. (0: No ; 1: Yes) - Sweep Order Indicator: indicates whether the client requests a sweep to his order between both LIT and the hidden pool of liquidity (Dark). (0: No ; 1: Yes) - Minimum Quantity Type: indicates whether the Minimum Quantity for a dark order is MES or MAQ. (0: MAQ ; 1: MES)
Used For	LuxSE
Format	Bitmap
Length	1
Possible Values	*0 = Dark Indicator* *1 = Deferred Trade Indicator* *2 = Displayed Order Interaction* *3 = Sweep Order Indicator* *4 = Minimum Quantity Type*
Conditions	Not applicable for LuxSE
Used In	New Order (01) Cancel Replace (06)

Disclosed Quantity

Field Name	Disclosed Quantity
Description	Maximum number of quantity units to be shown to market participants (Iceberg Order). (To be calculated with Quantity Decimals)
Used For	LuxSE
Format	Quantity
Length	8
Possible Values	From 1 to 2^64-1
Conditions	The Disclosed Quantity is mandatory for Iceberg orders. Disclosed quantity should be multiple of the instrument's lot size; otherwise the order will be rejected.
Used In	New Order (01) Cancel Replace (06)

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E

EMM

Field Name	EMM
Description	Defines the Exchange Market Mechanism applied on each platform.
Used For	LuxSE
Format	Enumerated
Length	1
Possible Values	1 = Cash and Derivative Central Order Book (COB) *2 = NAV Trading Facility [C]* *4 = Derivative Wholesales [D]* 5 = Cash On Exchange Off book [C] 6 = Euronext off-exchange trade reports *7 = Derivative On Exchange Off book [D]* *8 = ETF MTF - NAV Central Order Book [C]* 99 = Not Applicable (For indices and iNAV) [C]
Conditions	In the Reject (07) message, it is populated only if provided as a valid value in the corresponding Inbound request AND the corresponding Inbound request was technically correctly formatted; otherwise it is provided at the Null value.
Used In	New Order (01) Ack (03) Fill (04) Kill (05) Cancel Replace (06) Reject (07) Cancel Request (12) Mass Cancel (13) Mass Cancel Ack (14) Open Order Request (15) Ownership Request (18) Trade Bust Notification (19) Collar Breach Confirmation (20) Price Input (28) Instrument Synchronization List (50)

Error Code

Field Name	Error Code
Description	Error code in case of rejection. Provides the return error code when a request is rejected for a functional or a technical reason.
Used For	LuxSE
Format	Numerical ID
Length	2
Possible Values	From 0 to 2^16-1
Used In	Reject (07) Technical Reject (108)

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Exchange ID

Field Name	Exchange ID
Description	Identifies a physical Optiq partition.
Used For	LuxSE
Format	Text
Length	8
Possible Values	LuxSE
Used In	Logon Ack (101) Logon Reject (102)

Execution ID

Field Name	Execution ID
Description	The Execution ID is unique per instrument and per day. It is the unique identifier of a trade per instrument. This field is provided in case of fill, partial fill or trade cancellation. For example, let x be the reference identifier of a given trade, x is reported in the two Fill (04) messages generated for the both sides of the trade. x will also be used as reference for this trade in the Drop Copy feed. And if this trade is cancelled, x is again reported in the Trade Bust Notification (19) messages sent for the two sides of the trade.
Used For	LuxSE
Format	Numerical ID
Length	4
Possible Values	From 0 to 2^32-1
Used In	Fill (04) Trade Bust Notification (19)

Execution Instruction

Field Name	Execution Instruction
Description	Field used as instruction for order handling. Values specified, in the list of possible values, indicate the bit positions that should be used to set zero (0) or one (1) values. A single field contains multiple values provided in different positions. - STP resting order: indicates whether the STP rule is "cancel resting order" or not. (0: STP Resting Order deactivated ; 1: Cancel Resting Order) - STP incoming order: indicates whether the STP rule is "cancel incoming order" or not. (0: STP Incoming Order deactivated ; 1: Cancel Incoming Order) - Disclosed Quantity Randomization: indicates whether the client requests or not a randomization for the disclosed quantity of his iceberg order. (0: No ; 1: Yes) - Disabled Cancel On Disconnect Indicator: indicates whether the client sets his order to be persisted (is not in scope of the Cancel On Disconnect mechanism) or not. (0: Cancel on Disconnect enabled ; 1: Cancel on Disconnect disabled) *- RFQ answer: indicates whether the message is, or not, a quote sent as an answer to a Quote Answer (10) message (For Future Use). (0: No; 1: Yes)* *- RFQ Confirmation: indicates whether the message is, or not, an order sent as a confirmation of a Request For Quote (For Future Use). (0: No; 1: Yes).*
Used For	LuxSE
Format	Bitmap
Length	1

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Possible Values	0 = STP resting order [C] 1 = STP incoming order [C] 2 = Disclosed Quantity Randomization [C] 3 = Disabled Cancel On Disconnect Indicator *4 = RFQ Answer [C]* *5 = RFQ Confirmation [C]*
Conditions	Values 4 = RFQ Answer [C] and 5 = RFQ Confirmation [C] are not applicable for LuxSE
Used In	New Order (01) Cancel Replace (06)

Execution Phase

Field Name	Execution Phase
Description	Indicates the trading phase during which the trade has occurred.
Used For	LuxSE
Format	Enumerated
Length	1
Possible Values	1 = Continuous Trading Phase 2 = Uncrossing Phase 3 = Trading At Last Phase *4 = Continuous Uncrossing Phase* *5 = IPO*
Used In	Fill (04)

ExecutionWithinFirmShortCode

Field Name	ExecutionWithinFirmShortCode
Description	MiFID II short code, Execution within firm, identifier of the trader or algorithm responsible for the execution making. ESMA description of the field: Code used to identify the person (trader) or algorithm within the member or participant of the trading venue who is responsible for the execution of the transaction resulting from the order. Where a natural person is responsible for the execution of the transaction, the person shall be identified by {NATIONAL_ID} Where an algorithm is responsible for the execution of the transaction, this field shall be populated in accordance with Article 9 of [RTS 22 on transaction reporting under Article 26 of Regulation (EU) No 600/2014] Where more than one person or a combination of persons and algorithms are involved in the execution of the transaction, the member or participant or client of the trading venue shall determine the trader or algorithm primarily responsible as specified in Article 9(4) of [RTS on trading obligations under Article 26 of Regulation (EU) No 600/2014] and populate this field with the identity of that trader or algorithm.
Used For	LuxSE
Format	Numerical ID
Length	4
Possible Values	From -2^31 to 2^31-1
Conditions	This field is mandatory for every application inbound messages. Provided in the User Notification (39) message, if User Status concerns a Trader or an Algo to identify it. Guideline for algorithm associated values: When an order message is flagged with the ExecutionAlgoIndicator (position 2) in the MiFID Indicators field set to value “0: No algorithm” involved then all positive values (from 0 to 2^31-1) would represent a human trader.

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	If the indicator is set to "1: Algorithm involved" clients are requested to populate this field with the ranges of values identified below. No technical checks would be performed to validate correctness of the ranges used - In–house algorithms with positive range of values between 0 to 2^31-1 - ISV algorithms : negative range of values between -2^31+1 to -1
Used In	New Order (01) Cancel Replace (06) Cancel Request (12) Mass Cancel (13) Open Order Request (15) Ownership Request (18) Collar Breach Confirmation (20) Price Input (28) User Notification (39)

F

Family ID

Field Name	Family ID
Description	Identifier of the family.
Used For	LuxSE
Format	Alphanumerical ID
Length	8
Possible Values	(See field description)
Conditions	If provided in the User Notification (39) message, it specifies the scope of the action specified in User Status.
Used In	User Notification (39)

Firm ID

Field Name	Firm ID
Description	Identifier of the member firm that sends the message. It is provided by the Exchange upon the registration of the Firm by the Membership department.
Used For	LuxSE
Format	Alphanumerical ID
Length	8
Possible Values	(See field description)
Conditions	In inbound messages it is the ID of the firm that sent the message. In outbound messages it is the ID of the firm to which the message is sent.
Used In	New Order (01) Ack (03) Fill (04) Kill (05) Cancel Replace (06) Reject (07) Cancel Request (12) Mass Cancel (13)

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	Mass Cancel Ack (14) Open Order Request (15) Ownership Request Ack (17) Ownership Request (18) Trade Bust Notification (19) Collar Breach Confirmation (20) Price Input (28) User Notification (39)

Free Text

Field Name	Free Text
Description	Free Text is manually entered by the trader issuing the order. This field is part of the clearing aggregate.
Used For	LuxSE
Format	Text
Length	18
Possible Values	(See field description)
Used In	New Order (01) Cancel Replace (06)

I

Input Price Type

Field Name	Input Price Type
Description	Type of input price.
Used For	LuxSE
Format	Enumerated
Length	1
Possible Values	1 = Valuation Price 2 = Alternative Indicative Price (AIP)
Used In	Price Input (28)

Instrument Group Code

Field Name	Instrument Group Code
Description	Instrument Trading Group / Class Identifier.
Used For	LuxSE
Format	Alphanumerical ID
Length	2
Possible Values	(See field description)
Used In	Mass Cancel (13) Mass Cancel Ack (14)

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InvestmentDecisionWFirmShortCode

Field Name	InvestmentDecisionWFirmShortCode
Description	MiFID II short code, Investment decision within firm, identifier of the trader or algorithm responsible for the investment decision. ESMA description of the field: Code used to identify the person or the algorithm within the member or participant of the trading venue who is responsible for the investment decision. Where a natural person(s) within the member or participant of the trading venue is responsible for the investment decision the person who is responsible or has primary responsibility for the investment decision shall be identified with the {NATIONAL_ID} Where an algorithm is responsible for the investment decision the field shall be populated in accordance with Article 8 of [RTS 22 on transaction reporting under Article 26 of Regulation (EU) No 600/2014.]
Used For	LuxSE
Format	Numerical ID
Length	4
Possible Values	From -2^31 to 2^31-1
Conditions	This field is mandatory when Account Type = Liquidity Provider, Related Party, House or Structured Product Market Maker; and only when DEA Indicator = 0. Also mandatory in in case in the field MIFID Indicators position 1 (InvestmentAlgoIndicator) is set to "1: Algorithm involved"; and only when DEA Indicator = 0. Guideline for algorithm associated values: When an order message is flagged with the associated InvestmentAlgoIndicator (position 1) in the MiFID Indicators field set to value "0: No algorithm" involved then all positive values (from 0 to 2^31-1) would represent a human trader. If the indicator is set to "1: Algorithm involved" clients are requested to populate this field with the ranges of values identified below. No technical checks would be performed to validate correctness of the ranges used. - In –house algorithms with positive range of values between 0 to 2^31-1 - ISV algorithms : negative range of values between -2^31+1 to -1
Used In	New Order (01)

K

Kill Reason

Field Name	Kill Reason
Description	Order Kill Reason
Used For	LuxSE
Format	Enumerated
Length	2
Possible Values	1 = Order Cancelled by Client 2 = Order Expired 3 = Order Cancelled by Market Operations 4 = Order Eliminated due to Corporate Event 5 = Done for day 6 = Cancelled MTL in an empty Order Book [C] 7 = Cancelled by STP 8 = Remaining quantity killed (IOC) *9 = Beginning of PAKO Period [C]* 11 = Order Cancelled due to Cancel On Disconnect Mechanism

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	12 = RFQ expired [C] *13 = RFQ partially or fully matched with other counterparts [C]* *14 = RFQ cancelled by the issuer [C]* *15 = RFQ Not matched due to issuer order's features [C]* *16 = Quote cancelled due to Knock-Out [C]* 17 = Order cancelled due to a Kill command
Conditions	Values 9; 12; 13; 14; 15 and 16 are not applicable for LuxSE
Used In	Kill (05)

L

Last Book IN Time

Field Name	Last Book IN Time
Description	Last Matching Engine IN time (in ns) processed on the associated Resynchronization ID.
Used For	LuxSE
Format	Epoch Time in Nanoseconds
Length	8
Possible Values	From 0 to 2^64-2
Used In	Synchronization Time (51)

Last Client Message Sequence Number

Field Name	Last Client Message Sequence Number
Description	Indicates the sequence number of the last message received by the Exchange from the Client on the OE Session.
Used For	LuxSE
Format	Sequence
Length	4
Possible Values	From 0 to 2^32-1
Used In	Logon Ack (101) Logon Reject (102)

Last Message Sequence Number

Field Name	Last Message Sequence Number
Description	Indicates the sequence number of the last message received by the Client from the Exchange on the OE Session.
Used For	LuxSE
Format	Sequence
Length	4
Possible Values	From 0 to 2^32-1
Used In	Logon (100) Logon Reject (102)

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Last Traded Price

Field Name	Last Traded Price
Description	The Last Traded Price indicates the price of last fill on an instrument (to be calculated with the Price/Index Decimals).
Used For	LuxSE
Format	Price
Length	8
Possible Values	From -2^63 to 2^63-1
Conditions	In the Trade Bust Notification (19) message the Last Traded Price refers to Price of the cancelled trade.
Used In	Fill (04) Trade Bust Notification (19)

Last Traded Quantity

Field Name	Last Traded Quantity
Description	The Last Traded Quantity indicates the quantity of last fill on an instrument (to be calculated with the Quantity Decimals).
Used For	LuxSE
Format	Quantity
Length	8
Possible Values	From 0 to 2^64-1
Conditions	In the Trade Bust Notification (19) message the Last Traded Quantity refers to Quantity of the cancelled trade.
Used In	Fill (04) Trade Bust Notification (19)

Leaves Quantity

Field Name	Leaves Quantity
Description	Indicates the remaining quantity of an order, i.e. the quantity open for further execution.
Used For	LuxSE
Format	Quantity
Length	8
Possible Values	From 0 to 2^64-1
Used In	Fill (04)

Leg Instrument ID

Field Name	Leg Instrument ID
Description	Numerical leg instrument identifier (SymbolIndex) valid for the life of the instrument.
Used For	[N/A of LuxSE]
Format	Numerical ID
Length	4
Possible Values	From 0 to 2^32-1
Used In	Fill (04)

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Leg Last Traded Price

Field Name	Leg Last Traded Price
Description	Leg Last Traded Price
Used For	[N/A of LuxSE]
Format	Price
Length	8
Possible Values	From -2^63 to 2^63-1
Used In	Fill (04)

Leg Last Traded Quantity

Field Name	Leg Last Traded Quantity
Description	Leg Last Traded Quantity
Used For	[N/A of LuxSE]
Format	Quantity
Length	8
Possible Values	From 0 to 2^64-1
Used In	Fill (04)

Leg Side

Field Name	Leg Side
Description	Indicates the side of the trade leg.
Used For	[N/A of LuxSE]
Format	Enumerated
Length	1
Possible Values	1 = Buy 2 = Sell
Used In	Fill (04)

Log Out Reason Code

Field Name	Log Out Reason Code
Description	Log Out Reason Code. Value 0 is from client, value 1 is from Exchange.
Used For	LuxSE
Format	Enumerated
Length	1
Possible Values	0 = Regular Logout By Client 1 = End Of Day 2 = Too many unknown messages 3 = Excessive Number of Messages 4 = Excessive Amount of Data in Bytes 5 = Excessive Number of Messages & Amount of Data in Bytes

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Used In	Logout (103)

Logical Access ID

Field Name	Logical Access ID
Description	Identifier of the Logical Access.
Used For	LuxSE
Format	Numerical ID
Length	4
Possible Values	From 0 to 2^32-1
Conditions	It is required in both Logon (100) and Logout (103) messages. It is required in the OwnershipRequest (18) message when the Order ID is not provided. In the Mass Cancel (13) message it can be used as filter to cancel orders belonging to this Logical Access.
Used In	Logon (100) Mass Cancel (13) Mass Cancel Ack (14) Ownership Request Ack (17) Ownership Request (18)

Logon Reject Code

Field Name	Logon Reject Code
Description	Provides the logon rejection reason.
Used For	LuxSE
Format	Enumerated
Length	1
Possible Values	1 = Unknown Connection Identifier 2 = System unavailable 3 = Invalid sequence number 4 = Client session already logged on 5 = Client session disabled 6 = Invalid Queueing Indicator 7 = Invalid Logon format
Used In	Logon Reject (102)

LP Role

Field Name	LP Role
Description	Liquidity Provider Role identifies the type of the Liquidity Provider when Account Type is equal to "Liquidity Provider".
Used For	LuxSE
Format	Enumerated
Length	1
Possible Values	1 = Liquidity Provider or Market Maker *3 = Retail Liquidity Provider [C]*
Conditions	Liquidity Provider Role is mandatory when Account Type is equal to "Liquidity Provider". Value “3” is not applicable for LuxSE

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	In CancelReplace (06) message, if provided the value is ignored.
Used In	New Order (01) Cancel Replace (06)

M

Maturity

Field Name	Maturity
Description	Scope of active orders to be cancelled according the selected maturity, expressed in YYYYMMDD format. For monthly DD must be set to 00. To identify weeklies and dailies DD must be set to the last trading day.
Used For	[N/A of LuxSE]
Format	Date
Length	8
Possible Values	(See field description)
Used In	Mass Cancel (13) Mass Cancel Ack (14)

Message Sending Time

Field Name	Message Sending Time
Description	Indicates the time of message transmission, the consistency of the time provided is not checked by the Exchange. (Time in number of nanoseconds since 01/01/1970 UTC)
Used For	LuxSE
Format	Epoch Time in Nanoseconds
Length	8
Possible Values	From 0 to 2^64-1
Used In	New Order (01) Ack (03) Kill (05) Cancel Replace (06) Reject (07) Cancel Request (12) Mass Cancel (13) Mass Cancel Ack (14) Open Order Request (15) Ownership Request (18) Collar Breach Confirmation (20) Price Input (28)

Message Sequence Number

Field Name	Message Sequence Number
Description	Indicates the Message Sequence Number per OE Session. (for messages sent by the Exchange)
Used For	LuxSE
Format	Sequence

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Length	4
Possible Values	From 0 to 2^32-1
Used In	Ack (03) Fill (04) Kill (05) Reject (07) Mass Cancel Ack (14) Ownership Request Ack (17) Trade Bust Notification (19) User Notification (39) Instrument Synchronization List (50) Synchronization Time (51)

MiFID Indicators

Field Name	MiFID Indicators
Description	Field used as instruction for order handling. Values specified, in the list of possible values, indicate the bit positions that should be used to set zero (0) or one (1) values. A single field contains multiple values provided in different positions. - DEA Indicator: indicates whether the order was submitted via a Direct Electronic Access (DEA) connection or not. It must be set to 1 for DEA access. (0: No ; 1: Yes) If set to 1, then field ClientIdentificationShortCode must be populated. - InvestmentAlgoIndicator: indicates whether the investment decision was submitted by a trading algorithm or not. (0: No algorithm involved ; 1: Algorithm involved) This value must be set to 1 for cases where Algorithm has made the Investment decision. If set to 1, then field InvestmentDecisionWFirmShortCode must be filled. - ExecutionAlgoIndicator: indicates whether the order execution was submitted by a trading algorithm or not. (0: No algorithm involved ; 1: Algorithm involved) - CommodityDerivativeIndicator: indicates for a commodity derivative or a warrant with a commodity underlying, if the trade reduces the risk. (0: Order not associated with reduction of risk for Commodity Derivatives or Warrants with Commodity underlyings ; 1: Risk Reduction flag for orders associated with Commodity Derivatives or Warrants with Commodity underlyings) - Deferral Indicator: Indicates whether the order is candidate for a deferred publication of the resulting trade(s) or not. (0: Not Candidate ; 1: Candidate)
Used For	LuxSE
Format	Bitmap
Length	1
Possible Values	0 = DEA Indicator 1 = InvestmentAlgoIndicator 2 = ExecutionAlgoIndicator 3 = CommodityDerivativeIndicator *4 = Deferral Indicator*
Used In	New Order (01) Cancel Replace (06)

Minimum Order Quantity

Field Name	Minimum Order Quantity
Description	Minimum quantity to be executed upon order entry (else the order is rejected), (To be calculated with Quantity Decimals).
Used For	LuxSE
Format	Quantity

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Length	8
Possible Values	From 0 to 2^64-1
Used In	New Order (01)

N

NonExecutingBrokerShortCode

Field Name	NonExecutingBrokerShortCode
Description	MiFID II short code, Non-executing broker, identifier of the non-executing broker. ESMA description of the field: In accordance with Article 2(d). This field shall be left blank when not relevant.
Used For	LuxSE
Format	Numerical ID
Length	4
Possible Values	From -2^31 to 2^31-1
Used In	New Order (01)

O

OE Partition ID

Field Name	OE Partition ID
Description	Identifies uniquely an OE Optiq partition by which the engine is reached.
Used For	LuxSE
Format	Numerical ID
Length	2
Possible Values	From 0 to 2^16-1
Conditions	In Logon (100) message it must be set according to the partition to which the messages are sent. In the Ownership Request (18) message it is optional, if populated it used to restrict the request of ownership to the orders belonging to the specified Logical Access ID and entered through this partition. In the Mass Cancel (13) message it is optional but cannot be populated if Logical Access ID is not populated ; if populated it used as filter to cancel orders entered through this partition (it can be combined with other criteria).
Used In	Logon (100) Mass Cancel (13) Mass Cancel Ack (14) Ownership Request Ack (17) Ownership Request (18)

OEG IN From ME

Field Name	OEG IN From ME
Description	Gateway IN time from ME (in ns), measured when outbound message enters the gateway (Time in number of nanoseconds since 01/01/1970 UTC).

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Used For	LuxSE
Format	Epoch Time in Nanoseconds
Length	8
Possible Values	From 0 to 2^64-1
Used In	Ack (03) Fill (04) Kill (05) Reject (07) Mass Cancel Ack (14) Trade Bust Notification (19)

OEG IN From Member

Field Name	OEG IN From Member
Description	Order Entry Gateway IN time from member (in ns), measured when inbound message enters the gateway (Time in number of nanoseconds since 01/01/1970 UTC).
Used For	LuxSE
Format	Epoch Time in Nanoseconds
Length	8
Possible Values	From 0 to 2^64-1
Used In	Ack (03) Kill (05) Reject (07) Mass Cancel Ack (14)

OEG OUT To ME

Field Name	OEG OUT To ME
Description	Gateway OUT time to ME (in ns), measured when inbound message leaves the gateway (Time in number of nanoseconds since 01/01/1970 UTC).
Used For	LuxSE
Format	Epoch Time in Nanoseconds
Length	8
Possible Values	From 0 to 2^64-1
Used In	Ack (03) Kill (05) Reject (07) Mass Cancel Ack (14)

OEG OUT To Member

Field Name	OEG OUT To Member
Description	Order Entry Gateway OUT time to member (in ns), measured when outbound message leaves the gateway (Time in number of nanoseconds since 01/01/1970 UTC).
Used For	LuxSE
Format	Epoch Time in Nanoseconds
Length	8

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Possible Values	From 0 to 2^64-1
Used In	Ack (03) Fill (04) Kill (05) Reject (07) Mass Cancel Ack (14) Trade Bust Notification (19) Instrument Synchronization List (50) Synchronization Time (51) Technical Reject (108)

Open Close

Field Name	Open Close
Description	Open Close Indicator, Posting action. This field is part of the clearing aggregate. The first bit will be used to indicate whether this field is being actively used or not (1 = Actively Used ; 0 = Field Not Used). For each Leg 0 means Open and 1 means Close. Leg 2 to Leg 9 are not applicable for cash instruments.
Used For	LuxSE
Format	Bitmap
Length	2
Possible Values	0 = Field Actively Used 1 = Leg 1 *2 = Leg 2 [D]* *3 = Leg 3 [D]* *4 = Leg 4 [D]* *5 = Leg 5 [D]* *6 = Leg 6 [D]* *7 = Leg 7 [D]* *8 = Leg 8 [D]* *9 = Leg 9 [D]*
Used In	New Order (01) Cancel Replace (06)

Option Type

Field Name	Option Type
Description	Type of the option.
Used For	[N/A of LuxSE]
Format	Enumerated
Length	1
Possible Values	1 = Call 2 = Put
Used In	Mass Cancel (13) Mass Cancel Ack (14)

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Order Expiration Date

Field Name	Order Expiration Date
Description	Field used as date of order expiration for GTD orders. - Format : MMDD - Minimum Value : 0101 (Jan 1st) - Maximum Value : 1231 (Dec 31st)
Used For	LuxSE
Format	Date
Length	2
Possible Values	From 0 to 2^16-1
Conditions	Order Expiration Date is mandatory for GTD orders.
Used In	New Order (01) Cancel Replace (06)

Order Expiration Time

Field Name	Order Expiration Time
Description	**[FUTURE USE]** Field used as time of order expiration for GTT orders. - Format : HHMMSS - Minimum Value : 0 (00:00:00) - Maximum Value : 235959 (23:59:59)
Used For	LuxSE
Format	Numerical ID
Length	4
Possible Values	From 0 to 2^32-1
Conditions	Order Expiration Time is mandatory for GTT orders.
Used In	New Order (01) Cancel Replace (06)

Order ID

Field Name	Order ID
Description	Numerical order identifier assigned by the matching engine, unique per instrument and EMM.
Used For	LuxSE
Format	Numerical ID
Length	8
Possible Values	From 0 to 2^64-1
Used In	Ack (03) Fill (04) Kill (05) Cancel Replace (06) Reject (07) Cancel Request (12) Open Order Request (15) Ownership Request Ack (17) Ownership Request (18) Collar Breach Confirmation (20)

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Order Price

Field Name	Order Price
Description	Instrument price per quantity unit (To be calculated with Price/Index Level Decimals). For the Market Data feed: -Set to Null Value for priceless orders. For the Order Entry -It is mandatory for priced orders (Limit, Stop-limit) and must be set to Null Value where the price is irrelevant (Market, Stop-market, Peg, MTL).
Used For	LuxSE
Format	Price
Length	8
Possible Values	From -2^63 to 2^63-1
Used In	New Order (01) Ack (03) Cancel Replace (06)

Order Priority

Field Name	Order Priority
Description	Rank giving the priority of the order. The order with the lowest value of Order Priority has the highest priority. Order Priority is unique per Symbol Index and EMM, therefore, it is also used as the unique order identifier in the market data feed. Order Priority should then allow clients to reconcile their orders between private order entry and market data feed. Also assigned for newly entered Stop orders. When Stop orders are triggered they will be assigned a new priority. Used in conjunction with Previous Priority, for market data only.
Used For	LuxSE
Format	Numerical ID
Length	8
Possible Values	From 0 to 2^64-1
Used In	Ack (03)

Order Quantity

Field Name	Order Quantity
Description	Total order quantity, per quantity unit.(To be calculated with Quantity Decimals)
Used For	LuxSE
Format	Quantity
Length	8
Possible Values	From 0 to 2^64-1
Used In	New Order (01) Ack (03) Cancel Replace (06)

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Order Side

Field Name	Order Side
Description	Indicates the side of the order. Please note that the value Cross is not applicable for LuxSE.
Used For	LuxSE
Format	Enumerated
Length	1
Possible Values	1 = Buy 2 = Sell 3 = Cross [i]
Conditions	The value Cross is not applicable for LuxSE For Cancel Replace (06) and Cancel Request (10) messages if the Order Side different than the Order Side of the targeted order, the request will be rejected with the reason "Unknown Order".
Used In	New Order (01) Ack (03) Fill (04) Cancel Replace (06) Cancel Request (12) Mass Cancel (13) Mass Cancel Ack (14)

Order Type

Field Name	Order Type
Description	Type of Order. Please note that the values Stop-market/Stop-market-on-Quote, Stop limit/Stop-limit-on-quote, Average Price, Iceberg and Mid-Point Peg are used only for the Order Entry, they will never be populated in the Market Data feed.
Used For	LuxSE
Format	Enumerated
Length	1
Possible Values	1 = Market 2 = Limit 3 = Stop-market or Stop-market-on-quote [C] 4 = Stop-limit or Stop-limit-on-quote [C] *5 = Primary Peg [C]* 6 = Market to limit *7 = Market Peg (For Future Use, Pending Regulatory Approval) [C]* *8 = Mid-Point Peg (For Future Use, Pending Regulatory Approval) [C]* *9 = Average Price (For Future Use) [C]* 10 = Iceberg [C]
Conditions	Values '7', '8' and '9' are for future use. For Cancel Replace (06) and Cancel Request (10) messages if the Order Type different than the Order Type of the targeted order, the request will be rejected with the reason "Unknown Order".
Used In	New Order (01) Cancel Replace (06) Cancel Request (12)

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Original Client Order ID

Field Name	Original Client Order ID
Description	Client order ID of the original order.
Used For	LuxSE
Format	Numerical ID
Length	8
Possible Values	From -2^63 to 2^63-1
Conditions	It is provided in the Ack (03) message only as response of a modification done on Original Client Order ID.
Used In	Ack (03) Kill (05) Cancel Replace (06) Cancel Request (12) Open Order Request (15) Ownership Request (18) Collar Breach Confirmation (20)

P

Package ID

Field Name	Package ID
Description	ID used to link several Large in Scale (LiS) Package trades together.
Used For	[N/A of LuxSE]
Format	Alphanumerical ID
Length	12
Possible Values	(See field description)
Used In	Fill (04)

Peg Offset

Field Name	Peg Offset
Description	Tick offset for a pegged order. (For Future Use) Used to indicate the signed tick added to the peg reference for a pegged order.
Used For	LuxSE
Format	Numerical ID
Length	1
Possible Values	From -128 to 127
Used In	New Order (01) Cancel Replace (06)

Price

Field Name	Price
Description	Price per unit of quantity (to be calculated with the Price/Index Level Decimals).

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Used For	LuxSE
Format	Price
Length	8
Possible Values	From -2^63 to 2^63-1
Used In	Price Input (28)

Q

Queueing Indicator

Field Name	Queueing Indicator
Description	Indicates whether the client requests its orders to be queued or rejected in case of throttling. (0: False - Reject ; 1: True - Queue).
Used For	LuxSE
Format	Boolean
Length	1
Possible Values	0 = False 1 = True
Used In	Logon (100)

QuoteReqID

Field Name	QuoteReqID
Description	**[N/A]** Numerical RFQ identifier assigned by the matching engine, unique per instrument and EMM. (For Future Use)
Used For	LuxSE
Format	Numerical ID
Length	8
Possible Values	From 0 to 2^64-1
Conditions	Not applicable for LuxSE
Used In	New Order (01)

R

Rejected Client Message Sequence Number

Field Name	Rejected Client Message Sequence Number
Description	Indicates the Client Message Sequence Number of the rejected message.
Used For	LuxSE
Format	Sequence
Length	4
Possible Values	From 0 to 2^32-2
Used In	Technical Reject (108)

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Rejected Message

Field Name	Rejected Message
Description	***[N/A]*** *Deprecated field*
Used For	LuxSE
Format	Numerical ID
Length	1
Possible Values	From 0 to 2^8-1
Used In	Reject (07) Technical Reject (108)

Rejected Message ID

Field Name	Rejected Message
Description	Provides the ID (Template ID) of the rejected message. E.g. 01 for NewOrder, 06 for CancelReplace...
Used For	Cash and Derivatives
Format	Numerical ID
Length	2
Possible Values	From 0 to 2^16-1
Used In	Reject (07) Technical Reject (108)

Resynchronization ID

Field Name	Resynchronization ID
Description	Each instrument is assigned to a Resynchronization ID, which is used in case of failover.
Used For	LuxSE
Format	Numerical ID
Length	2
Possible Values	From 0 to 2^16-2
Used In	Instrument Synchronization List (50) Synchronization Time (51)

S

Software Provider

Field Name	Software Provider
Description	Free text field entered by the client in the Logon (100) message, identifying the provider of the software used for exchange of messages for trading purposes.
Used For	LuxSE
Format	Text
Length	8
Possible Values	(See field description)

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Used In	Logon (100)

Stop Trigger Price

Field Name	Stop Trigger Price
Description	Stop Trigger Price is mandatory for stop orders.
Used For	LuxSE
Format	Price
Length	8
Possible Values	From -2^63 to 2^63-1
Used In	New Order (01) Cancel Replace (06)

STP ID

Field Name	STP ID
Description	For Future Use.
Used For	LuxSE
Format	Numerical ID
Length	2
Possible Values	From 0 to 2^16-1
Used In	New Order (01) Cancel Replace (06)

Symbol Index

Field Name	Symbol Index
Description	Exchange identification code of the instrument. This identifier is unique per triplet: MIC, ISIN and currency. The correspondence of the Symbol Index and with the instrument characteristics is provided in the standing data messages and associated files.
Used For	LuxSE
Format	Numerical ID
Length	4
Possible Values	From 0 to 2^32-1
Conditions	If provided in the User Notification (39) message, it specifies the scope of the action specified in User Status. In the Reject (07) message, it is populated only if provided as a valid value in the corresponding Inbound request AND the corresponding Inbound request was technically correctly formatted; otherwise it is provided at the Null value.
Used In	New Order (01) Ack (03) Fill (04) Kill (05) Cancel Replace (06) Reject (07) Cancel Request (12) Mass Cancel (13) Mass Cancel Ack (14)

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	Open Order Request (15) Ownership Request Ack (17) Ownership Request (18) Trade Bust Notification (19) Collar Breach Confirmation (20) Price Input (28) User Notification (39) Instrument Synchronization List (50)

T

Technical Origin

Field Name	Technical Origin
Description	Indicates the origin of the order; for example, manual entry, or an order coming from a Program Trading system. This field is part of the clearing aggregate.
Used For	LuxSE
Format	Enumerated
Length	1
Possible Values	1 = Index trading arbitrage 2 = Portfolio strategy 3 = Unwind order 4 = Other orders (default) 5 = Cross margining
Used In	New Order (01) Cancel Replace (06)

Time In Force

Field Name	Time In Force
Description	Specifies the maximum validity of an order. For Stop orders it provides the maximum validity when not triggered.
Used For	LuxSE
Format	Enumerated
Length	1
Possible Values	0 = Day 1 = Good Till Cancel 2 = Valid for Uncrossing [C] 3 = Immediate or Cancel 4 = Fill or Kill [C] *5 = Good till Time [C] (For Future Use)* 6 = Good till Date 7 = Valid for Closing Uncrossing [C] *8 = Valid for Session [D]*
Used In	New Order (01) Cancel Replace (06)

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Total Affected Orders

Field Name	Total Affected Orders
Description	Number of orders affected following a global request. It is set to -1 to indicate that the request is processed.
Used For	LuxSE
Format	Numerical ID
Length	4
Possible Values	From -2^31 to 2^31-1
Used In	Mass Cancel Ack (14) Ownership Request Ack (17)

Trade Qualifier

Field Name	Trade Qualifier
Description	Trade Qualifier. Values specified, in the list of possible values, indicate the bit positions that should be used to set zero (0) or one (1) values. A single field contains multiple values provided in different positions. - bit in position 0 - Uncrossing Trade: indicates whether the trade occurred during an Uncrossing, or not. (0: No ; 1: Yes) - bit in position 1 - First Trade Price: indicates whether the price of the trade is the first trade price of the day, or not. (0: No ; 1: Yes) Please note that there can be multiple Trades with the “First Trade Price” flag set to Yes. - bit in position 2 - Passive Order: indicates whether the corresponding order was passive, or not. (0: No ; 1: Yes) - bit in position 3 - Aggressive Order: indicates whether the corresponding order was aggressive, or not. (0: No ; 1: Yes) - bit in position 4 - Trade Creation by Market Operations: indicates whether the trade results from a creation by Market Operations, or not. (0: No ; 1: Yes) - For future use *- bit in position 5 - NAV Trade expressed in bps: indicates whether the trade results from a NAV trade expressed in basis point on the ETF MTF platform. (0: No ; 1: Yes)* *- bit in position 6 - NAV Trade expressed in price currency: indicates whether the trade is a NAV trade expressed in price currency. This trade is always an update from a previous NAV trade expressed in basis point on the ETF MTF platform. (0: No ; 1: Yes)* If all bits are set to 0, then it means that no Trade Qualifier applies. For the Market Data feed: - The values Passive Order and Aggressive Order always qualify the Buy order.
Used For	LuxSE
Format	Bitmap
Length	1
Possible Values	0 = Uncrossing Trade 1 = First Trade Price 2 = Passive Order 3 = Aggressive Order 4 = Trade Creation by Market Operations *5 = NAV Trade expressed in bps [C]* *6 = NAV Trade expressed in price currency [C]*
Conditions	Values 5 and 6 are not applicable for LuxSE
Used In	Fill (04)

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Trade Time

Field Name	Trade Time
Description	Time of the trade. Equals to the Matching Engine IN time (in ns), when the aggressor enters the matching engine.
Used For	LuxSE
Format	Epoch Time in Nanoseconds
Length	8
Possible Values	From 0 to 2^64-1
Used In	Fill (04)

Trade Type

Field Name	Trade Type
Description	Type of trade.
Used For	LuxSE
Format	Enumerated
Length	1
Possible Values	1 = Conventional Trade (Cash and Derivatives)
Used In	Fill (04)

Trading Capacity

Field Name	Trading Capacity
Description	Indicates whether the order submission results from trading as matched principal, on own account or as any other capacity.
Used For	LuxSE
Format	Enumerated
Length	1
Possible Values	1 = Dealing on own account (DEAL) 2 = Matched principal (MTCH) 3 = Any other capacity (AOTC)
Used In	New Order (01)

Trading Session Validity

Field Name	Trading Session Validity
Description	Trading Session Validity. Values specified, in the list of possible values, indicate the bit positions that should be used to set zero (0) or one (1) values. A single field contains multiple values provided in different positions.
Used For	[N/A of LuxSE]
Format	Bitmap
Length	1
Possible Values	1 = Session 1 2 = Session 2 3 = Session 3

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Used In	New Order (01) Cancel Replace (06)

Triggered Stop Time In Force

Field Name	Triggered Stop Time In Force
Description	Specifies the maximum validity of an triggered stop order. If both Time In Force and Triggered Stop Time In Force are Good till Date they will both refer to the same Order Expiration Date (or Order Expiration Time) provided in the order. If Order Expiration Date is modified it will be for both untriggered stop and triggered stop, or only for the triggered stop if the order was previously triggered.
Used For	LuxSE
Format	Enumerated
Length	1
Possible Values	0 = Day 1 = Good Till Cancel 6 = Good till Date
Conditions	It is mandatory for stop orders.
Used In	New Order (01) Cancel Replace (06)

U

Underlying Instrument ID

Field Name	Underlying Instrument ID
Description	The commodity key for the other component leg of an asset allocation or ISIN code for the underlying cash leg that is part of a Basis or Against Actuals trade.
Used For	[N/A of LuxSE]
Format	Numerical ID
Length	4
Possible Values	From 0 to 2^32-1
Used In	Fill (04)

Underlying Last Traded Price

Field Name	Underlying Last Traded Price
Description	For Basis and Against Actual trades only: underlying cash leg price.
Used For	[N/A of LuxSE]
Format	Price
Length	8
Possible Values	From -2^63 to 2^63-1
Used In	Fill (04)

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Undisclosed Iceberg Type

Field Name	Undisclosed Iceberg Type
Description	Order handling related to the undisclosed part of an Iceberg order eligible to a matching in the Dark pool of liquidity. (For Future Use, Pending Regulatory Approval)
Used For	LuxSE
Format	Enumerated
Length	1
Possible Values	1 = Limit 2 = Peg Mid-Point 3 = Peg Primary 4 = Peg Market
Used In	New Order (01) Cancel Replace (06)

Undisclosed Price

Field Name	Undisclosed Price
Description	Optional price for the hidden part of an Iceberg order. (For Future Use, Pending Regulatory Approval)
Used For	LuxSE
Format	Price
Length	8
Possible Values	From -2^63 to 2^63-1
Used In	New Order (01) Cancel Replace (06)

User Status

Field Name	User Status
Description	Status of the user.
Used For	LuxSE
Format	Enumerated
Length	1
Possible Values	1 = Trader-Algo Suspended 2 = Trader-Algo Suspension Cleared 3 = Trader-Algo Killed 4 = Trader-Algo Kill Cleared 5 = Firm Suspended 6 = Firm Suspension Cleared 7 = Firm Killed 8 = Firm Kill Cleared 9 = DEA Suspended 10 = DEA Suspension Cleared 11 = DEA Killed 12 = DEA Kill Cleared
Used In	User Notification (39)

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APPENDIX A: REVISION HISTORY

Version	Change Description
1.0.0	First version for Luxembourg Stock Exchange on Optiq

DOCUMENT HISTORY

REVISION NO.	DATE	AUTHOR	CHANGE DESCRIPTION
1.0.0	March 2018	IT Solutions	First version for Luxembourg Stock Exchange on Optiq

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