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PREFACE

PURPOSE

The purpose of this document is to describe the Optiq Market Data Gateway.

TARGET AUDIENCE

This document should be read by Euronext's clients developing a Market Data Feed Handler.

SCOPE

The scope of this document is listed below[1] (✓ In scope, ✘ Out of scope):

OPTIQ SEGMENT	SEGMENT VALUE	IN/OUT OF SCOPE	SBE VERSIONS*
Euronext Cash Market			
Equities EQ	1	✓	116 – 331
Funds FND	2	✓	116 – 331
Fixed Income FXI	3	✓	116 – 331
Warrants and Certificates SP	4	✓	116 – 331
Block BLK	14	✓	110 – 331
Irish Bonds and Funds IBF	16	✓	300 / 303 – 331
Forex FOREX	15	✓	303 – 331
Euronext Derivatives Market			
Commodity Derivatives CMO	8	✓	216 – 331
Index Derivatives IDD	11	✓	216 – 331
Equity Derivatives EQD	12	✓	216 – 331
Euronext Indices			
Indices Indices	9	✓	109 – 331
Euronext Approved Publication Arrangement (APA) Facility			

[1] How to read the 'SBE versions' information provided in the table:

- When two version numbers are provided with '-' between them, it means that any version between those two versions can be used to access the Optiq segment (SBE forward/backward compatibility).
- When two version numbers are provided with '/' between them, it means that members must use the last version to access the Optiq segment because the SBE compatibility is broken between them.
- When only one version is provided, it means that this version only can be used to access the Optiq segment.

Trade Reporting and Publication TRP	10	✓	5 – 331
Other Markets			
Luxembourg Stock Exchange BDL	5	✓	116 - 331

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WHAT'S NEW?

The following lists only the most recent modification made to this revision/version. For the Document History table, see the Appendix.

VERSION NO.	CHANGE DESCRIPTION
5.31.0	The following changes have been made to this version of the document: ■ In Market Update (1001) – update the Execution Summary subsection to detail that Dark trades are not included in the Execution Summary message ■ In Standing Data (1007) – DarkMinimumQuantity field in main section was deprecated ■ In Field Description: ♦ Field "Dark Minimum Quantity" was deprecated – not expected any longer nor applicable for the Dark functionality

ASSOCIATED DOCUMENTS

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

- Optiq OEG FIX 5.0 Messages - Interface Specification - Euronext Cash and Derivatives Markets
- Optiq OEG MDG - Kinematics Specification - Euronext Cash Markets
- Optiq OEG MDG - Kinematics Specification - Euronext Derivatives Markets
- Optiq OEG TCS Error List – Technical Specification - Euronext Cash and Derivatives Markets (.csv)
- Optiq MDG Messages - Interface Specification - Euronext Cash and Derivatives Markets
- Optiq Files - Interface Specification - Euronext Cash and Derivatives Markets
- Optiq Technical Note SBE
- Optiq OEG Connectivity Specifications - Euronext Markets

Clients are additionally advised to also refer to the Euronext Rules and Regulations documents for more details.

For the latest version of documentation please visit the IT Documentation page.

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EURONEXT OPTIQ MARKET DATA GATEWAY SOLUTION

INTRODUCTION

The Euronext Optiq Market Data Gateway (MDG) provides high-speed, real-time market data for Euronext markets.

The data feed has the following high-level features:

- **Multicast technology**
- **Ultra-low latency**
- **EU and UK MiFID II compliance**
- **Cash & Derivatives message harmonization**
- **Optimized feed for each type of connectivity**
- **High availability**
- **Reliable network solution**
- **High level of scalability**
- **Access to a wide range of European market data sets**

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

The APA/ARM sections of this document comply with the governance requirements under the UK DRSP regulatory framework.

EU AND UK MIFID II

Markets in Financial Instruments Directive 2 (MiFID II) is a European Commission set of new regulations to reduce systemic risk and guarantee more transparency for clients. The laws and regulations of EU MiFID II will be effective as of January 3, 2018. It has been amended and transposed into the laws of the United Kingdom pursuant to the European Union (Withdrawal) Act 2018 and the European Union (Withdrawal Agreement) Act 2020, is referred to as "UK MiFID II" and has been effective since January 1, 2021.

Euronext Optiq Market Data Gateway is EU and UK MiFID II compliant by offering:

- **Market Data channel disaggregation**
  - Each multicast channel published by MDG is disaggregated as follows: asset class, currency and country. Additionally, there are dedicated channels for pre-trade and post-trade.
- **Higher Transparency**
  - The Full Trade Information message (1004) delivered by Optiq MDG will carry MMT Trade flags and other fields as required by EU and UK MiFID II.

GLOSSARY

Euronext Approved Publication Arrangement (APA):

It is an EU and UK MiFID II Regulatory trade publication facility allowing clients to receive required trade reporting data through a Market Data Feed Handler for APA publication. Also applicable in the United Kingdom onshored regulations.

Euronext Synapse:

It is a Multilateral Trading Facility (MTF) that connects pools of liquidity and market participants within a new anonymous inter-dealer centralised market place. It links banks and their customers together for liquidity, execution and reporting services with the appropriate level of protection for fixed income markets. When using this facility clients are subscribed to Euronext Synapse Market Data.

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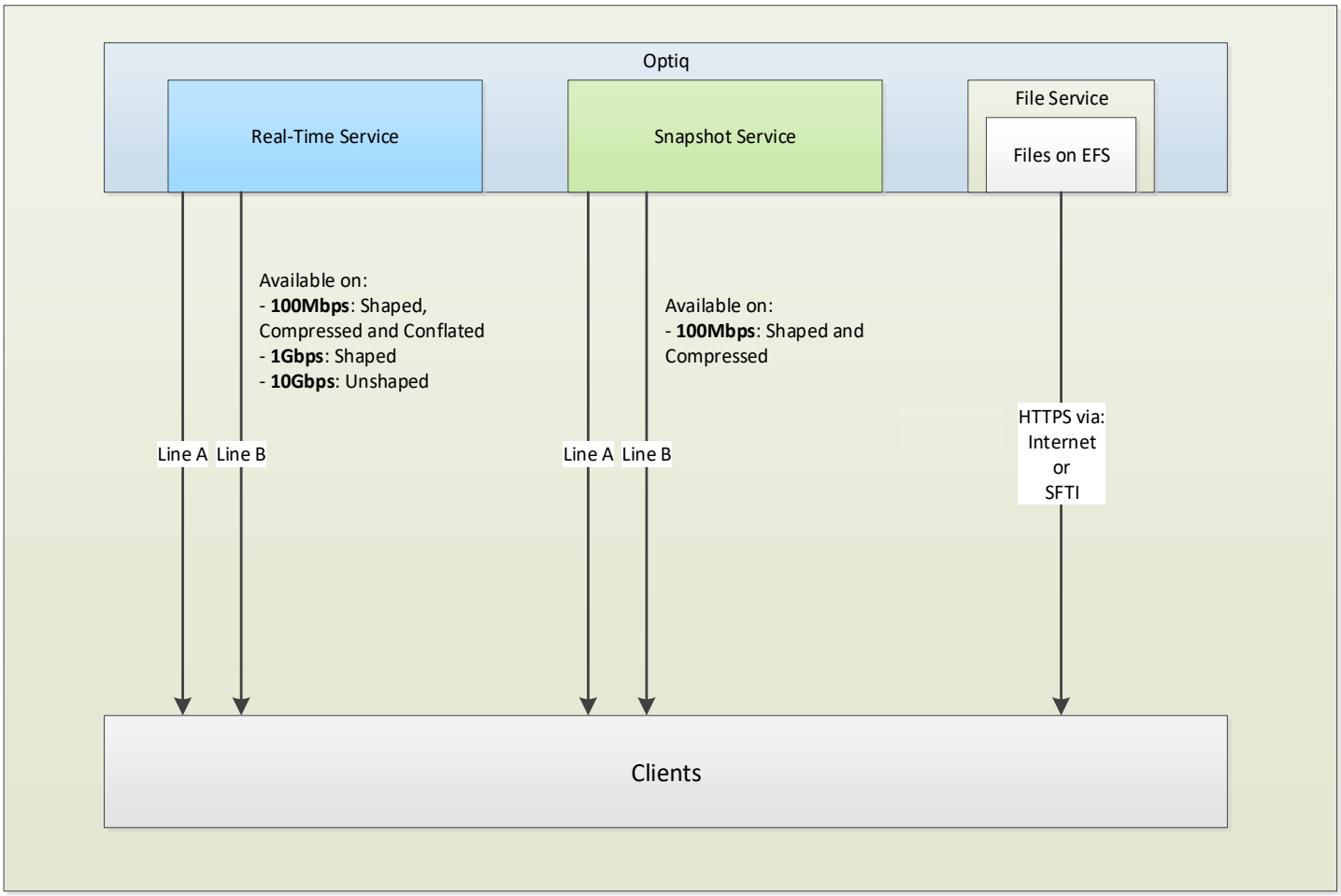
ACCESS TO MARKET DATA

The following diagram presents the Optiq MDG services:



Clients access Market Data as follows:

- **Real-Time service:** Clients connect to multicast UDP/IP channels to receive Market Data messages in real-time
- **Snapshot service:** Clients connect to multicast UDP/IP channels to receive unsolicited Snapshots sent periodically on dedicated multicast channels to recover from packet loss or for intraday starts.
- **File service:** Clients connect to a file server
  - Every morning to download XML files containing static and daily data (Standing Data, Timetables, Tick Tables, XML SBE template, Pattern IDs and Feed Configurations).
  - **A**pproved **P**ublication **A**rrangement (APA) MDG trade publication tool is not concerned by the File service.

Market Data are available in the following modes:

- **Unshaped:** All messages are sent as fast as possible (service only available on 10 Gbps lines)
- **Shaped:** Allow optimized emission of Market Data with low latency, optimized bandwidth use and
  - packet loss prevention (service available on the 100 Mbps and 1 Gbps lines)
- **Compressed:** Messages are compressed in order to reduce the use of bandwidth (available on 100 Mbps lines)

Other methods could be available in the future upon performance analysis study.

Two recovery mechanisms are available:

- **Line arbitration:** Identical packets are sent on two lines (line A and line B). Clients are strongly invited to use this first recovery mechanism in case of message loss
- **Snapshot service:** If messages are lost on both lines or if a client connects intra-day

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MESSAGING PROTOCOL AND PUBLISHING MODEL

Real-time and Snapshot Market Data are message-based over the UDP/IP protocol with SBE (Simple Binary Encoding). This binary encoding is optimized for low latency encoding and decoding while keeping bandwidth utilization reasonably small and is used across all asset classes.

The process of subscribing to a multicast group ID is also known as "joining" a multicast group. Upon session termination, the member's host system should issue an "unjoin" message. This will terminate delivery of data to that local host network. If a client application terminates without issuing an "unjoin" message, the network will eventually issue a "timeout" for the multicast group subscription that will automatically terminate delivery of the multicast packets to the local host network. The "join" and "unjoin" processes are standard functions. No specific instructions are provided here, as they are specific to the user's operating system and programming language.

Using the push-based publishing model, data will be published as soon as it is available.

FUTURE USE

In preparation for various functionalities expected to be implemented in the future on Optiq a number of fields and values 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 effective use of fields and/or values will not be technically supported until the announced date for implementation of these functionalities.

This behaviour applies to:

Fields flagged as 'For Future Use'

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

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MARKET DATA CHANNELS

TYPE OF MARKET DATA CHANNELS

Market Data Channels

Euronext offers real-time and snapshot Market Data through different channels that clients can subscribe to. Each channel is linked to a unique IP multicast group address and a unique port.

Channels are split according to the following criteria:

- **Asset Class: EU and UK** MiFID II requirement
- **Country of issue: EU and UK** MiFID II requirement
- **Currency: EU and UK** MiFID II requirement
- **Real-time or Snapshot:** Real-time and snapshot messages are sent through different channels
- **Types of data:**
  - Full Order Book Market Update pack (FBMU) provides Market by Limit (full price limit depth) and BBO using the Market Update message.
  - Full Order Book Order Update pack (FBOU) provides Market by Order (full order book depth) using the Order Update message and BBO with Market Update.
  - Best Bid and Offer pack (BBBO) will only provide the best limits when they are updated.
  - Reference Data and Full Trade Information pack (REFT) provides all instrument characteristics, scheduled phases, market administration messages and EU and UK MiFID II compliant trade messages. Index messages are included in this channel only for Luxembourg Stock Exchange (LuxSE).
  - Reference Data and Index Package pack (REFI) provides all instrument characteristics, scheduled phases, market administration messages and Index messages.
  - Reference Data and Trade & NAV Information and Instrument Suspension pack (IBFR) provides Non Traded Bonds and Funds characteristics, Trade, NAV and instrument State Information.
  - APA Trade Reporting and Referential pack (APRT) provides all instrument characteristics, scheduled phases, market administration messages and EU and UK MiFID II compliant trade messages. It also includes trade from Euronext Synapse.
  - APA Systematic Internalized Quotes and Referential pack (APSI) provides all instrument characteristics and quotes.

- **Shaping:** Channels are either unshaped, shaped to 1 Gbps or shaped to 100 Mbps.
- **Scalability:** For performance reasons, a feed can be split into several channels. It is also possible for an instrument to move from one channel to another, although intraday changes will not occur. Such changes would be communicated to clients with advance notice.

The unshaped channels (10 Gbits) are only available for the Full Order Book Order Update (Cash segments) and/or Full Order Book Market update (Derivatives segments) channels and for the following Asset Classes:

- Equities France
- Equities Netherlands
- Equities Italy
- ETF's
- Index Futures France
- Index Futures Netherlands
- Index Options France
- Index Options Netherlands

Note: On-Exchange Off-Book (OEOB) covers multiple types of activity, that are identified in the EMM field. References to OEOB below comprise the following EMMs:

- For the Cash markets: 5 = Cash On Exchange Off book
- For the Derivatives markets: 4 = Derivative Wholesales and 7 = Derivative On Exchange Off book

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The mentioned channels are available for COB and On-Exchange Off-Book (OEOB). These are described by Asset Classes and organized in the table below by EU and UK MiFID II disaggregation of Asset Class + Currency + Country (and in several cases, + sub-segment MIC):

ASSET CLASS | SEGMENT	MARKET MECHANISM	CURRENCY	COUNTRY [+MIC] SPLIT	MDG SET OF CHANNELS ID
Equities	COB & OEOB	All	Netherlands	6
			France	5
			Belgium	7
			Portugal	8
			Ireland	9
			Norway	10
			Italy [MTAA, MIVX, EXGM]	18
			Italy GEM [BGEM]	45
	Best of Book (BoB)	All	All	11
	Block	All	All	33
Funds	COB & OEOB	All	Netherlands, France, Belgium, Portugal, Norway, Ireland	1
			Italy [ETFP, ATFX]	39
	ETFs Access	All	All	32
Fixed Income	COB & OEOB	All	Netherlands, France, Belgium, Portugal, Norway, Ireland	2
			Norway Nordic ABM [XOAM]	12
Warrants & Certificates	COB & OEOB	All	Netherlands, France, Belgium, Portugal, Norway, Ireland	4
Block	Block	All	All	33
	COB	All	Italy TAH [MTAH]	19
Indices	N/A	All	Netherlands, France, Belgium, Portugal, Norway[2]	13
			Ireland	15
iNAVs	N/A	All	Netherlands, France, Belgium, Portugal	14
Commodity Derivatives	COB & OEOB	All	All	16
Equity Derivatives	COB & OEOB	All	Netherlands	21
			France	20
			Belgium, Portugal, Norway	22
			Italy	36
Index Derivatives	Options – COB & OEOB	All	Netherlands	24
			France	23
			Italy	37
	Options & Futures – COB & OEOB		Belgium, Portugal, Norway	25
	Futures – COB & OEOB		Netherlands	27
			France	26
			Italy	28
Irish Bonds and Funds	N/A	All	All	35

[2] Italian indices are not disseminated via MDG

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Trade Reporting and Publication	N/A	All	All	30
Luxembourg Stock Exchange	COB & OEOB	All	All	3
Fastmatch	Forex (BBO)	All	All	34

Example of Market Data Channels:

- Equities – France – All currency – Unshaped – Real-time – FBMU

Client Connectivity

The subscription to a set of channels depends on the type of client connectivity. For example, if a client has a 100 Mbps line, then he cannot subscribe to the unshaped channels which are only offered on 10 Gbps lines nor subscribe to the shaped BBO channels, which are only available on 1 Gbps lines. 1 Gbps clients cannot subscribe to the unshaped data, which is only available on 10 Gbps lines. Conversely, a client with a 10 Gbps line can subscribe to all available channels like the Full Order Book channels (either unshaped (10 Gbps) or shaped (1 Gbps)) as well as to the compressed and shaped channels (100 Mbps).

Market Data Messages per Channel

Optiq MDG will provide the Full Order Book (FOB) in two different ways based on instrument type:

- **Market by Order (FBOU - Full Book Order Update):** The **Order Update** (1002) message will be disseminated for each new order, modification or cancellation.
  Important Note: Full order book updates are only applicable on Optiq segments where the order book and its market data are provided by orders.
- **Market by Limit (FBMU – Full Book Market Update):** Price levels with aggregated volume and associated number of orders are published using the **Market Update** (1001) message.

Note: BBO is provided for both through **Market Update** (1001) message for each the best limits which is updated.

The following table provides an overview of all Optiq MDG messages. The aim is to provide a better understanding of the message types per channel table.

MESSAGE NAME	MESSAGE TYPE	DESCRIPTION
Start Of Day	1101	First message of the day sent by the Market Data Gateway
End Of Day	1102	Last message of the day sent by the Market Data Gateway
Health Status	1103	Heartbeat message sent at regular intervals throughout the day
Technical Notification	1106	Informs on the start or end retransmission
Timetable	1006	Scheduled Trading Mode and Phase Types for each instrument
Market Status Change	1005	Indicates the change in the state of an instrument (either scheduled or manually processed)
Standing Data	1007	Provides characteristics for all instruments on Cash
Contract Standing Data	1013	Provides characteristics for all contracts on Derivatives
Outright Standing Data	1014	Provides characteristics for all instruments on Derivatives
Strategy Standing Data	1012	Provides characteristics for all strategies on Derivatives
BF Instrument Reference	1201	Provides characteristics for all instrument on IBF segment
Market Update	1001	Provides information generated by market events, including limit updates and trades
Order Update	1002	Indicates new orders, modifications, cancellations or retransmissions
Long Order Update	1015	Indicates new orders, modifications, cancellations or retransmissions with more details
Price Update	1003	Provides all updated reference prices
LIS Package Structure	1016	Provides with the structure of an off book negotiated LIS Package

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MESSAGE NAME	MESSAGE TYPE	DESCRIPTION
Full Trade Information	1004	Contains trade information, including all EU and UK MiFID II regulatory fields
BF Trade	1202	Contains trade information on IBF segment
BF NAV	1203	Contains Net Asset Value information on IBF segment
Real Time Index	1008	Provides all Index-related statistics
BF Instrument Suspension	1204	Provides information on instrument status on IBF segment
Statistics	1009	Provides statistics on prices and volumes on an instrument
Index Summary	1011	Provides index level summaries in closing phases
Start Of Snapshot	2101	Identifies the beginning of a snapshot sequence
End Of Snapshot	2102	Identifies the end of a snapshot sequence
APA Standing Data	1027	Provides minimal instrument characteristics to be identified
APA Full Trade Information	1028	Contains trade information, including all EU and UK MiFID II regulatory fields
APA Quotes	1026	Provides systematic internaliser quotes

1.1.1.1 Real Time Channels for Equities, Fixed Income and Funds Central Order Book

The following table explains which message types are available for each real-time channel.

	10 Gbps Unshaped Only available for Equities France, Italy and Netherlands and ETF's	1 Gbps Shaped		100 Mbps Shaped, Compressed		
	Pre-Trade					Post-Trade
	Full Order Book Order Update	Full Order Book Order Update	Full Order Book Market Update	Full Order Book Order Update	Full Order Book Market Update	Reference Data[1] and Full Trade Information
Start Of Day (1101)	X	X	X	X	X	X
End Of Day (1102)	X	X	X	X	X	X
Health Status (1103)	X	X	X	X	X	X
Technical Notification (1106)	X	X	X	X	X	X
Timetable (1006)						X
Market Status Change (1005)	X	X	X	X	X	
Standing Data (1007)						X
Contract Standing Data (1013)						
Outright Standing Data (1014)						
Strategy Standing Data (1012)						
BF Instrument Reference (1201)						
Market Update (1001)	X[2]	X[2]	X	X[2]	X	
Order Update (1002)	X	X		X		
Long Order Update (1015)	X	X		X		
Price Update (1003)	X[3]	X[3]	X[3]	X[3]	X[3]	X[4]
LIS Package Structure (1016)						X
Full Trade Information (1004)						X
BF Trade (1202)						
BF NAV (1203)						
Real Time Index (1008)						

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BF Instrument Suspension (1204)						
Statistics (1009)						X
Index Summary (1011)						

[1] Reference Data represents: all instruments characteristics, scheduled phases and market administration messages.

[2] This message will not provide: New Bid (3)/New Offer (4), Updated Bid (5) /Updated Offer (6), New Bid With Liquidity Provider (58)/New Offer With Liquidity Provider (59), Updated Bid With Liquidity Provider(60)/ Updated Offer With Liquidity Provider (61), New Bid RLP (Retail Liquidity Provider) (16)/ New Offer RLP (Retail Liquidity Provider) (17) and Updated Bid RLP Retail Liquidity Provider) (18)/ Updated Offer RLP (Retail Liquidity Provider) (19).

[3] This message will only provide: Indicative Matching Price (14)

[4] This message will not provide: Indicative Matching Price (14)

1.1.1.2 Real Time Channels for Equities Best of Book

The following table explains which message types are available for each real-time channel.

	1 Gbps Shaped	100 Mbps Shaped, Compressed and Conflated
	Pre-Trade	
	Full Order Book BoB	Full Order Book BoB
Start Of Day (1101)	X	X
End Of Day (1102)	X	X
Health Status (1103)	X	X
Technical Notification (1006)	X	X
Timetable (1006)		
Market Status Change (1005)		
Standing Data (1007)		
Contract Standing Data (1013)		
Outright Standing Data (1014)		
Strategy Standing Data (1012)		
BF Instrument Reference (1201)		
Market Update (1001)	X[1]	X[1]
Order Update (1002)		
Long Order Update (1015)		
Price Update (1003)		
LIS Package Structure (1016)		
Full Trade Information (1004)		
BF Trade (1202)		
BF NAV (1203)		
Real Time Index (1008)		
BF Instrument Suspension (1204)		
Statistics (1009)		
Index Summary (1011)		

[1] This message will provide only: New Bid RLP (Retail Liquidity Provider) (16)/ New Offer RLP (Retail Liquidity Provider) (17), Updated Bid RLP Retail Liquidity Provider) (18)/ Updated Offer RLP (Retail Liquidity Provider) (19) or Clear-Book (254).

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1.1.1.3 Real Time Channels for Equities Derivatives, Indices Derivatives, Commodities, Warrants and Certificates

The following table explains which message types are available for each real-time channel.

	10 Gbps Unshaped Available for Equities, Indices, and Commodities	1 Gbps Shaped[3]		100 Mbps Shaped, Compressed and Conflated		
	Pre-Trade					Post-Trade
	Full Order Book Market Update	Full Order Book Market Update	Best Bid and Offer	Full Order Book Market Update	Best Bid and Offer	Reference Data[1] and Full Trade Information
Start Of Day (1101)	X	X	X	X	X	X
End Of Day (1102)	X	X	X	X	X	X
Health Status (1103)	X	X	X	X	X	X
Technical Notification (1106)	X	X	X	X	X	X
Timetable (1006)						X
Market Status Change (1005)	X	X	X	X	X	
Standing Data (1007)						
Contract Standing Data (1013)						X
Outright Standing Data (1014)						X
Strategy Standing Data (1012)						X
BF Instrument Reference (1201)						
Market Update (1001)	X	X	X[2]	X	X[2]	
Order Update (1002)						
Long Order Update (1015)						
Price Update (1003)	X	X	X	X	X	X
LIS Package Structure (1016)						X
Full Trade Information (1004)						X
BF Trade (1202)						
BF NAV (1203)						
Real Time Index (1008)						
BF Instrument Suspension (1204)						
Statistics (1009)						X
Index Summary (1011)						

[1] Reference Data represents: all instruments characteristics, scheduled phases and market administration messages.

[2] This message will not provide: New Bid (3)/New Offer (4), Updated Bid (5) /Updated Offer (6), New Bid With Liquidity Provider (58)/New Offer With Liquidity Provider (59), Updated Bid With Liquidity Provider(60)/ Updated Offer With Liquidity Provider (61), New Bid RLP (Retail Liquidity Provider) (16)/ New Offer RLP (Retail Liquidity Provider) (17) and Updated Bid RLP Retail Liquidity Provider) (18)/ Updated Offer RLP (Retail Liquidity Provider) (19).

[3] For Equities Derivatives, Indices Derivatives and Commodities messages are sent Compressed and Conflated.

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1.1.1.4 Real Time Channels for Indices

	100 Mbps Shaped, Compressed Reference Data and Index Package
Start Of Day (1101)	X
End Of Day (1102)	X
Health Status (1103)	X
Technical Notification (1106)	
Timetable (1006)	
Market Status Change (1005)	
Standing Data (1007)	X
Contract Standing Data (1013)	
Outright Standing Data (1014)	
Strategy Standing Data (1012)	
BF Instrument Reference (1201)	
Market Update (1001)	
Order Update (1002)	
Long Order Update (1015)	
Price Update (1003)	
Full Trade Information (1004)	
BF Trade (1202)	
BF NAV (1203)	
Real Time Index (1008)	X
BF Instrument Suspension (1204)	
Statistics (1009)	X
Index Summary (1011)	X

1.1.1.5 Real Time Channels for Block

	100 Mbps Shaped, Compressed Reference Data[1], Full Trade Information and Market Status Change
Start Of Day (1101)	X
End Of Day (1102)	X
Health Status (1103)	X
Technical Notification (1106)	X
Timetable (1006)	X
Market Status Change (1005)	X
Standing Data (1007)	X
Contract Standing Data (1013)	
Outright Standing Data (1014)	
Strategy Standing Data (1012)	
BF Instrument Reference (1201)	
Market Update (1001)	
Order Update (1002)	
Long Order Update (1015)	
Price Update (1003)	
Full Trade Information (1004)	X
BF Trade (1202)	

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BF NAV (1203)	
LIS Package Structure (1016)	
Real Time Index (1008)	
BF Instrument Suspension (1204)	
Statistics (1009)	
Index Summary (1011)	

[1] Reference Data represents: all instruments characteristics, scheduled phases and market administration messages.

1.1.1.6 Real Time Channels for IBF

	100 Mbps Shaped, Compressed Reference Data[1], Trade & NAV Information and Instrument Suspension
Start Of Day (1101)	X
End Of Day (1102)	X
Health Status (1103)	X
Technical Notification (1106)	X
Timetable (1006)	
Market Status Change (1005)	
Standing Data (1007)	
Contract Standing Data (1013)	
Outright Standing Data (1014)	
Strategy Standing Data (1012)	
BF Instrument Reference (1202)	X
Market Update (1001)	
Order Update (1002)	
Long Order Update (1015)	
Price Update (1003)	
Full Trade Information (1004)	
BF Trade (1202)	X
BF NAV (1203)	X
LIS Package Structure (1016)	
Real Time Index (1008)	
BF Instrument Suspension (1204)	X
Statistics (1009)	
Index Summary (1011)	

[1] Reference Data represents all Irish bonds, ETFs and funds characteristics.

1.1.1.7 Real Time Channels for APA

Shaped and Compressed	
Pre-Trade	Post-Trade

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	StandingData and Quotes	StandingData and APA Full Trade Information
Start Of Day (1101)	X	X
End Of Day (1102)	X	X
Health Status (1103)	X	X
APA Standing Data (1027)	X	X
APA Full Trade Information (1028)		X
APA Quotes (1026)	X	

1.1.1.8 Real Time Channels for Cash LuxSE

	1 Gbps Shaped		100 Mbps Shaped, Compressed		
	Pre-Trade				Post-Trade
	Full Order Book Order Update	Full Order Book Market Update	Full Order Book Order Update	Full Order Book Market Update	Reference Data[1] and Full Trade Information
Start Of Day (1101)	X	X	X	X	X
End Of Day (1102)	X	X	X	X	X
Health Status (1103)	X	X	X	X	X
Technical Notification (1106)	X	X	X	X	X
Timetable (1006)					X
Market Status Change (1005)	X	X	X	X	
Standing Data (1007)					X
Market Update (1001)	X[2]	X	X[2]	X	
Order Update (1002)	X		X		
Long Order Update (1015)	X		X		
Price Update (1003)	X[3]	X[3]	X[3]	X[3]	X[4]
Full Trade Information (1004)					X
Real Time Index (1008)					X
Statistics (1009)					X
Index Summary (1011)					X

[1] Reference Data represents: all instruments characteristics, scheduled phases and market administration messages.

[2] This message will not provide: New Bid (3)/New Offer (4), Updated Bid (5) /Updated Offer (6), New Bid With Liquidity Provider (58)/New Offer With Liquidity Provider (59), Updated Bid With Liquidity Provider(60)/ Updated Offer With Liquidity Provider (61), New Bid RLP (Retail Liquidity Provider) (16)/ New Offer RLP (Retail Liquidity Provider) (17) and Updated Bid RLP Retail Liquidity Provider) (18)/ Updated Offer RLP (Retail Liquidity Provider) (19).

[3] This message will only provide: Indicative Matching Price (14)

[4] This message will **not** provide: Indicative Matching Price (14)

1.1.1.9 Snapshot Channels for Equities, Fixed Income and Funds Central Order Book

	Compressed and Shaped		
	100 Mbps		
	Full Order Book Order Update	Full Order Book Market Update	Reference Data[1] and Full Trade Information

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Start Of Day (1101)	X	X	X
End Of Day (1102)	X	X	X
Health Status (1103)	X	X	X
Start Of Snapshot (2101)	X	X	X
End Of Snapshot (2102)	X	X	X
Technical Notification (1106)			
Timetable (1006)			X
Market Status Change (1005)	X	X	
Standing Data (1007)			
Contract Standing Data (1013)			
Outright Standing Data (1014)			
Strategy Standing Data (1012)			
BF Instrument Reference (1201)			
Market Update (1001)	X[2]	X	
Order Update (1002)	X		
Long Order Update (1015)	X		
Price Update (1003)	X	X	X
LIS Package Structure (1016)			X
Full Trade Information (1004)			X
BF Trade (1202)			
BF NAV (1203)			
Real Time Index (1008)			
BF Instrument Suspension (1204)			
Statistics (1009)			X
Index Summary (1011)			

[1] Reference Data represents: all instruments characteristics, scheduled phases and market administration messages.

[2] This message will not provide: New Bid (3)/New Offer (4), Updated Bid (5) /Updated Offer (6), New Bid With Liquidity Provider (58)/New Offer With Liquidity Provider (59), Updated Bid With Liquidity Provider(60)/ Updated Offer With Liquidity Provider (61), New Bid RLP (Retail Liquidity Provider) (16)/ New Offer RLP (Retail Liquidity Provider) (17) and Updated Bid RLP Retail Liquidity Provider) (18)/ Updated Offer RLP (Retail Liquidity Provider) (19).

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Snapshot Channels for Equities Best of Book

	100 Mbps Shaped, Compressed
	Full Order Book BoB
Start Of Day (1101)	X
End Of Day (1102)	X
Health Status (1103)	X
Start Of Snapshot (2101)	X
End Of Snapshot (2102)	X
Technical Notification (1106)	
Timetable (1006)	
Market Status Change (1005)	
Standing Data (1007)	
Contract Standing Data (1013)	
Outright Standing Data (1014)	
Strategy Standing Data (1012)	
BF Instrument Reference (1201)	
Market Update (1001)	X[1]
Order Update (1002)	
Long Order Update (1015)	
Price Update (1003)	
LIS Package Structure (1016)	
Full Trade Information (1004)	
BF Trade (1202)	
BF NAV (1203)	
Real Time Index (1008)	
BF Instrument Suspension (1204)	
Statistics (1009)	
Index Summary (1011)	

[1] This message will provide only: New Bid RLP (Retail Liquidity Provider) (16)/ New Offer RLP (Retail Liquidity Provider) (17), Updated Bid RLP Retail Liquidity Provider) (18)/ Updated Offer RLP (Retail Liquidity Provider) (19) or Clear-Book (254).

1.1.1.10 Snapshot Channels for Equities Derivatives, Indices Derivatives, Commodities

	Compressed and Shaped		
	100 Mbps		
	Full Order Book Market Update	Best Bid and Offer	Reference Data[1] and Full Trade Information
Start Of Day (1101)	X	X	X
End Of Day (1102)	X	X	X
Health Status (1103)	X	X	X
Start Of Snapshot (2101)	X	X	X
End Of Snapshot (2102)	X	X	X
Technical Notification (1106)			
Timetable (1006)			X
Market Status Change (1005)	X	X	

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Standing Data (1007)			
Contract Standing Data (1013)			X
Outright Standing Data (1014)			X
Strategy Standing Data (1012)			X
BF Instrument Reference (1201)			
Market Update (1001)	X	X[2]	
Order Update (1002)			
Long Order Update (1015)			
Price Update (1003)	X	X	X
LIS Package Structure (1016)			X
Full Trade Information (1004)			X
BF Trade (1202)			
BF NAV (1203)			
Real Time Index (1008)			
BF Instrument Suspension (1204)			
Statistics (1009)			X
Index Summary (1011)			

[1] Reference Data represents: all instruments characteristics, scheduled phases and market administration messages.

[2] This message will not provide: New Bid (3)/New Offer (4), Updated Bid (5) /Updated Offer (6), New Bid With Liquidity Provider (58)/New Offer With Liquidity Provider (59), Updated Bid With Liquidity Provider(60)/ Updated Offer With Liquidity Provider (61), New Bid RLP (Retail Liquidity Provider) (16)/ New Offer RLP (Retail Liquidity Provider) (17) and Updated Bid RLP Retail Liquidity Provider) (18)/ Updated Offer RLP (Retail Liquidity Provider) (19).

Snapshot Channels for Warrants and Certificates

	Compressed and Shaped		
	100 Mbps		
	Full Order Book Market Update	Best Bid and Offer	Reference Data[1] and Full Trade Information
Start Of Day (1101)	X	X	X
End Of Day (1102)	X	X	X
Health Status (1103)	X	X	X
Start Of Snapshot (2101)	X	X	X
End Of Snapshot (2102)	X	X	X
Technical Notification (1106)			
Timetable (1006)			X
Market Status Change (1005)	X	X	
Standing Data (1007)			
Contract Standing Data (1013)			
Outright Standing Data (1014)			
Strategy Standing Data (1012)			
BF Instrument Reference (1201)			
Market Update (1001)	X	X[2]	
Order Update (1002)			

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Long Order Update (1015)			
Price Update (1003)	X	X	X
LIS Package Structure (1016)			
Full Trade Information (1004)			X
BF Trade (1202)			
BF NAV (1203)			
Real Time Index (1008)			
BF Instrument Suspension (1204)			
Statistics (1009)			X
Index Summary (1011)			

[1] Reference Data represents: all instruments characteristics, scheduled phases and market administration messages.

[2] This message will not provide: New Bid (3)/New Offer (4), Updated Bid (5) /Updated Offer (6), New Bid With Liquidity Provider (58)/New Offer With Liquidity Provider (59), Updated Bid With Liquidity Provider(60)/ Updated Offer With Liquidity Provider (61), New Bid RLP (Retail Liquidity Provider) (16)/ New Offer RLP (Retail Liquidity Provider) (17) and Updated Bid RLP Retail Liquidity Provider) (18)/ Updated Offer RLP (Retail Liquidity Provider) (19).

Snapshot Channels for Indices

	Compressed and Shaped
	100 Mbps
	Reference Data and Index Package
Start Of Day (1101)	X
End Of Day (1102)	X
Health Status (1103)	X
Start Of Snapshot (2101)	X
End Of Snapshot (2102)	X
Technical Notification (1106)	
Timetable (1006)	
Market Status Change (1005)	
Standing Data (1007)	
Contract Standing Data (1013)	
Outright Standing Data (1014)	
Strategy Standing Data (1012)	
BF Instrument Reference (1201)	
Market Update (1001)	
Order Update (1002)	
Long Order Update (1015)	
Price Update (1003)	
Full Trade Information (1004)	
BF Trade (1202)	
BF NAV (1203=	
LIS Package Structure (1016)	
Real Time Index (1008)	X
BF Insturment Suspension (1204)	
Statistics (1009)	X
Index Summary (1011)	X

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Snapshot Channels for Block

	Compressed and Shaped 100 Mbps Reference Data[1], Full Trade Information and Market Status Change
Start Of Day (1101)	X
End Of Day (1102)	X
Health Status (1103)	X
Technical Notification (1106)	X
Timetable (1006)	X
Market Status Change (1005)	X
Standing Data (1007)	
Contract Standing Data (1013)	
Outright Standing Data (1014)	
Strategy Standing Data (1012)	
BF Instrument Reference (1201)	
Market Update (1001)	
Order Update (1002)	
Long Order Update (1015)	
Price Update (1003)	
Full Trade Information (1004)	X
BF Trade (1202)	
BF NAV (1203)	
LIS Package Structure (1016)	
Real Time Index (1008)	
BF Instrument Suspension (1204)	
Statistics (1009)	
Index Summary (1011)	

[1] Reference Data represents: all instruments characteristics, scheduled phases and market administration messages.

1.1.1.11 Snapshot Channels for IBF

	100 Mbps Shaped, Compressed Reference Data[1], Trade & NAV Information and Instrument Suspension
Start Of Day (1101)	X
End Of Day (1102)	X
Health Status (1103)	X
Technical Notification (1106)	X
Timetable (1006)	
Market Status Change (1005)	
Standing Data (1007)	
Contract Standing Data (1013)	

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Outright Standing Data (1014)	
Strategy Standing Data (1012)	
BF Instrument Reference (1202)	X
Market Update (1001)	
Order Update (1002)	
Long Order Update (1015)	
Price Update (1003)	
Full Trade Information (1004)	
BF Trade (1202)	X
BF NAV (1203)	X
LIS Package Structure (1016)	
Real Time Index (1008)	
BF Instrument Suspension (1204)	X
Statistics (1009)	
Index Summary (1011)	

[1] Reference Data represents Non Traded Irish bonds, ETFs and funds characteristics.

1.1.1.12 Snapshot Channels for APA

	Compressed and Shaped	
	Pre-Trade	Post-Trade
	Standing Data and Quotes	Standing Data and APA Full Trade Information
Start Of Day (1101)	X	X
End Of Day (1102)	X	X
Health Status (1103)	X	X
Start Of Snapshot (2101)	X	X
End Of Snapshot (2102)	X	X
APA Standing Data (1027)	X	X
APA Full Trade Information (1028)		X
APA Quotes (1026)	X	

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1.1.1.13 Snapshot Channels for Cash LuxSE

	Compressed and Shaped		
	100 Mbps		
	Full Order Book Order Update	Full Order Book Market Update	Reference Data[1] and Full Trade Information
Start Of Day (1101)	X	X	X
End Of Day (1102)	X	X	X
Health Status (1103)	X	X	X
Start Of Snapshot (2101)	X	X	X
End Of Snapshot (2102)	X	X	X
Technical Notification (1106)			
Timetable (1006)			X
Market Status Change (1005)	X	X	
Standing Data (1007)			
Market Update (1001)	X[2]	X	
Order Update (1002)	X		
Long Order Update (1015)	X		
Price Update (1003)	X[3]	X[3]	X[4]
Full Trade Information (1004)			X
Real Time Index (1008)			X
Statistics (1009)			X
Index Summary (1011)			X

[1] Reference Data represents: all instruments characteristics, scheduled phases and market administration messages.

[2] This message will not provide: New Bid (3)/New Offer (4), Updated Bid (5) /Updated Offer (6), New Bid With Liquidity Provider (58)/New Offer With Liquidity Provider (59), Updated Bid With Liquidity Provider(60)/ Updated Offer With Liquidity Provider (61), New Bid RLP (Retail Liquidity Provider) (16)/ New Offer RLP (Retail Liquidity Provider) (17) and Updated Bid RLP Retail Liquidity Provider) (18)/ Updated Offer RLP (Retail Liquidity Provider) (19).

[3] This message will only provide: Indicative Matching Price (14)

[4] This message will **not** provide: Indicative Matching Price (14)

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MARKET DATA GATEWAY FEATURES

START AND END OF DAY

"Start Of Day" (1101) messages are sent on each channel once the Market Data Gateway starts. These messages will be sent periodically until another MDG message is sent on any channel of an aggregator (please refer to The Market Data Sequence Number paragraph for aggregator description). After the Start of Day messages, the "Health Status" messages (1103) will be sent periodically.

This mechanism guarantees that "Start Of Day" (1101) messages are the first messages sent by MDG.

At end of day, MDG will stop sending messages (including "Health Status" (1103)) and will periodically send "End Of Day" (1102) messages during a specified period before shutting down.

BOOK RETRANSMISSION

The Book Retransmission is an automated MDG process used by Optiq MDG to ensure continuity of the Market Data feed. It allows to retransmit at start of day the order books data following the previous trading day but also to resynchronize the Market Data feed in case of high availability event on Optiq platform (software recovery mechanism).

This process consists of resubmitting the depth of the book on real-time channels. This book retransmission occurs:

- Every morning at the start of the day.

Intraday in case of HA recovery event.

Clear the Book

Before any market retransmission, Optiq MDG will send a clear book request.

For the first clear book, at the beginning of the day, customers are expected to clear any stored information for any Market Data Update Type values received the previous day.

For any intraday clear book request, customers are expected to clear only the Market Data Update Types related to the specific order book, listed below, and keep all other Market Data Update Type values unchanged.

1 - Best Bid (Cash and Derivatives)
2 - Best Offer (Cash and Derivatives)
3 - New Bid (Cash and Derivatives)
4 - New Offer (Cash and Derivatives)
5 - Updated Bid (Cash and Derivatives)
6 - Updated Offer (Cash and Derivatives)
14 - High Dynamic Collar (Cash Only)
15 - Low Dynamic Collar (Cash Only)
16 - New Bid RLP (Retail Liquidity Provider) (Cash Only)
17 - New Offer RLP (Retail Liquidity Provider) (Cash Only)
18 - Updated Bid RLP Retail Liquidity Provider) (Cash Only)
19 - Updated Offer RLP (Retail Liquidity Provider) (Cash Only)
58 - New Bid With Liquidity Provider (Cash Only)
59 - New Offer With Liquidity Provider (Cash Only)
60 - Updated Bid With Liquidity Provider (Cash Only)
61 - Updated Offer With Liquidity Provider (Cash Only)
63 - Low Static Collar
64 - High Static Collar
70 - Low LP Collar (Cash Only)

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71 - High LP Collar (Cash Only)

For market by orders, clients will receive an Order Update (1002) (and a Long Order Update (1015) for Fixed Income segment) with Market Data Action Type set to "3 - Deletion of all orders for the given instrument", quantity set to '0' (zero) and all other fields set to null according to the SBE protocol.

Morning Book Retransmission

At the initialization of each new trading day the exchange uses the following broadcasting sequence:

1. Date of trading session in Start Of Day (1101)
   - Market Data Sequence Number set to 0
2. Trading patterns in Timetable (1006)
3. Instrument characteristics in Standing Data (1007)
4. Contract reference data in Contract Standing Data (1013)
5. Outright reference data in Outright Standing Data (1014)
6. Strategy reference data in Strategy Standing Data (1012)
7. Book state inaccessible in Market Status Change (1005)
   - Book state: 'Inaccessible'
   - Trading period: 'Opening'
   - Rebroadcast Indicator: 0
8. Clear book in Order Update (1002)*
   - Market Data Action Type: 3 – Deletion of all orders by side
   - Rebroadcast Indicator: 0
9. Clear book in Long Order Update (1015)**
   - Market Data Action Type: 3 – Deletion of all orders by side
   - Rebroadcast Indicator: 0
10. Clear limits in Market Update (1001)
    - Market Data Update Type: 254 – Clear Book
    - Rebroadcast Indicator: 0
11. Reference Price and Settlement in Price Update (1003)
    - Market Data Price Type: 12 = Adjusted Closing Price, 9 = Official YDSP
    - Rebroadcast Indicator: 1
12. Full depth book in Order Update (1002)*
    - Market Data Action Type: 5 - Retransmission of all orders for the given instrument
    - Rebroadcast Indicator: 1
13. Full depth book in Long Order Update (1015)**
    - Market Data Action Type: 5 – Retransmission of all orders for the given instrument
    - Rebroadcast Indicator: 1
14. BBO in Market Update (1001)
    - Market Data Update Type: 1 - Best Bid and 2 - Best Offer
    - Rebroadcast Indicator: 1
15. Full depth in Market Update (1001)
    - Market Data Update Type: 3 – New Bid and 4 - New Offer
    - Rebroadcast Indicator: 1
16. End of book retransmission in Technical Notification (1106)
    - Technical Notification Type: 1 – Instrument Book Retransmission End
17. Closed in Market Status Change (1005)
    - Book state: 'Closed'
    - Rebroadcast Indicator: 1

*Note: The messages highlighted are only applicable on segments providing the order book by orders.

**Note: The messages highlighted are only applicable on Fixed Income segment.

Intraday Book Retransmission

A Market Update (1001) or Order Update (1002) message is sent for each instrument, respectively filled with Market Data Update Type = "254 - Clear Book" or Market Data Action Type = "3 - Deletion of all orders for the given instrument". Then the full book depth will be resent with "Rebroadcast Indicator" set to "1".

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For Market Update messages (1001): limits will be aggregated, and the Market Data Update Type field will be "5 - Updated Bid" or "6 - Updated Offer" (or "Updated Bid/Offer RLP" etc.). At the end of book retransmission a Technical Notification (1106) is sent to indicate the "1 – Instrument Book Retransmission End".

For Order Update messages (1002): each order will be resent with Market Data Action Type = "5 - Retransmission of all orders for the given instrument".

In order to differentiate a book retransmission from real time messages, the Rebroadcast Indicator is set to "1".

Note: For Fixed Income segment, Order Update (1002) messages are followed by Long Order Update (1015) messages.

SNAPSHOTS

Snapshot is a service providing an image of the market data at a giving time of the day to allow clients to recover from packet loss or for intraday starts. Customers can 'hop on' (connect) and 'hop off' the Snapshot multicast channels as needed.

Each real time channel has a matching snapshot channel. Real time channels giving the same information through different bandwidth speed share the same snapshot channel. An image contains all instruments broadcasted on this channel.

An image sent in the snapshot is linked to real time with the Last Market Data Sequence Number from the real time channel.

This broadcasted image of all channels of an aggregator (see section on Market Data Sequence Number) is a snapshot sequence and cannot be sent more than 1 every 2 seconds. The order of each channel images in a snapshot sequence is fixed for a day but can change from 1 day to another.

They will use the same messages as real time messages with Rebroadcast indicator set to "1".

Here are the snapshot sequences for Cash, Derivatives, Indices and Best of Book (BoB)

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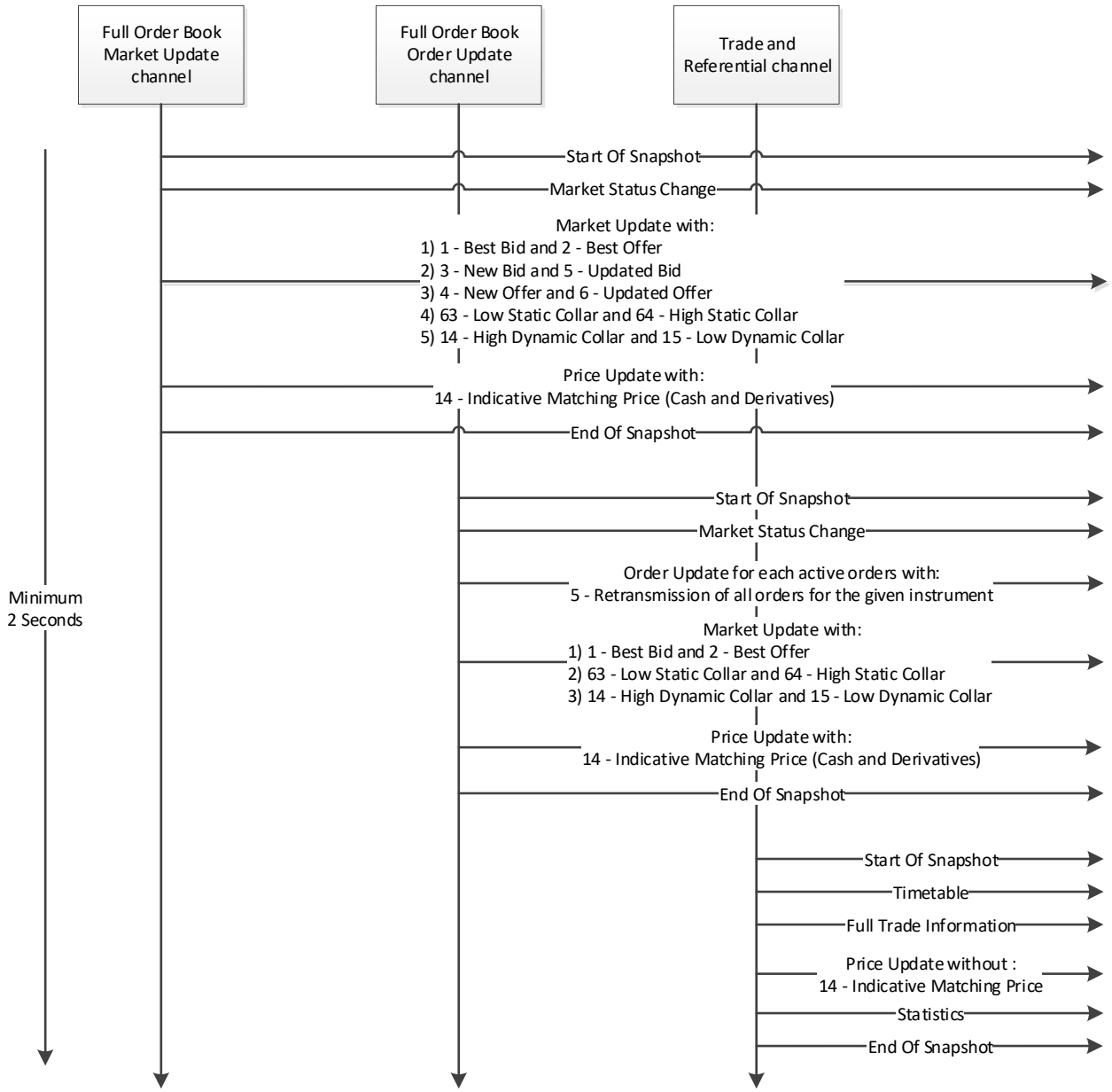
- Snapshot sequence for Equities, Fixed Income and Funds:



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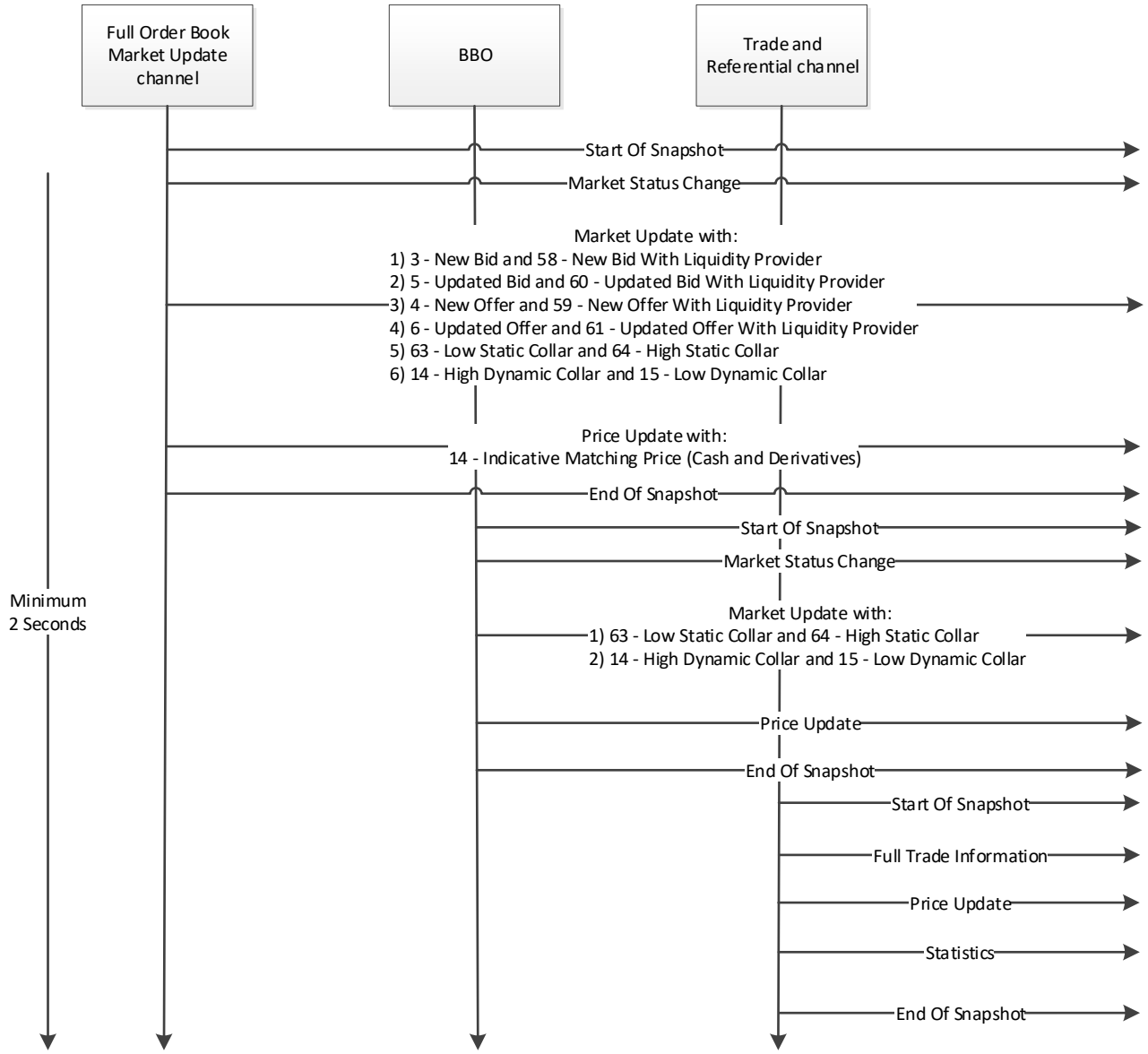
- Snapshot sequence for Warrants:



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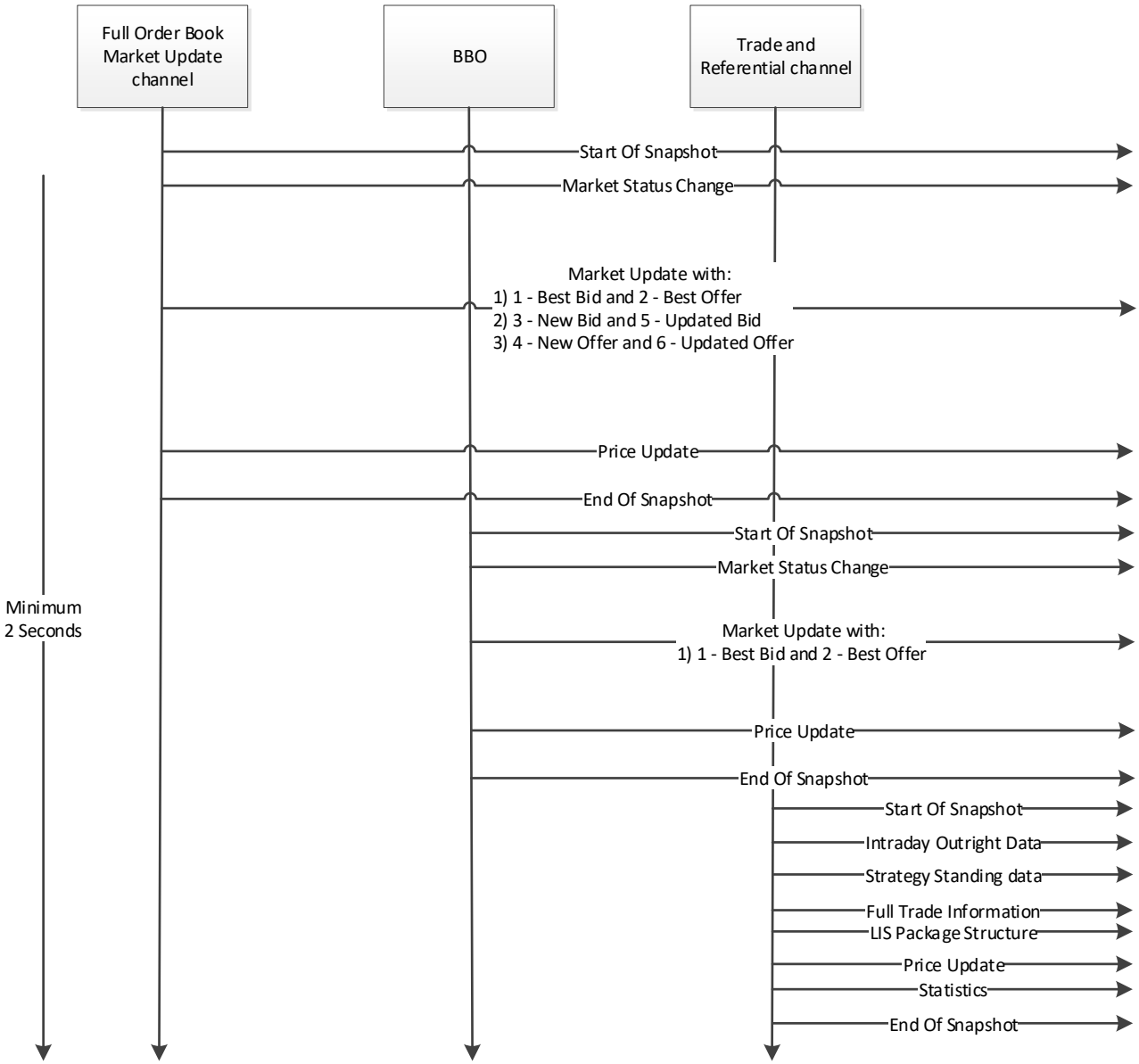
- Snapshot sequence for Equities Derivatives, Indices Derivatives, and Commodities:



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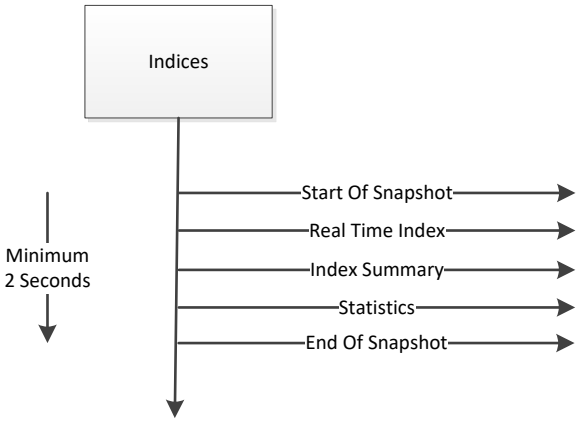
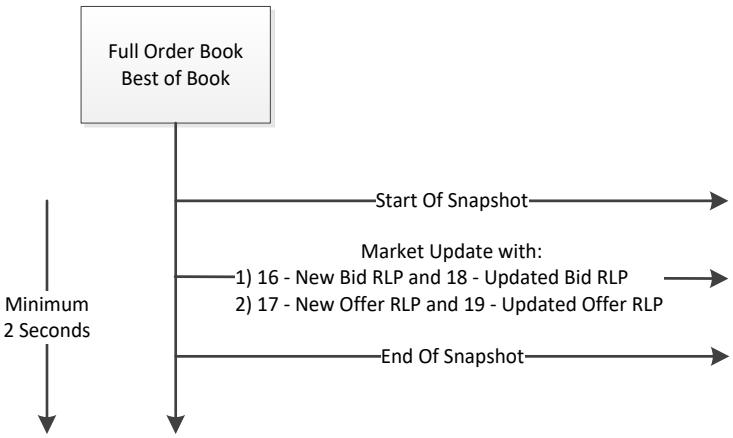
- Snapshot sequence for Indices:



- Snapshot Sequence for Equities Best of Book:



Both "Start Of Snapshot" and "End Of Snapshot" messages contain the last "Market Data Sequence Number" of the last real-time message taken into account by the snapshot (see Sequence Numbers and Snapshot Sequence behaviour for explanations on the "Market Data Sequence Number"). This last MDSN has been sent on each channel speed.

In the 2 following situations:

- Late connection to the exchange
- Loss of packets on both lines A and B

Members have to process as follow:

- Clear all the market data sent on this channel.
- Listen to the real time channel and start queuing all messages.
- Identify the lowest MDSN from real time feed.
- Wait for a Start Of Snapshot with a "Last Market Data Sequence Number" that is higher or equal to the MDSN identified just before on real time. Otherwise the Snapshot might not contain all the missing messages.
- Listen to the entire snapshot image until the End Of Snapshot.
- Discard all the real time messages with a MDSN lower or equal than the Last Market Data Sequence Number of the Start or End Of Snapshot message.
- Integrate all the remaining real time messages into the snapshot image.
- Keep listening real time as normal.

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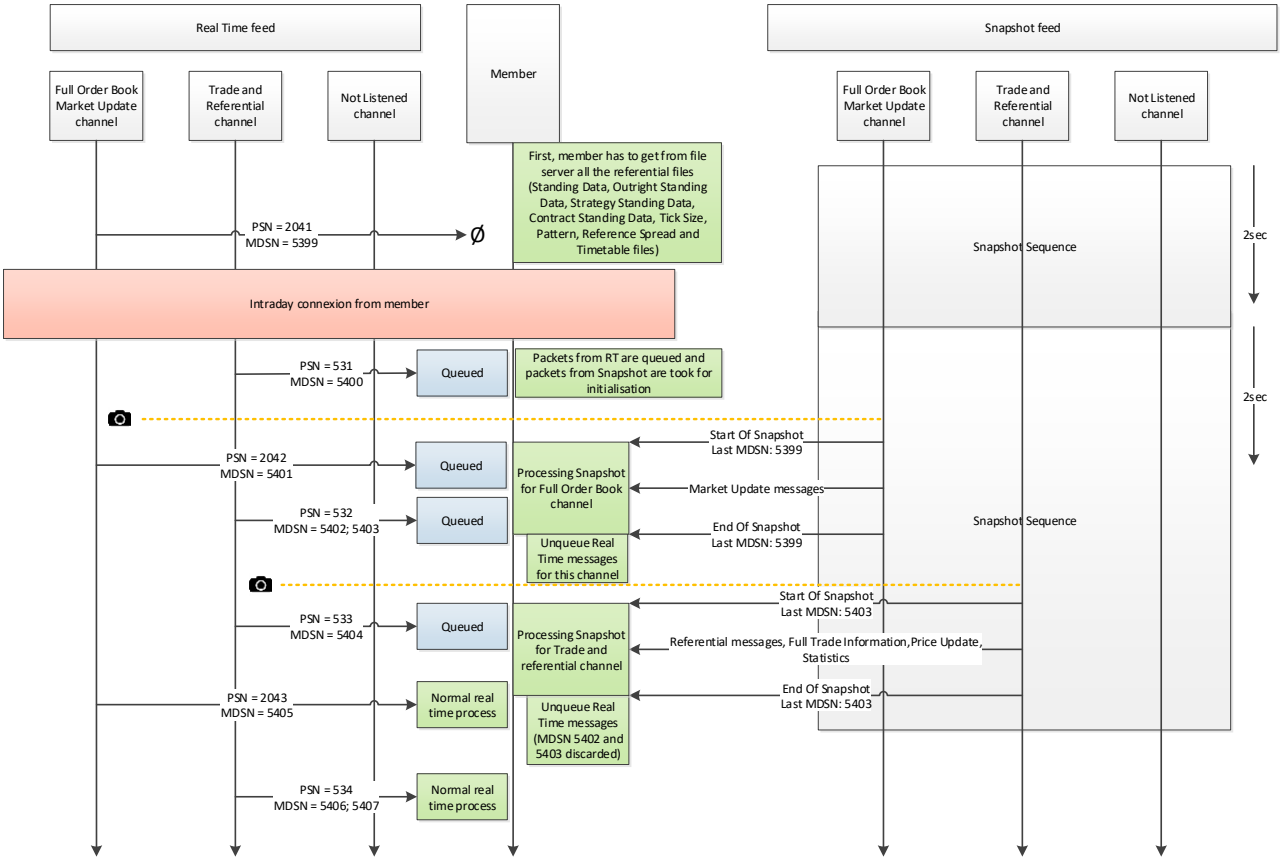
If in the snapshot a packet is missing, then try to get this packet from the second line. If it has not been retrieved with the second line, then use the next snapshot for this channel.

It is important to note that since the Market Data Sequence Number of snapshot channels does not necessarily increment by 1, the sequence number in the start or end snapshot messages might belong to another channel and was in fact not actually lost. In order to correctly identify which packets are indeed lost, please refer to section Gap Detection and Line Arbitration.

- Example of a late connection to the exchange:



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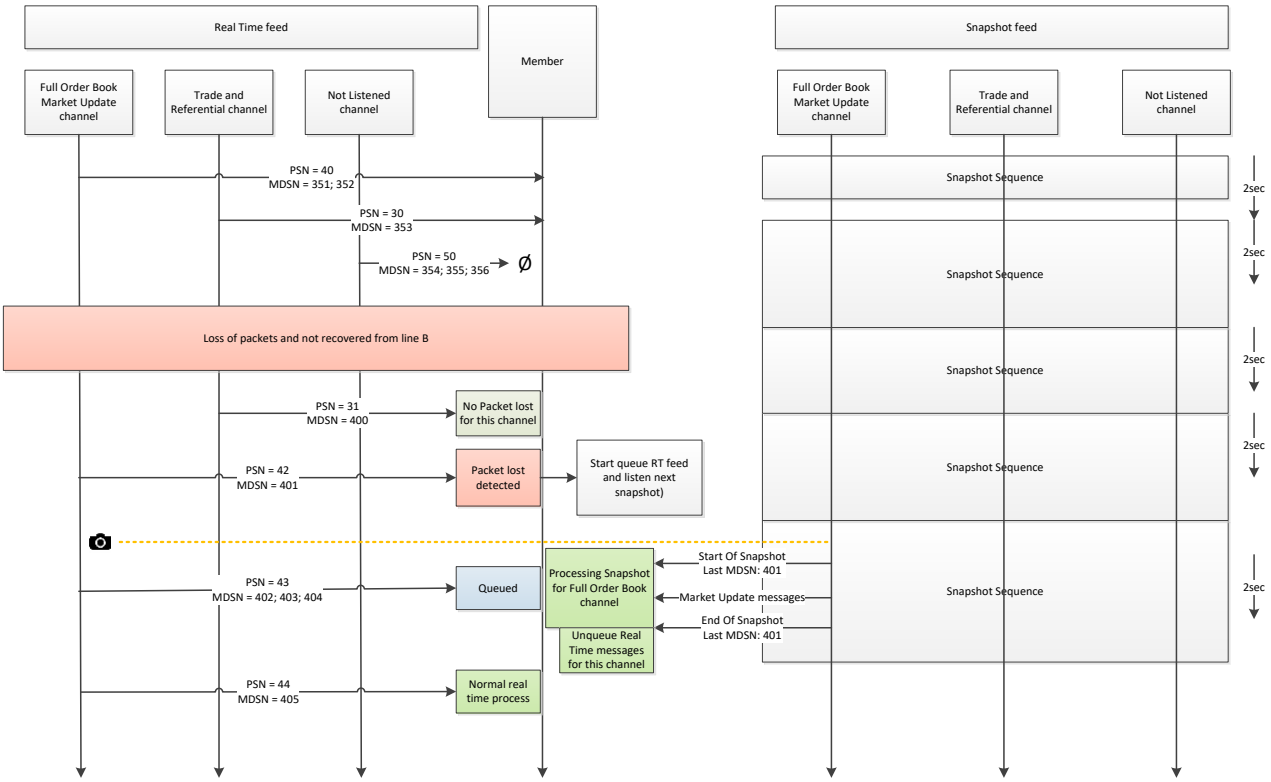
- Example of a packet loss:



- How to use information type

MDG offers another mechanism in the snapshot to resynchronize only for a subset of the information whatever the Symbol Index.

This information is functionally gathered into information type:

- For Market Update, the information types are BBO, Full Depth, Collars and Full Depth Best of Book (Please refer to the table below in this section to have all the Market Data Update Type for each Information Type)
- For the other messages, every message type is in a single information type (ex: all the order update messages are in the information type "Order Update")

For example, if members are only interested into the information type BBO and they have lost a packet in the real-time and they have to use the snapshot to recover, they can detect if the lost packet was containing BBO information.

To do so, members have to look at the Market Data Sequence Number (MDSN) of snapshotted messages. If for one information type, the MDSN in a snapshot message is lower or equals to the MDSN of a message received in real time (for this information type), it means that no messages have been lost for this information type.

The following table provides the exact mapping between Market Data Update Types and Information Types.

MARKET DATA UPDATE TYPE	INFORMATION TYPE
1 - Best Bid (Cash and Derivatives)	BBO
2 - Best Offer (Cash and Derivatives)	
3 - New Bid (Cash and Derivatives)	Full Depth
4 - New Offer (Cash and Derivatives)	
5 - Updated Bid (Cash and Derivatives)	
6 - Updated Offer (Cash and Derivatives)	

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MARKET DATA UPDATE TYPE	INFORMATION TYPE
58 - New Bid With Liquidity Provider (Cash Only)	
59 - New Offer With Liquidity Provider (Cash Only)	
60 - Updated Bid With Liquidity Provider (Cash Only)	
61 - Updated Offer With Liquidity Provider (Cash Only)	
14 - High Dynamic Collar (Cash Only)	Collars
15 - Low Dynamic Collar (Cash Only)	
63 - Low Static Collar	
64 - High Static Collar	
70 - Low LP Collar (Cash Only)	
71 - High LP Collar (Cash Only)	
91 - AQS Expansion Factor	
92 - Collar Expansion Factor	
93 - Collar Enabled	
94 - Collar Disabled	
98 - FSP Triggered	
16 - New Bid RLP (Retail Liquidity Provider) (Cash Only)	Full Depth Best of Book
17 - New Offer RLP (Retail Liquidity Provider) (Cash Only)	
18 - Updated Bid RLP (Retail Liquidity Provider) (Cash Only)	
19 - Updated Offer RLP (Retail Liquidity Provider) (Cash Only)	

Members that connect late just have to take the full snapshot and synchronize with real-time.

Example 1:

If members have the following from the real time:
MDSN for BBO = 98
MDSN for Full Depth = 80
MDSN for Collars = 45

And if in snapshot the Last Market Data Sequence Number is 100 with:
MDSN for BBO = 100 (meaning all the messages where Market Data Update Type with a value that matches BBO Information Type have a MDSN equal to 100)
MDSN for Full Depth = 80
MDSN for Collars = 45

It means that members need to recover all the BBO Information Type but not Full Depth and Collars.

Example 2:

If the last MSC message sent had MDSN 80, then all MSC messages in snapshot have MDSN 80

Example 3:

If the last Best Bid sent has MDSN 1000 in the real-time channel, then all Market Update message for Best Bid and Best Ask updates (types 1 and 2) will have MDSN 1000 in the snapshot too.

COMPRESSION

Optiq MDG will use LZ4 compression in block mode with no headers. It will be available for real-time market data used on low bandwidth connections (100Mbps) and for all snapshots. Only the body of the Market Data

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packets will be compressed, excluding the packet header. It should be noted that a compressed market data packet can contain several different messages, which are all compressed into a single packet.

On compressed channels, it is possible to have compressed and uncompressed packets. The compression flag in the packet header defines if the packet is compressed or not.

For Derivatives, on 1Gbps channels, messages are compressed.

The maximum extracted packet size cannot be greater than 8192 bytes.

Please see Appendix A: Disclaimers for LZ4 disclaimers.

SHAPING

Optiq MDG Traffic Shaping

Optiq MDG Traffic shaping is used for 1Gbps connections on real-time market data and for 100Mbps connections on real-time and snapshot market data. Traffic shaping by Optiq MDG is used to:

- Optimize the use of available bandwidth on 1 Gbps and 100 Mbps connections
- Prevent packet loss: Optiq MDG will keep track of what is being sent out per millisecond and will use this information to guarantee packets will be sent respecting the available bandwidth
- Guarantee performance available on 1 Gbps and 100 Mbps connections
- Minimize latency

Optiq MDG unshaped

Optiq MDG will provide unshaped real-time market data for clients on 10 Gbps connections. Unshaped means that messages are sent out without any restrictions and this is made available for:

- Cash Regulated Markets - Equities - France and the Netherlands
- Cash Regulated Markets - ETF
- Derivatives – Index Futures – France and the Netherlands
- Derivatives - Index Options - France and the Netherlands

The following simplified examples illustrate how a shaped channel behaves when no shaping happens and in case of shaping.

This shows the number of bytes to emit for each millisecond. Hence on a 100Mbps channel, we have a maximum bandwidth capacity per millisecond of 12 500 bytes (100 000 000 bits / 8 (to get bytes) / 1 000 (to get milliseconds)).

With the following set of data (no shaping):

MILLISECOND NUMBER	NUMBER OF BYTES TO SEND ON THIS MILLISECOND	REMAINING FROM PREVIOUS MILLISECOND
1	7 000.00	0
2	11 000.00	0
3	8 000.00	0
4	12 000.00	0
5	10 000.00	0
6	12 000.00	0
7	9 000.00	0
8	11 000.00	0
9	12 000.00	0
10	9 000.00	0

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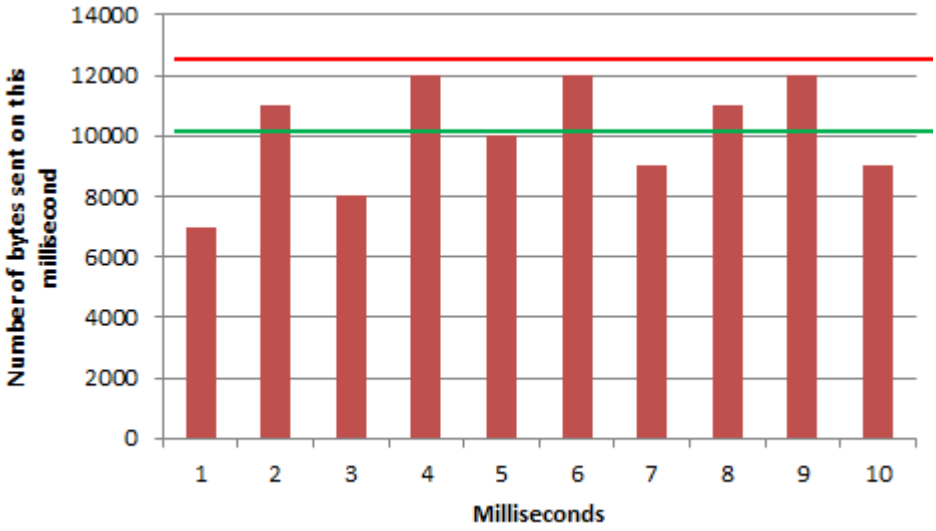
We have this in the feed:



We can see that nothing uses more than the bandwidth acceptance (red line) and the average use of the bandwidth (green line) is lower (10 100 bytes per millisecond).

Now if we take the following set of data (shaping):

MILLISECOND NUMBER	NUMBER OF BYTES TO SEND ON THIS MILLISECOND	REMAINING FROM PREVIOUS MILLISECOND
1	12 000.00	0
2	5 000.00	0
3	27 000.00	0
4	15 000.00	14 500.00
5	10 000.00	17 000.00
6	20 000.00	14 500.00
7	5 000.00	22 000.00
8	3 000.00	14 500.00
9	7 000.00	5 000.00
10	9 000.00	0

We will have shaping:

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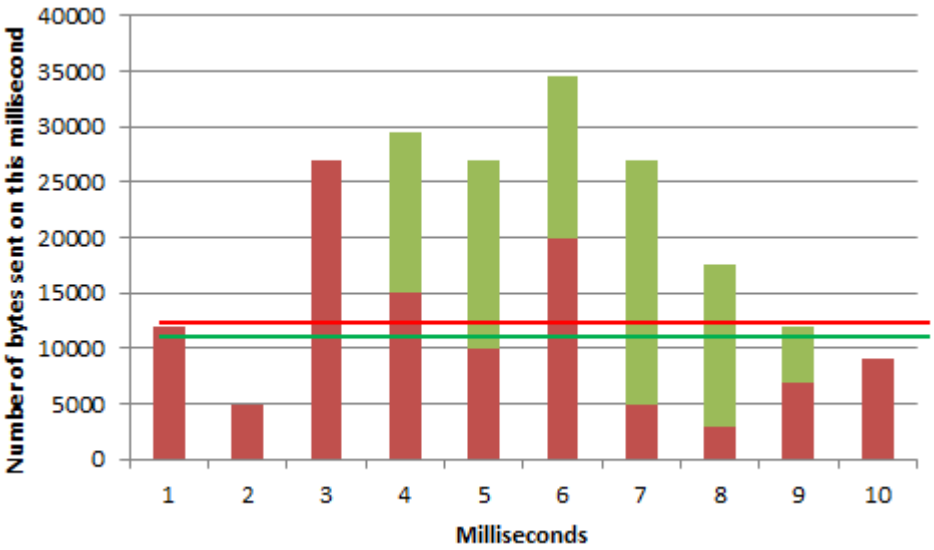

In green the packet that will be sent the next millisecond since it was not possible to send it immediately.

Hence on the feed the emission will be the following for this second:

MILLISECOND NUMBER	BANDWIDTH USE PER MILLISECOND
1	12 000.00
2	5 000.00
3	12 500.00
4	12 500.00
5	12 500.00
6	12 500.00
7	12 500.00
8	12 500.00
9	12 000.00
10	9 000.00

GAP DETECTION AND LINE ARBITRATION

The Packet Sequence Number (please see Market Data Packet Header) should be used to detect gaps in the transmission of packets.

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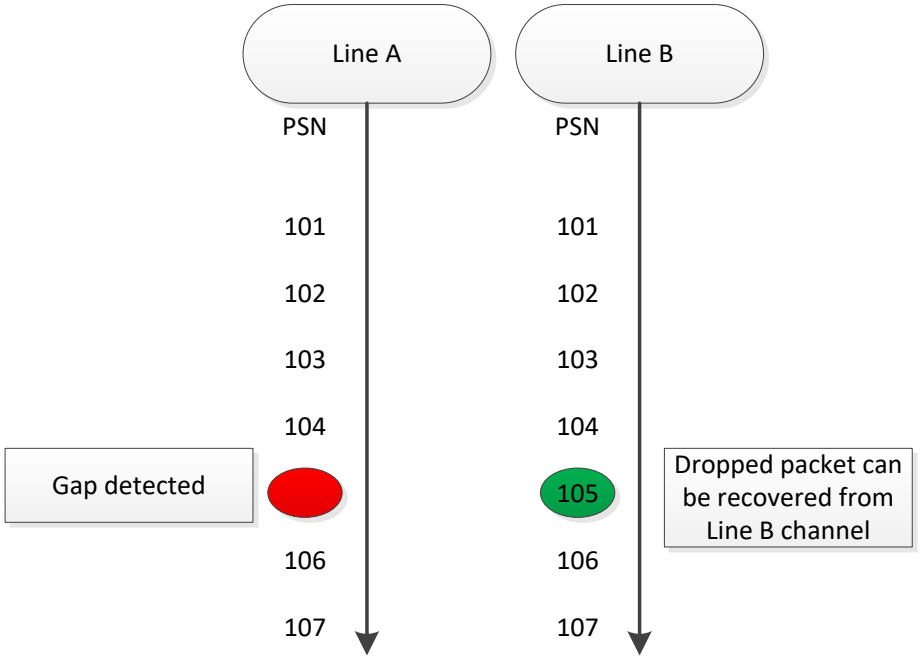

Using this method, a lost packet can be recovered from the second line. In case of packet loss on both lines, then the snapshot mechanism should be used.

UDP packets can potentially arrive unordered and potentially sent twice. As such, systems should be able to reorder the packets and detect duplicate packets.

SYSTEM FAILURES

- High Availability

The High Availability (HA) functionality of Optiq MDG is set up to ensure that there is no loss of service during an outage on the primary publisher, such as a hardware failure. Failover to a secondary publisher can be identified by the change of sequence in the Packet headers (the Packet Sequence Number restarts to "1" and bits between 1 and 3 in the "Packet Flags" field increase by "1". Keep in mind that these 3 bits can overflow, and it will result with a "0" again). The HA failover is designed to be as transparent as possible, and multicast groups and ports will not change. However, there are specific details that must be considered.

When a market data source restarts and is not able to keep its sequential behaviour, the Market Data Gateway initiates a new start sequence for this source. The Market Data Gateway then sends an order book retransmission sequence, and a list of corrected trades asynchronously inside the real-time channel used for trades. These messages are flagged as a retransmission (rebroadcast Indicator set to "1").

As the system is asynchronous, some trades might be lost in case of a matching engine failure. Therefore, the trade retransmission should be used to update the status of each trade that is resent, to complete trades not already taken into account, and even in certain cases, to indicate that some trades should be removed.

Please refer to Book and Trades Retransmission to have all details on how retransmitted books and trades are.

In case of a MDG restart:

- Clients have to use the "Packet Flags" field (bits 1 to 3) to maintain a unique Packet Sequence Number for the trading day.
- On real-time channels the Market Data Sequence Number (MDSN) is reset to 0 and first functional message that MDG receives gets MDSN 0 and higher.
- Messages that will be sent in snapshots, while there is no message to be resent in real time, will have a MDSN set to "0" (so several messages inside a snapshot can share the same MDSN).
- Clients need to take into account that the Last Market Data Sequence Number (LMDSN) in first Start and End Of Snapshot messages are set to '0' and not set to 'null' as at start-up of MDG.

- Disaster Recovery Site

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In order to mitigate any serious outage in the primary data centre, a secondary data centre is online in standby mode.

Clients should ensure that all configurations surrounding the secondary data centre are included, as described in the **Euronext Optiq Market Data Gateway Production** and **External User Acceptance Environment** documents.

- Client System Failure

Real-time and snapshot market data will be available on two different multicast groups and will allow clients the possibility to set up more than one receiving system processing the same data. In case of client system failure, the backup client system should continue to process the real-time and snapshot data sent on the second multicast group.

TRADE RETRANSMISSION

Trade retransmission will only be used in case of HA event recovery and will be sent on the real-time channels. The retransmission will always start with the "Technical Notification" message (1106) with "Technical Notification Type": "Trade Retransmission Start" (10) and contains the "Retransmission Start Time" and the "Retransmission End Time" fields. These times define a time window: all trades previously received with an "Event time" included in this time window must be considered invalid. A new "Full Trade Information" message (1004) with the "Rebroadcast Indicator" field set to "1" will be sent. The trade retransmission ends with the "Technical Notification" message (1106) and "Technical Notification Type": "Trade Retransmission End" (11).

Note: If for a time window that contains trade(s) on real-time feed but no "Full Trade Information" (1004) messages are rebroadcast in between the "Technical Notification" (1106) messages, then members have to remove the trade(s) received in real-time.

HEALTH STATUS MECHANISM

The Health Status messages will be broadcasted on all channels repeatedly during the day, from the time the Standing Data messages are broadcasted until the End of Day messages are sent. The Market Data Sequence Number for this message will be the last Market Data Sequence Number of the message sent by the aggregator of this channel (please be advised that this message can have been sent on another channel managed by this aggregator).

For aggregators and detailed description please refer to the section Market Data Sequence Number.

For Snapshot, please refer to: Technical messages in Snapshot channels.

PRODUCTION TIMETABLE

The **Timetable** is an overview of the events during a trading day that impact market data activity. Clients should also refer to the "Timetable" message (1006) specifications for full details.

Euronext Cash and Derivatives Markets

EVENT	TIME (CET) FOR CASH	TIME (CET) FOR DERIVATIVES	COMMENT
File Download (except for Indices)	2:00 am CET		Clients will connect via HTTPS to download: XML SBE templates, Standing Data files, Timetable files, Tick tables, Reference Spread, Feed configuration files and Pattern ID files
Application start-up	2:00 am CET		Sending Start Of Day (1101) messages and frequently repeated (with Rebroadcast Indicator set to "1") until the beginning of the Standing Data emission in the morning.

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EVENT	TIME (CET) FOR CASH	TIME (CET) FOR DERIVATIVES	COMMENT
Standing Data and Timetables in the feed (except for Indices and forex)	3:00 am CET		The Exchange will send Standing Data (1007) messages for each instrument and on all markets except Forex instrument it will be send by file, and ISE IBF, BF Instrument Reference (1201) messages for ISE IBF only, followed by the Timetable (1006) message for Cash markets only.
Book Retransmission	4:00 am CET		Retransmission of books and associated messages from previous day. This will contain Market Update (1001) or Order Update (1002) messages and for some instruments the Price Update (1003) messages.
Indices files and messages sent	6:00 am CET		Clients will have access to Indices standing data on EFS and received them in the feed.
Broadcast Indices	7:00 am CET		Start of Indices emission in the feed.
Market Status Change	All along the trading session	All along the trading session	Follow the trading timetable as scheduled in the Timetable message (1006). Refer to Trading Day Schedule: Timetable Mechanism section for full details.
Closing and Daily Settlement	NA	Between 5:30 and 9:58 pm CET	
Optiq MDG system close	11:00 pm CET		The market closes on the End Of Day message (1102) emission. It will be sent for 15 minutes with snapshot messages. No other messages will follow for a given trading Day.

Euronext APA and Euronext Synapse Facilities

EVENT	TIME (CET) FOR APA	TIME (CET) FOR EURONEXT SYNAPSE	COMMENT
Application start-up	2:00 am CET		Sending Start Of Day message (1101) and frequently repeated (with Rebroadcast Indicator set to "1") until the first functional message is sent out.
Trading hours start-up	Not Applicable	9:00 am CET	Time when Euronext Synapse functional messages can be received.
Trading hours closing	Not Applicable	5:30 pm CET	Time when Euronext Synapse functional messages are not possible anymore.
Optiq MDG system close	11:00 pm CET		The market closes on the End Of Day message (1102) emission. It will be sent for 15 minutes with snapshot messages. No other messages will follow for a given trading Day.

MULTICAST GROUP UNJOINING

The process of subscribing to a multicast group ID is also known as "joining" a multicast group. Upon session termination, the client's host system should issue an "unjoin" message. This will terminate delivery of data to that host's local network.

If a client application terminates without issuing an "unjoin" message, the network will eventually issue a "timeout" for the multicast group subscription that will automatically terminate delivery of the multicast packets to the host's local network.

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The “join” and “unjoin” processes are standard functions. No specific instructions are provided here, as they are specific to the user’s operating system and programming language.

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MESSAGING PROTOCOL

OVERVIEW

MDG messages will be sent within a Market Data Packet that will be broadcast using multicast UDP/IP standards. A Market Data Packet will be composed of N complete messages. A single message will never spread across multiple packets.

The maximum length of a packet is 1400 bytes and does not include UDP/IP protocol fields.

Each message is enriched with a "Frame" field followed by a SBE header. The "Frame" field contains the length of the message including the length of the "Frame" and "SBE header" fields. The following diagram shows the structure of a packet:

<table>
<tr><th colspan="11">IP</th></tr>
<tr><td rowspan="3">Header IP</td><th colspan="10">UDP</th></tr>
<tr><td rowspan="3">Header UDP</td><th colspan="9">PACKET</th></tr>
<tr><td rowspan="3">Market Data Packet Header</td><th colspan="8">1ST SBE MESSAGE</th><th>NEXT SBE MESSAGE(S)</th></tr>
<tr><td rowspan="2">Frame</td><td rowspan="2">SBE Header</td><td rowspan="2">Block</td><td colspan="5">Repeating Section 1</td><td>…</td></tr>
<tr><td>Repeating Section Header</td><td>Rep. Sec. 1.a</td><td>Rep. Sec. 1.b</td><td>…</td><td>Rep. Sec. 1.n</td><td>…</td></tr>
<tr><td>n bytes</td><td>8 bytes</td><td>16 bytes</td><td>2 bytes</td><td>8 bytes</td><td>n bytes</td><td>2 bytes</td><td>x_1 bytes</td><td>x_1 bytes</td><td>…</td><td>x_1 bytes</td><td>…</td></tr>
</table>

Client applications should check that the length of the Market Data Packet (indicated in the UDP datagram) matches $16\ bytes\ (Packet\ Header\ size) + \sum message\ size\ (indicated\ in\ the\ Frame\ field)$. If the length of the packet doesn't match the identified length, then the packet should be considered corrupted.

A message can contain n repeating sections for a trading event, but clients should not base algorithms on repeating sections since these repeating sections can also be in n messages.

MARKET DATA PACKET HEADER

The packet header is described below:

FIELD	DESCRIPTION	FORMAT	LENGTH	VALUES	PRESENCE
Packet Time	Time when the packet is pushed to the clients (Time in number of nanoseconds since 01/01/1970 UTC).	Epoch Time in Nanoseconds	8	0..2^64-2	Mandatory
Packet Sequence Number	Each channel has its own PSN sequence. Starting from 1 at every MDG start and increasing by step of 1. In case of overflow (over 4.2 billons) Packet Flags will increase for bits 4-6. With this mechanism the PSN has 35 bits available.	Numerical ID	4	0..2^32-2	Mandatory
Packet Flags	- Used to flag information (Little-Endian): Bit 0: Compression - 0 = body of the packet is not compressed (the body is the packet without the packet header) - 1 = body of the packet is compressed - Bit 1 to 3: will be set to 0 every morning and incremented for each restart of MDG in the same day (wrapping to 0 if the field overflows)	Numerical	2	0..2^16-2	Mandatory

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FIELD	DESCRIPTION	FORMAT	LENGTH	VALUES	PRESENCE
	- Bit 4 to 6: used if the Packet Sequence Number (PSN) goes over (2^32)-1. They are PSN high weight bits - Bit 7: is set to 1 when in the packet there is a Start Of Snapshot (2101) message, 0 otherwise - Bit 8: is set to 1 when in the packet there is an End Of Snapshot (2102) message, 0 otherwise - Bit 9: is set to 1 when in the packet there is a Health Status (1103) message, Start Of Day (1101) message or End Of Day (1102) message, 0 otherwise Bit 10 to 15: for future use				
Channel ID	Identifies the channel.	Numerical	2	0..2^16-2	Mandatory

Client applications should check that the length of the Market Data Packet Body matches the sum of message sizes (indicated in the Frame field). If not, then the packet has to be considered corrupted.

The Market Data Packet Body size is also the:

- UDP datagram payload size minus 16 bytes for Packet Header size
- Uncompressed body size if the packet was compressed

Note: The Packet Header will not be compressed in compressed messages.

SBE MESSAGE STRUCTURE

A Market Data message is composed of the following parts:

SBE MESSAGE STRUCTURE								
Frame	SBE Header	Block	Repeating Section 1					…
			Repeating Section Header	Rep. Sec. 1.a	Rep. Sec. 1.b	…	Rep. Sec. 1.n	…
2 bytes	8 bytes	n bytes	2 bytes	x_1 bytes	x_1 bytes	…	x_1 bytes	…

The maximum length of a message is 1384 bytes (maximum packet length (1400 bytes) minus the packet header length (16 bytes)).

The SBE Header is defined as follows:

FIELD	SHORT DESCRIPTION	FORMAT	LEN	VALUES	PRESENCE
Block Length	Length of the block. The Block is the message without the repeating sections.	Numerical	2	0..2^16-2	Mandatory
Template ID	Identifier of the message template. This is the message type of the Market Data messages.	Numerical ID	2	0..2^16-2	Mandatory
Schema ID	Identifier of the message schema that contains the template. Used to differentiate Exchange Specifications.	Numerical ID	2	0..2^16-2	Mandatory
Schema Version	Version of the message schema in which the message is defined. Used to add messages and/or modify some others.	Numerical ID	2	0..2^16-2	Mandatory

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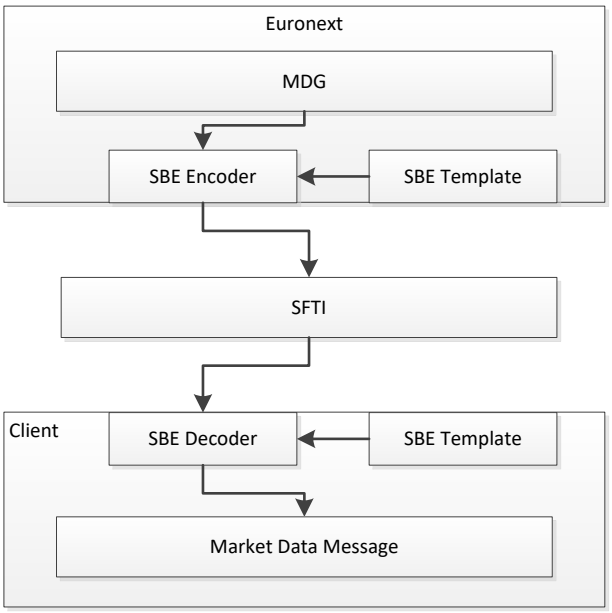
The Repeating Section Header is defined as follows:

FIELD	DESCRIPTION	LENGTH	VALUES
Repeating section header	Defines how many times the repeating section is repeated and the length in bytes of a repeating section. It is set to "0" if there is no repeating section.	2 bytes (the first byte for the length and the second byte for the count)	From 0 to 254 for both

A Schema ID is composed of Template IDs (or message types) and each Template ID has its own Schema version (message version).

Please note that the SBE Header and Repeated Section Header must be present on the wire for each message (SBE Repeated Section Header only for messages that have a repeated section), but for readability purpose it is not represented in the message structures in this document.

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



SBE BACKWARD AND FORWARD COMPATIBILITY

The aim of backward and forward SBE compatibility is to allow members to choose to update to the latest SBE version or remain in previous versions.

To do so, the main element is the SBE version provided in SBE Template file. This SBE version is in the attribute: "version". In addition, each change on message, field or possible value (for enumerated or bitmap) in the SBE Template file, are flagged with attributes:

- SinceVersion for additions
- deprecated for removals

Each of the above attributes will be set with the value of the SBE version when the change occurred. As such their value cannot be greater than the SBE version.

It is crucial for members to check for each new SBE Template if the compatibility is insured and until which version in order to update if necessary.

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These compatibilities are not ensured for the following situations:

- New field added wherever, except if added at the end of the block or a repeated section
- Existing field length changed
- Field, message or possible value name changed
- For enumerated field, if the value is changed (example: in field "EMM", value Not Applicable changes from 254 to 99)

The following describes the mechanism for each compatibility:

- New field compatibility

Consider SBE version is set to 5.

If in a message a field has been added at the end of the block and before the repeated section with "sinceVersion = 5" then members that are not interested by this new field can ignore it.

To ignore it, members are using the SBE Version 4 (or lower) that has not this new field. Therefore, the block length in the SBE header does not include the field added in version 5. Then SBE Decoder when processing the new message will process all fields inside the block length in SBE version 4 and ignore the new fields in version 5 to continue processing the message with the repeated section header.

Same logic is used for field added at the end of the repeated section. The length of the repeated section is in the Repeated Section Header and it is not the same size between version 4 and 5.

- New possible value compatibility

If a new possible value is added in SBE version 5, it will be flagged with "sinceVersion = 5". Members that are not interested by this new possible value will potentially receive this new value but will have to define a specific behaviour. They can for example ignore it.

- New message compatibility

In case a new message is created and until the member wants to use it by updating the SBE version, this message will be ignored.

- Removals

The field or message or possible value will still be sent with a consistent value in order to ensure the compatibility and will be flagged with the attribute "deprecated".

Note: In case Euronext breaks the SBE compatibility, client will be made aware in timely manner.

For the more in depth detailed explanation of Euronext implementation of the SBE protocol, clients are invited to refer to the dedicated Optiq Notice : SBE Template Introduction and Compatibility Rules

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MESSAGE OVERVIEW

TECHNICAL FORMAT FIELDS

The field formats contained in the messages will adhere to these rules:

- Binary data is in Intel byte order (Little-Endian).
- All integers are unsigned numeric or signed binary using two's complement method.
- All message fields are sent for every message. Only the field values will be broadcast (field names in this document are only for reference purpose).
- All field sizes are fixed and constant.
- Segmentation of messages across packets is not supported, so a message will never straddle a packet boundary.
- Even if it is not always mandatory to be able to process last message version (Schema Version), it is mandatory to check each update for important or regulatory updates.

NULL VALUES

- SBE allows optional fields with a null value. The applicable NULL value is defined in the SBE Template file. In message and field specifications, only the not null values are indicated in the "Values" column.
- All text fields (Text and Alphanumerical Id that have more than 1 character) have a specific null value that is not defined in the SBE Template. This null value is binary 0 (/0) for each character.
- All "Alphanumerical ID" and "Text" fields are alphanumeric based on UTF-8, left aligned and null padded (\0).

FORMAT FIELDS	DESCRIPTION	NULL VALUE
Alphanumerical ID	String type identifying an element, left aligned and completed with null padding (\0).	Each character is a UTF-8 null code point (\0)
Amount	Signed or unsigned numerical field representing the price multiplied by the quantity. See the description in Price, Quantity, Ratio And Amount Formats.	Null value defined in SBE Template
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 Trade Qualifier bitmap field if its bit in position zero (0) is set to one (1) then it defines the trade as an Uncrossing Trade. At the same time bit in position one (1) can also be set to one (1) which will in this case indicates that this is also a First Traded Price.	No null value
Boolean	This field acts as an enumerated field with the possible values 0 (false), 1 (true) or null value.	Null value defined in SBE Template
Date	Date of an event (in number of days since 01/01/1970 UTC - 01/01/1970 is the day "0").	Null value defined in SBE Template
Decimal Places	Number of decimals associated to a numerical field. See the description in Price, Quantity, Ratio And Amount Formats.	Null value defined in SBE Template
Enumerated	Information having a delimited set of possible values.	Null value defined in SBE Template Note: The null value here depends on the technical type which can be unsigned integer or character.
Epoch Time in Nanoseconds	UTC Timestamp indicating the number of nanoseconds since epoch (January the 1st 1970).	Null value defined in SBE Template
Integer Time in hhmmss	UTC Timestamp using an integer to define the time as hhmmss.	Null value defined in SBE Template
Intraday Time in Seconds	UTC Timestamp indicating the number of seconds since the beginning of the day.	Null value defined in SBE Template

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FORMAT FIELDS	DESCRIPTION	NULL VALUE
Numerical	Generic numerical field on unsigned integer.	Null value defined in SBE Template
Numerical ID	Numerical field identifying an element.	Null value defined in SBE Template
Price	Signed numerical field representing a price. See the description in Price, Quantity, Ratio And Amount Formats.	Null value defined in SBE Template
Quantity	Unsigned numerical field representing a quantity of elements (for example a number of shares). See the description in Price, Quantity, Ratio And Amount Formats.	Null value defined in SBE Template
Sequence	See the description in §0 - Sequence Numbers.	Null value defined in SBE Template
Signed Numerical	Generic numerical field on signed integer.	Null value defined in SBE Template
Text	Text in UTF-8, left aligned and completed with null padding (\0).	Each character is a UTF-8 null code point (\0)

DATE AND TIME CONVENTIONS

Times and Timestamps are expressed in UTC (Universal Time, Coordinated) and are synchronised using Precision Time Protocol (PTP). They are defined in number of nanoseconds since 01/01/1970 UTC based on Unix Epoch or number of seconds since the beginning of the day.

Phase Time and Scheduled Event Time for Cash markets are expressed in an unsigned integer 32 to define a time in hhmmss UTC. Thus, this time is in the range from 0 to 235 959. Each time 60 (seconds) is reached, it increments the hundreds by 1 and seconds are reset to 0. The same applies every 60 minutes (or for each increment of a second when we have 59 minutes and 59 seconds), system increments the 10 thousands by 1 and reset all the inferior figures to 0.

Example: if we have 25959 (2h 59m 59s), the next second will be 30000 (3h 0m 0s).

Dates are defined in number of days since 01/01/1970 UTC (01/01/1970 is the day "0").

Dates and Times formatted for ESMA reporting (EU MiFID II and onshored UK Regulation) are defined with a 27 bytes character string following ISO 8601:

YYYY-MM-DDThh:mm:ss.dddddd**Z**.

Where:

- "YYYY" is the year.
- "MM" is the month.
- "DD" is the day.
- "T" is a constant letter used as a separator between "YYYY-MM-DD" and "hh:mm:ss.dddddd**Z**".
- "hh" is the hour.
- "mm" is the minute.
- "ss.dddddd" is the second and its fraction of a second.
- "Z" is a constant letter standing for UTC time.

SEQUENCE NUMBERS

The feed contains two sequence numbers:

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The Packet Sequence Number (PSN)

The Packet Sequence Number (PSN) is part of the packet header and should be used for UDP gap detection and packet ordering. Each channel has its own PSN sequence.

The Market Data Sequence Number

Aggregators are MDG internal components that are dealing with a set of channels. The Market Data Sequence Numbers are managed at the aggregator level. Each one of them has its own sequence, starting from 0 and incrementing by step of 1 along the day. Since clients may listen to only a subset of the channels managed by one aggregator, they will not see all the Market Data Sequence Numbers in the messages they get from the channels they listen to. Therefore, on one channel the Market Data Sequence Numbers will increment all along the day but not necessarily by step of 1.

The behaviour of the Market Data Sequence Numbers for the following messages is different. Please refer to their message definition for further explanations:

- "Start Of Day" (1101)
- "End Of Day" (1102)
- "Health Status" (1103)

Reminder: For gap detection: please use the Packet Sequence Number (PSN).

PRICE, QUANTITY, RATIO AND AMOUNT FORMATS

All prices must be processed with two values: the price value in an integer and its scale code. Each instrument must be linked to the associated Price / Index Level Decimals from the Standing Data message or file.

Prices must be calculated according to the following formula:

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

For example, a price of 27.56 can be represented by an Integer of 275600 and a Price / Index Level Decimals of 4.

Only 2 prices are not using the generic field above: "Issue Price" and "Strike Price". Since these fields have decimals computed instrument per instrument, they have a dedicated decimal location field that are respectively: "Issue Price Decimals" and "Strike Price Decimals".

Note 1: The same mechanism is used for:

- All quantities that are calculated with Quantity Decimals[4]
- All ratios and percentages with Ratio / Multiplier Decimals
- All amounts with Amount Decimals

Note 2: Prices, quantities and amounts for EU and UK MiFIDII do not follow this Price / Index Level Decimals behaviour. The complete format is described in the Field Description.

TRADING DAY SCHEDULE: TIMETABLE MECHANISM

A trading day (or business day) is a day when the Exchange is open and allows buying and selling financial instruments. A trading day cannot span several calendar days. Typical trading days are Monday through Friday. Non-trading days are the weekends and some holidays.

[4] Please see exceptions for fields like Leg Ratio

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Trading Cycle

During the trading day, financial instruments are traded following a **trading cycle**, which is the sequencing of market transitions (up to 30) and market events scheduled at precise times within a defined duration.

- Market transition

A market transition is the triggering of a new Market Phase. Market phases that can be scheduled in a trading cycle are the following:

- 'Inaccessible': no access to the market, typically at the beginning of a trading day and between two trading days; Equivalent to a 'down' status of the trading chain;
- 'Closed': the market is fully available for Market Operations, who can perform consistency checks and other operations; Market participants can modify and cancel their orders (no order creation) on Derivative markets and cancel only on Cash markets;
- 'Call': the market is available to market participants and orders are collected without matching; some information is broadcast, such as the best bid/offer prices (BBO), the Indicative Matching Price (IMP);
- 'Uncrossing': the matching engine applies an uncrossing algorithm were crossed orders (i.e. bid orders with prices higher than offer orders) are matched;
- 'Continuous': entering orders are matched as soon as a counterpart can be found.

- Market Events

Market Events provide specific information to market participants, such as the expiry time of an instrument.

There are two types of market events:

- Market events explicitly configured within the trading cycle pattern;
- Market events triggered by Market Operations or the trading engine itself (out of scope).

- Link between a product and its Trading Cycle

Each product (respectively a cash instrument or a derivative contract) is linked to a Trading Cycle indicating the sequence of market transitions and market events. The Trading Cycles are identified by a field provided in referential data: Pattern Identifier. It is available either in on the feed through respectively Standing Data (1007) and Contract Standing Data (1013) message, or on EFS through Standing Data files. The timetables themselves are provided in a dedicated EFS file - Timetable File (1006).

Broadcast Information

- Start of trading day

At the beginning of the Trading Day and before traders start sending any orders, the Matching Engine generates and broadcasts:

- A "Timetable" message for each trading cycle pattern indicating for each pattern ID the sequence of market phase transitions and market events to be triggered for the coming trading day;
- A "Market Status Change" message for each Contract/Instrument which was in a Suspended status or whose order entry rejection flag is set to "0" (Order entry, modification and cancellation forbidden) to indicate to Market Participants that the Instrument cannot be traded.

- Throughout the trading day

Throughout the trading day, the Matching Engine generates:

- A "Timetable" message each time Market Operations modify the trading cycle of a contract;
- A "Market Status Change" message at the time of the transition for a derivatives contract from one market phase into another one;
- A "Market Status Change" message at the time of the transition for a derivatives instrument from one status into another one (in case the Derivatives instrument does not follow anymore the contract phase)
- A "Market Status Change" message at the time of the transition for a cash instrument from one status into another one.
- A "Market Status Change" message whenever market events are scheduled, triggered or cancelled.

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INSTRUMENT TICKS

- Link between a product and its Tick Table: :

Each product (respectively a cash instrument or a derivative contract) is linked to a Tick table indicating for each price range the ticket applied in Optiq. The tick tables are identified by a field provided in referential data: Tick Size Identifier. It is available either in the feed through respectively Standing Data (1007) and Contract Standing Data (1013) messages, or on EFS through Standing Data files. The tables themselves are provided in dedicated EFS files (respectively **Cash Tick Size Referential** File and **Derivatives Tick Size Referential** File).

Note: Settlement Tick Sizes and Exchange Delivery Settlement Prices Tick Sizes are still provided independently from the tick size in derivatives referential data, as indication of the parameters used for the computations of the settlements.

INSTRUMENT IDENTIFIERS

An instrument is identified by its **Symbol Index**, **ISIN** and/or the **AMR** (for the Derivatives) for all Optiq messages while it is identified by its **MiFID Instrument Id** for **A**pproved **P**ublication **A**rrangement (APA) MDG messages (EU and UK MiFID II Regulatory publication Tool)

Symbol Index

The Symbol Index is assigned by the exchange and will not change over the lifetime of the instrument, nor used again after instrument expiration.

Any Corporate Action leading to a change of ISIN will lead to change of Symbol Index. 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 Euronext Corporate Action notices.

The standard security identifier (for example ISIN), mnemonic, tick size, instrument name and other instrument characteristics are carried only in the Standing Data message (1007), Outright Standing Data (1014), Strategy Standing Data (1012), Contract Standing Data (1013) messages and in the Standing Data files on servers. As such, the client applications must link the Symbol Index which is sent in all messages, with other instrument characteristics present in the Standing Data messages or files.

Automated Market Reference (AMR)

The AMR Code remains in the referential data for the Derivatives to allow clients to map it to the Symbol Index used in trading in Optiq. The AMR Code is built from the following template and only applicable for Derivatives:

INSTRUMENT ATTRIBUTE	DESCRIPTION	EXAMPLES
Exchange Code	Code used to identify the Market Place upon which the product is listed	P: Paris Equity J: Paris Index
Generic Contract Type	Code to identify the type of contract	F: Futures O: Options
Contract Code	Code assigned to identify the contract (4-char Code)	FCE: CAC40 Index TO1: Total SA
Expiry	Expiry date indicating the expiry Format for all contracts: Year & Month (YYMMDD) "YY" is the last number of the year "MM" is the month code (as defined in the table below) "DD" is the exact business day of the month	
Exercise Price	Exercise (Strike) price assigned to the option (Option only)	
Instrument Type	Code to identify type of Derivative Instrument	F: Futures C: Call P: Put

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The following table provides the Month codes:

EXAMPLES:
POTO1 250418043000 Total Call Option – April 2025 – Expiry day on the 18th - Strike 43€
JFFCE 250516000000 CAC 40 Index Future – May 2025 – Expiry Day on the 16th

- AMR & Max Strike Price Limit

Exercise price field in the AMR is 5 characters long. In order to represent strikes with decimals, and that require more than 5 characters to be represented, Euronext uses a rule for encoding the strikes, which takes Strike Price Decimals Ratio into calculation as described below.

For contract of type option:

- Compute price = Exercise price/ 10^Strike Price Decimals Ratio
- If the exercise price is strictly less than 10000:
  - the 5 characters are the price left padded with '0'
- If the exercise price is greater or equal than 10000:
  - the first character is a character representing a multiple of 10000 (10->A, 11->B, ...35->Z)

the last 4 characters, are the price modulo 10000 left padded with '0'

New rule for AMR code – To be activated at a later date

Due to the need to have the possibility to have strike prices with 4 decimals on Borsa instruments the current AMR code was not compatible unless the number of digits was increased. To avoid this, the AMR codification was modified according to the following rules:

- The Expiry is truncated and only has the year and month.
- The expiry day is encoded in order to have it in 1 character.
- The Strike Price number of decimals is added by replacing the remaining character of the expiry day

The details are below:

Instrument attribute	Description	Attribute length (char)	Example
Exchange code	Code used to identify the Market Place upon which the product is listed	1	P - Paris Equity J - Paris Index
Contract Type	Code to identify the type of contract	1	F- Futures O - Options
Contract Code	Code assigned to identify the contract	4	FCE - CAC40 Index TO1 - Total SA 1FIB - ITA Index Future FIB
Expiry	Expiry year and month Format for all contracts: YYMM - "YY" is the last number of the year - "MM" is the month	4	230421 – 2023, 21st April Expiry = 2304
Expiry Day code	Expiry day to be encoded : - Days from 1 to 9 : number 1 to 9 - Days from 10 to 31 : letters in alphabetic order : A, B, …, V	1	230421 – 2023, 21st April Expiry Day code = L
Strike Price number of decimals	Strike price number of decimals	1	4 0 if future
Strike Price	Strike price of the option	5	
Instrument Type	Code to identify type of Derivative Instrument	1	F - Futures C - Call P - Put

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Examples:

Instrument description	Strike Price Denominator	Current AMR code	Target AMR code
ITA Index Future FIB – 2023, March 17th - Milan Index	N/A	IF1FIB23031700000F	IF1FIB2303H000000F
TOTAL Call Option – 2025, April 18th - Strike 43€ - Paris Equity	100 – So Strike Price number of decimals is 2	POTO1 25041804300C	POTO1 2504I204300C

MiFID Instrument ID

Field "MiFID Instrument Id" is used as unique instrument identifier for APA messages.

It has to be used with field "MiFID Instrument Id Type" which indicates if the identifier provided in "MiFID Instrument Id" is an 'ISIN' or another identifier (value 'OTHR').

The referential has to be used by clients to match the ISIN or OTHR instrument identifier with instrument characteristics to uniquely identify this instrument.

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HOW TO …

… PROCESS CANCELLATIONS

1.1.2 Trade Cancellation

The trade will be cancelled with all the details of the trade in:

- Market Update (1001) message with Market Data Update Type "50 – Trade Cancellation". It will not be possible from this message to make the link with the original trade.
- Full Trade Information (1004) with Trade Type "24 – Trade Cancellation" and MMT Modification Indicator "CANC – Trade Cancellation". All other fields will be set with original trade details including the MiFID Execution ID field which allows client to easily identify the trade cancelled for this Symbol Index.

Note: In case of MDG for APA, the MiFID Execution ID becomes irrelevant. Identification of a trade cancelled is done by using the MiFID Transaction ID field.

1.1.3 Quote Cancellation

The behaviour is the same as Trade Cancellation except for APA.

In case of MDG for APA, the Cancelled quotes are sent in APA Quotes (1026) per instrument with field Quote Update Type values:

- "5 – Cancel Bid" for the quote bid side of the concerned Legal Entity Identifier (LEI).
- "6 – Cancel Offer" for the quote ask side of the concerned Legal Entity Identifier (LEI).

1.1.4 Order Cancellation with Order Update message

For an order deletion an Order Update (1002) message is sent with a Market Data Action type set to "2 - Deletion of order identified by Previous Priority" with the Previous Priority set to identify the order to remove from the book. Price and Order Priority will be set to the null value and quantity set to '0'. Order side and order type will be populated according to the deleted order.

1.1.5 Limit Cancellation with Market Update message

In the Market Update message, if there is no more volume for a given price, the limit will be updated with an "Updated Bid" or "Updated Ask" with the quantity set to '0'.

If the BBO has no more volume, then it will be updated with a "Best Bid" or "Best Offer" with quantity set to '0'. If the book side is empty, the BBO will be sent with Price set to null according to the SBE protocol and quantity '0'. It will be followed by a limit update with the price of the limit to update and quantity set to '0'.

…PROCESS MODIFICATIONS

This process is provided only in case of Euronext APA and Euronext Synapse facilities.

1.1.6 Trade Modification

The trade will be cancelled with all the details of the trade in APA Full Trade Information (1028) with:

- Same MiFID Transaction ID as the first one
- Trade Type "24 – Trade Cancellation"
- Efficient MMT Modification Indicator "CANC – Trade Cancellation".

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And a new trade is sent with:

- Efficient MMT Modification Indicator set to "AMND – Trade Amendment"
- Trade modifications
- Same MiFID Transaction ID as the new and cancelled trade.

Quote Modification

Each quote modification is outbound using same update types. Therefore clients have just to replace previous quote per LEI, instrument and side with the new one.

… DETERMINE THE MESSAGE TYPE

Each message has a type that uniquely defines its structure and its content, and is represented by a numeric identifier.

First example, the message "Market Update" has the type "1001". In the SBE message header the "Template ID" field contains this type (see SBE Message Structure).

Second example, the message "APA Full Trade Information" has the type "1028". In the SBE message header the "Template ID" field contains this type (see SBE Message Structure).

… DETERMINE THE NUMBER OF REPEATING SECTIONS IN A MESSAGE

The number of repeating sections is defined in the second byte of the "Repeating Section Header" (see SBE Message Structure).

… DETERMINE THE LENGTH OF A PACKET

The length of the packet is set in the UDP header. It includes the UDP header length.

… DETERMINE THE LENGTH OF A MESSAGE

The length of a message (including the length of the "Frame" and "SBE header" fields) is in the field "Frame" (see 4.1 - Overview).

… MANAGE A NEW VERSION OF A MESSAGE IF THE CLIENT HAS NOT IMPLEMENTED THE NEW FIELDS

Please refer to the explanations in the paragraph SBE Backward and Forward Compatibility.

… LOOK FOR A TRADE

This is possible by checking in Full Trade Information message (1004) the MiFID Execution ID field. It is the association of Symbol Index, EMM and Execution ID completed with null on the right to complete until the 52 bytes of the field are filled.

Note: In case of MDG for APA: it is possible by checking in APA Full Trade Information message (1028) the MiFID Transaction ID field. It is the association of ISIN code or OTHER number, Venue, Transaction Identifier and Trading Date completed with null on the right to complete until the 52 bytes of the field are filled.

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… LOOK FOR AN ORDER

For a given Symbol Index and EMM, the order can be found using its Order Priority that uniquely identifies an order. This value is given in the "Ack" message sent by Order Entry Gateway (OEG).

Since updated orders might have a loss of priority, members have to use Previous Priority field to find the order in the book. Previous Priority, when set, has to be matched with Order Priority in the existing orders.

… RESYNCHRONIZE WITH SNAPSHOT AFTER PACKET LOSS

Please refer to the explanations on the Snapshot: Snapshots.

… MANAGE BBO

Best Bid and Offer (BBO) updates are sent with a price and a quantity to indicate the best limit on bid or offer side. When the Best Bid or Best Offer changes, a new Best Bid or Best Offer update is sent out and replaces the previous sent Best Bid or Best Offer. If a side of the book becomes empty, then a Best Bid or Best Offer is sent with quantity set to 0 and price set to null to clear the Best Bid or Best offer.

… DERIVE IMPLIED PRICES VOLUME FROM THE AGGREGATED BBO

Implied price volumes are included in the Market data messages communicated for the associated price level. As implied are not considered as orders the associated Implied prices are displayed on the market only if they contribute to the Best Limit.

When an implied price contributes to a limit, the volume available on the market at that price increases without incrementing the number of orders. This logic allows client to distinguish volumes of implied prices vs. those of explicit orders. As such it is possible to have a Best Limit displayed with price and volume but with a number of orders equal to zero (when relying exclusively on implied prices).

Implied prices and volume are only provided at BBO in the messages with Market Update Type (1) and (2). The limit Market Update Type only include explicit volume.

… BUILD THE BOOK

Optiq Market Data provides market by limits (with Market Update messages (1001)) or by orders (with Order Update messages (1002)) depending on the instrument type.

- For markets built using aggregated limits (Market Update (1001)), clients have to order the limits by prices (only one price by line):
  - On a new bid or ask, clients must add the new limit
  - On an updated bid or ask, clients must update the current limit with the new limit. This update can be on the limit: type, quantity or number of orders.
  - On a limit deletion, clients will receive an update with quantity set to '0' and the price matching the limit to delete.
- For markets built using Order Updates (1002), clients have to arrange each order by its Order Priority (The order with the lowest value of Order Priority has the highest priority):
  - On a New Order, clients must add the new order identified by its Order Priority
  - On an order modification with loss of priority, clients must remove the order identified by the Previous Priority and add a new order identified by its Order Priority.
  - On an order modification without loss of priority, clients must update the order identified by its Order Priority.
  - On an order cancelation, clients must remove the order identified by its Previous Priority.

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Clients should not process both the BBO and limits to construct the book. If Best Bid and Offer updates are sent as a part of the same message, then they should be processed as one update to the BBO and not individually. Otherwise, the order book might appear crossed.

… DETERMINE A CLOSING PRICE

Closing Price is determined depending on the Closing Price Type defined at the instrument level, this setting is defined by the Exchange and shared with members through the **CashStandingDataFile** (9007);

- Triggering of the computation of the closing price is broadcasted to the market through the **Market Status Change** (1005) message with a dedicated *Scheduled Event* value '16' (Closing Price);
- Closing Price value is communicated through the **Price Update** (1003) message and flagged by a dedicated *Market Data Price Type* '33' (Closing Price);
- On top of the Market Data Price Type, members must also use the new *Price Qualifier* field to determine the exact source of the closing price value broadcasted in the *Price* field.

Example: if a given instrument has the *Closing Price Type* set to '1' (Last Traded Price) but there were no trades for that instrument during that trading day, then the closing price is set to the Last Adjusted Closing Price value. In this case, the **Price Update** (1003) message is sent with *Price* field set to "LACP" value, *Market Data Price Type* field set to '33' (Closing Price) and the *Price Qualifier* field set to '1' (Last Adjusted Closing Price);

… DETERMINE THE OPTION UNDERLYING EXPIRY

If the Underlying Type is an Index or a Commodity (F or C), the field Underlying ISIN Code is populated at contract level. Additionally, underlying Expiry at Contract Level is set to null. The actual alternate underlying is populated at outright level:

- Index future expiry the underlying is an index
- Commodity future expiry the underlying is a commodity

AMR and SymbolIndex of the future expiry is provided at the outright level. This will allow customers to look-up the AMR to find the underlying future expiry.

… DETERMINE ROUND LOT WITH QUANTITY NOTATION

In order to determine the Round Lot, clients have to consider field Quantity Notation as follow:

- If Quantity Notation is equal to 'UNT' then Round Lot equals Lot Size.
- If Quantity Notation is equal to 'FMT' then Round Lot equals Par value
- If Quantity Notation is equal to '-'then Round Lot equals 1.

It is important for Par Value to apply the decimal field associated.

…USE AN EXECUTION SUMMARY MESSAGE

Execution Summary is a mechanism made available for Cash (Warrants and Block excluded) and Derivatives segments to provide a quick and efficient way for clients to make decisions on remaining state of the order book after an aggressive order execution.

Execution Summary is published in MDG using the Market Update (1001) messages, indicating the Total executed quantity (no matter how many price levels the aggressive order has executed against), and the Last (or deepest into the book) price that the aggressive order has executed against.

The sequencing of this broadcasting is the following:

- Execution summary:
  - Last price hit by the aggressive order

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- Total executed quantity
  - Trades
  - BBO
  - Full depth of the book

Execution Summary is indicated using two Market Data Update Type values:

- '90' – Bid Execution Summary
- '97' – Offer Execution Summary

As the Execution Summary is always sent first following execution of a Trade upon reception of this message clients can anticipate the upcoming limit update on the resting side of the execution.

Technically, Execution Summary is sent as soon as possible, i.e. the market data packet is sent immediately once the event received.

…DETERMINE THE STATISTICS ON AND OFF-BOOK FOR AN INSTRUMENTS (COB, WHOLESALES & RFC)

Optiq Provides daily aggregated volume to the market through the dedicated Statistics (1009) messages. This section aims to describe how to reconcile the provided statistics with the trade published on Market Data through the Full Trade Information (1004) or Market update (1001) message.

- On Exchange On Book Update Type

This Statistic is the aggregated volume executed on-book. It is computed on a per instrument symbol index basis and is equal to the sum of all trades disseminated on the Central Order Book during the day through both Full Trade Information (1004) and Market Update (1001) messages.

- On Exchange Off Book Update Type

This statistic is the aggregated volume executed off-book. It is computed on a per Instrument level and is equal to the sum of all trades executed through either the Wholesale or the RFC facility during the day.

Trades in case of Wholesales (Against Actual, Exchange for Swap or Large in Scale transaction) are published via Full Trade Information (1004) message only – not via Market Update (1001).

It is equal to the sum of:

- The RFC trades (dedicated trade type) disseminated following an RFC through both Full Trade Information (1004) or Market Update (1001) messages
- The LIS, AA and EFS Trade volume disseminated through 1004 messages
- The residual volume of a LIS Package Trade wholesale transaction to which this instrument contributes, disseminated through either the *Leg Last Traded Quantity* field in the LIS Package Structure (1016) or either computed by using the Full Trade Information (1004) – sent at contract level and indicating the Instrument Symbol Index in the dedicated repeating group.

  This residual volume is computed as follows: volume of the wholesale transaction multiplied by leg weight as identified by the strategy definition in the related LIS Package Trade (1016) message

$$Residual\ Volume\ (i) = TransactionVolume\ X\ Leg\ Ratio\ (i), i\ representing\ the\ symbol\ index$$

Example: in case of a LIS on a Butterfly on the CAC40 Option contract, with 3 options A, B and C,

where B= A-2B+C (*), with a volume of 125 lots:

- SymbolIndex of Full Trade Information Contract
- Strategy Code of the Butterfly
- Volume executed: 125
- SymbolIndex of A, B and C instruments

The residual volume on each instrument is then equal respectively for A, B and C to 125, 250 and 125 resulting from strategy volume X leg ration, where each leg ration is defined by (*).

The weights of each component are provided to the market via the dedicated LIS Package Structure (1016) message.

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As a consequence, the Statistics (1009) message are published immediately after the CAC40 Option (1004) message disseminated for the LIS transaction, increasing accordingly the aggregated volumes.

- On and Off-book On Exchange Update Type

This statistic is the aggregation of the two previous ones.

…DETERMINE THE TVTIC

The Trading Venue Transaction Identification Code (TVTIC) is the unique identifier of a trade in the EU and UK MiFID II framework. Each individual trade has a corresponding TVTIC. As a reminder, MiFID II reporting is at leg level.

The different ways to get a trade TVTIC are:

For Cash / Outright trades:

- Using the public Market Data feed, getting the *Trade Unique Identifier* in the **Full Trade Information** (1004) message;
- Using the private Order Entry feed:
  - In SBE **Fill** (04) or SBE **Declaration Notice** (42): getting the *Trade Unique Identifier;*
  - In FIX **ExecutionReport** (8) or FIX **TradeCaptureReportAck** (AR) : getting the *Regulatory Trade ID* with *Regulatory Trade ID Type* equals 5 (TVTIC);
- Retrieving the TVTIC field from the EOD Day Trade file (**FTRRM**).

For Strategies:

- Using the private Order Entry feed:
  - In SBE **Fill** (04): getting the *Trade Unique Identifier* in Strategy fields section to get the "Leg" Trade Unique Identifier;
  - In FIX **ExecutionReport** (8): getting the *Regulatory Trade ID* with *Regulatory Trade ID Type* equals 5 (TVTIC) where *RegulatoryLegRefID* equals the corresponding *Leg ID* in NoLegs section.

For APA Trades:

- Using the public Market Data feed, getting the *Trade Unique Identifier* in the **APA Full Trade Information** (1028) message.

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MESSAGES

TECHNICAL MESSAGES

The message specification format is as follow:

FIELD	DESCRIPTION	LENGTH
Block	The block is all the non-repeated fields.	Variable (in bytes)
Repeating section header	This is how many times the repeating section is repeated and the length of a repeating section. It will not be displayed in any below message. It is set to 0 if there is no repeating section.	2 bytes (1byte for the length 1byte for the count)
Repeating section	All the fields that are repeated. All these fields are in bold and green table borders	Variable (in bytes)

All field lengths are in bytes.

Field definition might not be exhaustive, please go to the Field Description section. Further details will be provided.

Start Of Day (1101)

These messages will be sent periodically until another MDG message is sent on any channel of an aggregator. After the Start of Day messages, the "Health Status" messages (1103) will be sent periodically.

This mechanism guarantees that "Start Of Day" (1101) messages are the really first messages sent by MDG.

Message Sending Rules: "Start Of Day" (1101) messages are sent every 2 seconds on each channel once the Market Data Gateway starts.

Note: Start Of Day Market Data Sequence Number will always be set to "0".

FIELD	SHORT DESCRIPTION	FORMAT	LEN	VALUES	PRESENCE
Market Data Sequence Number	Assigned by MDG for each message. Each channel has its own Market Data Sequence Number sequence.	Sequence	8	0..2^64-2	Mandatory
Session Trading Day	Date of the current trading session (in number of days since the 1st of January 1970).	Date	2	0..2^16-2	Mandatory

End Of Day (1102)

"End Of Day" (1102) messages are sent at end of day to inform that MDG will shut down 15 minutes after the first "End Of Day" (1102) message is sent. During these 15 minutes, MDG will stop sending messages (including "Health Status" (1103)).

Message Sending Rules: At the end of day, based on the production timetable, MDG will send "End Of Day" (1102) messages every 2 seconds during 15 minutes.

Note: The Market Data Sequence Number of all the "End Of Day" (1102) messages is the Market Data Sequence Number of the last message sent by the aggregator for this set of channels (be aware that this last message can have been sent on another channel managed by this aggregator).

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FIELD	SHORT DESCRIPTION	FORMAT	LEN	VALUES	PRESENCE
Market Data Sequence Number	Assigned by MDG for each message. Each channel has its own Market Data Sequence Number sequence.	Sequence	8	0..2^64-2	Mandatory
Session Trading Day	Date of the current trading session (in number of days since the 1st of January 1970).	Date	2	0..2^16-2	Mandatory

Health Status (1103)

The Health Status messages are broadcasted on all channels repeatedly all along the day as soon as the Standing Data messages are broadcasted and until End of Day messages are broadcasted. The Market Data Sequence Number for this message will be the last Market Data Sequence Number of the message sent by the aggregator of this channel (be aware that this message can be sent on another channel managed by this aggregator).

The Event time indicates the time of the generation of the Health Status message. This message is alone in the packet.

Message Sending Rules: Health Status are sent every 2 seconds even if there are market data messages sent on a channel.

FIELD	SHORT DESCRIPTION	FORMAT	LEN	VALUES	PRESENCE
Market Data Sequence Number	Assigned by MDG for each message. Each channel has its own Market Data Sequence Number sequence.	Sequence	8	0..2^64-2	Mandatory
Event Time	Time when an event has been processed	Epoch Time in Nanoseconds	8	0..2^64-2	Mandatory

Technical Notification (1106)

Technical Notification message is used to notify the beginning of Start and End Retransmissions.

Message Sending Rules:

- At the end of each book retransmission on a single instrument (they start with a clear book request in Order Update or Market Update message). Field "Symbol Index" will have the value of the instrument book sent. "Retransmission Start Time" will be set to null.
- At the beginning and at the end of a trade retransmission, providing the time window to clear previous trades and to be replaced by the resubmitted trades. Field "Symbol Index" will be set to null.

FIELD	SHORT DESCRIPTION	FORMAT	LEN	VALUES	PRESENCE
Market Data Sequence Number	Assigned by MDG for each message. Each channel has its own Market Data Sequence Number sequence.	Sequence	8	0..2^64-2	Optional
Technical Notification Type	Indicates the technical notification sent.	Enumerated	1	1 Instrument Book Retransmission End 10 Trade Retransmission Start 11 Trade Retransmission End	Mandatory
Rebroadcast Indicator	Indicates if this message is resent or new (1 if resent, 0 otherwise). For a snapshot, this field will always be set to '1'.	Numerical ID	1	0..2^8-2	Mandatory

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FIELD	SHORT DESCRIPTION	FORMAT	LEN	VALUES	PRESENCE
Retransmission Start Time	Indicates when the retransmission starts. For trade retransmission, all the trades previously received by the clients that have an "Event time" strictly lower than this field are valid (Time in number of nanoseconds since 01/01/1970 UTC).	Epoch Time in Nanoseconds	8	0..2^64-2	Optional
Retransmission End Time	Indicates when the retransmission ends. For trade retransmission, all the trades previously received by the clients that have an "Event time" strictly higher than this field are valid (Time in number of nanoseconds since 01/01/1970 UTC).	Epoch Time in Nanoseconds	8	0..2^64-2	Optional
Symbol Index	Exchange identification code of the instrument/contract.	Numerical ID	4	0..2^32-2	Optional

REFERENTIAL MESSAGES

Timetable (1006)

The timetable message indicates the instrument trading patterns (state change sequence) for the current trading day.

Link between respectively Cash instruments and Derivatives contracts is explained in the dedicated section.

Message Sending Rules:

- Automatically for each Trading Pattern, after the Session Start and Referential messages
- On an exceptional basis, it may be sent during the trading day in case scheduled hours have changed due to manual intervention by Market Operations or if there are multiple openings during the day. If it indicates a Pattern ID, then the change applies on all instruments linked to this Pattern ID, otherwise it only applies on the Symbol Index and EMM.

FIELD	SHORT DESCRIPTION	FORMAT	LEN	VALUES	PRESENCE
Market Data Sequence Number	Assigned by MDG for each message. Each channel has its own Market Data Sequence Number sequence.	Sequence	8	0..2^64-2	Mandatory
Rebroadcast Indicator	Indicates if this message is resent or new (1 if resent, 0 otherwise). For a snapshot, this field will always be set to '1'.	Numerical ID	1	0..2^8-2	Mandatory
EMM	Defines the Exchange Market Mechanism applied on each platform.	Enumerated	1	(See field description)	Optional

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FIELD	SHORT DESCRIPTION	FORMAT	LEN	VALUES	PRESENCE
Pattern ID	Numerical Pattern identifier available as a characteristic of an instrument in Standing Data file and message, and used in the MDG timetable message. Cash Markets only.	Numerical ID	2	0..2^16-2	Optional
Symbol Index	Exchange identification code of the instrument/contract.	Numerical ID	4	0..2^32-2	Optional
Timetables length	Repeating section header	Numerical	1	0.. 2^16-2	Mandatory
Timetables occurrences	Repeating section header	Numerical	1	1..254	Mandatory
Phase Time	Time of Phase start	Integer Time in hhmmss	8	0..2^64-2	Mandatory
Phase Id	Indicates the phase of the instrument.	Enumerated	1	(See field description)	Mandatory
Phase Qualifier	Indicates the Phase Qualifier.	Bitmap	2	(See field description)	Mandatory
Trading Period	Provides the current trading period.	Enumerated	1	1 Opening (Cash and Derivatives) 2 Standard (Cash and Derivatives) 3 Closing (Cash and Derivatives)	Mandatory
Order Entry Qualifier	Field indicating the state of the Order Entry for the current market state.	Enumerated	1	0 Order Entry/Cancel/Modify Disabled 1 Order Entry/Cancel/Modify Enabled 2 Cancel and Modify Only (Derivatives Only) 3 Cancel Only	Optional
Session	Current market session.	Enumerated	1	(See field description)	Mandatory
Scheduled Event	Type of Scheduled Event.	Enumerated	1	(See field description)	Optional

Standing Data (1007)

The Standing Data message provides instrument characteristics for Cash and Index products, valid for the current trading day.

Message Sending Rules:

- Every morning following the Session Start messages.

Multi-Listing – Market of Reference – Single Order Book

An instrument can be listed on more than one of the market places operated by the Exchange. Multi-Listed instruments can be identified in the feed by using the field MIC List in the Standing Data (1007) message.

If an instrument is multi-listed, then a Market of Reference (MoR) is designated and Euronext's European Single Order Book will consolidate liquidity in such instruments by ensuring that all order flow in that instrument is concentrated on a single order book in the designated MoR. Companies can decide to be multi-listed on more than one Euronext market to benefit from increased visibility and exposure.

For example, ING Groep (NL0011821202) (headquartered in the Netherlands) is listed on two Euronext markets, Euronext Amsterdam (being its Market of Reference) and Euronext Brussels. Even though order flow in ING Groep is concentrated on the single order book in the designated Market of Reference (being Euronext Amsterdam), ING Groep is still considered as a listed company in the Netherlands and Belgium.

The MIC List will show an instrument being listed on more than one of Euronext's markets and it always begins with the MIC of the MoR.

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The Euronext website should be used as the reference for correct display of multi-listed instruments; the display of a multi-listed instrument should include the relevant markets on which the instrument is listed and show the real-time quotes of the relevant instrument (based on the single order book in the designated Market of Reference).

Notes:

- Standing Data messages are also available in XML file.
- The repeating section links the "Exchange Market Mechanism" (EMM) with its "Pattern ID".

FIELD	SHORT DESCRIPTION	FORMAT	LEN	VALUES	PRESENCE
Market Data Sequence Number	Assigned by MDG for each message. Each channel has its own Market Data Sequence Number sequence.	Sequence	8	0..2^64-2	Mandatory
Rebroadcast Indicator	Indicates if this message is resent or new (1 if resent, 0 otherwise). For a snapshot, this field will always be set to '1'.	Numerical ID	1	0..2^8-2	Mandatory
Symbol Index	Exchange identification code of the instrument/contract.	Numerical ID	4	0..2^32-2	Mandatory
Optiq Segment	An Optiq segment is a universe of instruments sharing common trading properties.	Enumerated	1	(See field description)	Mandatory
Partition ID	Identifies uniquely an Optiq partition across all the Exchange partitions.	Numerical ID	2	0..2^16-2	Mandatory
Full Instrument Name	Full Instrument Name.	Text	102	(See field description)	Optional
Instrument Name	Instrument Name	Text	18	(See field description)	Mandatory
Instrument Trading Code	Cash: Trading code is a 12-character string, the only instrument identifier that is unique in the feed in addition to the symbol index.	Alphanumeric al ID	15	(See field description)	Optional
Instrument Group Code	Instrument Group / Class Identifier.	Alphanumeric al ID	2	(See field description)	Mandatory
ISIN Code	Instrument ISIN following ISO 6166.	Alphanumeric al ID	12	(See field description)	Mandatory
Price / Index Level Decimals	Indicates the number of decimals for each Price / Index Level related to this Symbol Index	Decimal Places	1	0..2^8-2	Mandatory
Quantity Decimals	Indicates the number of decimals for each Quantity related to this Symbol Index	Decimal Places	1	0..2^8-2	Optional
Amount Decimals	Indicates the number of decimals for each Amount related to this Symbol Index	Decimal Places	1	0..2^8-2	Optional
Ratio / Multiplier Decimals	Indicates the number of decimals for each Ratio / Multiplier related to this Symbol Index	Decimal Places	1	0..2^8-2	Mandatory
CFI	Classification code of a financial instrument defined by the ISO-10962:2015 standard.	Text	6		Mandatory
Instrument Event Date	Date of the last instrument characteristic modification(s) except for some exceptions.	Date	2	0..2^16-2	Mandatory

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FIELD	SHORT DESCRIPTION	FORMAT	LEN	VALUES	PRESENCE
Strike Price	The strike price of an option/warrant is the specified price at which the underlying can be bought (in the case of a call/right to buy) or sold (in case of a put/right to sell) by the holder (buyer) of the option/warrant contract, at the moment he exercises his right against a writer (seller) of the option/warrant.	Price	8	(See field description)	Optional
Dark Eligibility	Indicates the Eligibility to dark. 0 is not eligible, 1 is eligible.	Boolean	1	0..2^8-2	Optional
Dark LIS Threshold	Defines the minimum amount of an order to benefit from the LIS (Large In Scale) pre-transparency waiver (to be calculated with the Amount Decimals).	Amount	8	0..2^64-2	Optional
Dark Minimum Quantity	*Defines the minimum quantity required for an order to be filled in the Dark liquidity. 0 indicates that no minimum amount is required.*	*Quantity*	*4*	*0..2^32-2*	*Optional*
Date Of Last Trade	Date of the Last Price for the Instrument	Date	2	0..2^16-2	Optional
Depositary List	Identifies the possible main depository organizations (maximum four) for shares or fixed income.	Text	20	(See field description)	Optional
Main Depositary	Identifies the default (or main) depository organization of the instrument (between the possible 4 depositaries registered) used by priority for the settlement (for example: multi-listed instruments which have several depositories).	Alphanumerical ID	5	(See field description)	Optional
First Settlement Date	Represents the first possible settlement date for a given instrument.	Date	2	0..2^16-2	Optional
Guarantee Indicator	Indicates if the trade is guaranteed or not (for clearing purpose)	Enumerated	1	0 This instrument is not guaranteed 1 This instrument is guaranteed 2 This instrument is not clearable 8 This instrument is part of Cleared Borrowing and Lending Service (CBLM) and is guaranteed	Optional
ICB	*Not relevant*	Alphanumerical ID	16	(See field description)	Optional
Issuing Country	Issuing country.	Alphanumerical ID	3	(See field description)	Optional
Last Adjusted Closing Price	Last traded price of the previous trading day after application of the adjustment coefficient (to be calculated with the Price/Index Level Decimals).	Price	8	(See field description)	Optional

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FIELD	SHORT DESCRIPTION	FORMAT	LEN	VALUES	PRESENCE
Lot Size	For Cash and Derivatives, it defines a multiple of the tradable quantity.	Quantity	8	0..2^64-2	Optional
Maturity Date	Maturity Date of the instrument (text formatted as YYYYMMDD).	Text	8	(See field description)	Optional
Maximum Decimals In Quantity	Maximum Decimals In Quantity was introduced for Euronext Fund Services Paris and indicates the maximum of relevant decimal number for trading.	Numerical	1	0..2^8-2	Optional
MIC	Identifies the market to which an instrument belongs by its MIC (Market Identification Code), segment MIC according to ISO 10383.	Alphanumeric al ID	4	(See field description)	Mandatory
MIC List	Identifies the Euronext markets on which an instrument is listed by its MIC (Market Identification Code).	Alphanumeric al ID	20	(See field description)	Optional
Country Of Exchange	Country of exchange is the Country associated to the MIC following ISO 3166 Alpha-3.	Alphanumeric al ID	3	(See field description)	Optional
Mnemonic	Mnemonic code of the instrument. This field is not populated for every instrument.	Alphanumeric al ID	5	(See field description)	Optional
Underlying MIC	Identifies the market to which an instrument' underlying belongs by its MIC (Market Identification Code), according to ISO 10383. Refer to MIC field to have all the authorized values.	Alphanumeric al ID	4	(See field description)	Optional
Underlying ISIN Code	Underlying ISIN.	Alphanumeric al ID	12	(See field description)	Optional
Trading Currency	Code of the currency (ISO 4217-3A).	Alphanumeric al ID	3	(See field description)	Optional
Currency Coefficient	When an actual price is displayed in a different 'price expression' than the official instrument trading currency, the Currency Coefficient represents the ratio 'price expression' divided by 'official currency' (To be calculated with Ratio / Multiplier Decimals).	Numerical ID	4	0..2^32-2	Optional
Trading Currency Indicator	Indicates whether the 'price expression' is in the Currency or in a ratio of this Currency. Use Currency Coefficient field to identify the ratio to apply.	Enumerated	1	0 Change rate not applied to the traded price 1 Change rate applied to the traded price	Optional
Strike Currency Indicator	Indicates whether the 'price expression' is in the Currency or in a ratio of this Currency. Use Currency Coefficient field to identify the ratio to apply.	Enumerated	1	0 Change rate not applied to the strike price 1 Change rate applied to the strike price	Optional
Number Instrument Circulating	For stocks: this is the total number of shares issued by the company. For Fix Income: this is the number of Fix Income still to be repaid.	Quantity	8	0..2^64-2	Optional

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FIELD	SHORT DESCRIPTION	FORMAT	LEN	VALUES	PRESENCE
Par Value	Par Value (also called Nominal value) for Instrument. For Fixed Income it represents the par amount to be repaid at maturity (not including interest revenue) (to be calculated with the Amount Decimals).	Amount	8	0..2^64-2	Optional
Quantity Notation	Indication of the type of measurement (e.g. number of units, nominal, monetary value, etc.) in which the transaction is expressed.	Text	3	(See field description)	Optional
Instrument Unit Expression	*Deprecated – Instrument Unit Expression in EMMPatternRep section should be used instead.*	*Enumerated*	*1*	*(See field description)*	*Optional*
Settlement Delay	Gives the number of trading days that represents the period between the trade date and the settlement date (delivery and payment) for an instrument to be cleared and settled.	Alphanumerical ID	2	(See field description)	Optional
Strike Currency	Code of the strike currency (ISO 4217-3A).	Alphanumerical ID	3	(See field description)	Optional
Tax Code	Tax deduction code to which the instrument belongs.	Enumerated	1	0 Not eligible to PEA 3 Eligible to PEA 9 Not Applicable	Optional
Type Of Corporate Event	Indicates the last type of corporate event that has occurred on an instrument, such as detachment of rights, or of coupons. The data item is automatically calculated by the adjustment application but in case of problem or error, the data item value could be modified manually, particularly for purging the order book in case of absence of corporate event.	Alphanumerical ID	2	(See field description)	Optional
Type Of Market Admission	Indicates the type of market to which an instrument has been listed.	Enumerated	1	(See field description)	Optional
Repo Indicator	Indicates whether the instrument listed underlies any loan contracts, meaning it has been admitted to the Deferred Settlement system and/or to the lending market.	Enumerated	1	(See field description)	Optional
Issue Price	Issuing price of the instrument	Price	8	(See field description)	Optional
Nominal Currency	Code of the nominal currency (ISO 4217-3A).	Alphanumerical ID	3	(See field description)	Optional
Issue Price Decimals	Indicates the number of decimals for Issue Price related to this Symbol Index	Decimal Places	1	0..2^8-2	Optional
Strike Price Decimals	Indicates the number of decimals for Strike Price related to this Symbol Index	Decimal Places	1	0..2^8-2	Optional
Liquid Instrument Indicator	Indicates whether the instrument is liquid or not, as defined per EU and UK MiFID II. (0 = Illiquid; 1 = Liquid)	Boolean	1	0..2^8-2	Optional

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FIELD	SHORT DESCRIPTION	FORMAT	LEN	VALUES	PRESENCE
Market Of Reference MIC	Indicates the instrument Exchange of Reference by its MIC (Market Identification Code according to ISO 10383) (For Future Use).	Alphanumerical ID	4	(See field description)	Optional
ICB Code	Not relevant	Alphanumerical ID	8	(See field description)	Optional
Threshold LIS Post Trade 60mn	Defines the amount of an order to benefit from the LIS Trade Deferred publication to 60 min (to be calculated with the Amount Decimals).	Amount	8	0..2^64-2	Optional
Threshold LIS Post Trade 120mn	Defines the amount of an order to benefit from the LIS Trade Deferred publication to 120 min (to be calculated with the Amount Decimals).	Amount	8	0..2^64-2	Optional
Threshold LIS Post Trade EOD	Defines the amount of an order to benefit from the LIS Trade Deferred publication to EOD (to be calculated with the Amount Decimals).	Amount	8	0..2^64-2	Optional
Long Mnemonic	Mnemonic code of the instrument. This field is not populated for every instrument.	Alphanumerical ID	6	(See field description)	Optional
Max Order Amount Call	Maximum order amount allowed during a call phase.	Amount	8	0..2^64-2	Optional
Max Order Amount Continuous	Maximum order amount allowed during a continuous phase.	Amount	8	0..2^64-2	Optional
Max Order Quantity Call	Maximum order quantity allowed during an uncrossing phase.	Quantity	8	0..2^64-2	Optional
Max Order Quantity Continuous	Maximum order quantity allowed during a continuous phase.	Quantity	8	0..2^64-2	Optional
Pool Factor	Allows to calculate how much of the original loans have yet to be repaid.	Numerical ID	4	0..2^32-2	Optional
EMMPatternRep length	Repeating group Header	Numerical	1	0.. 2^8-2	Mandatory
EMMPatternRep occurrences	Repeating group Header	Numerical	1	1..254	Mandatory
EMM	Defines the Exchange Market Mechanism applied on each platform.	Enumerated	1	(See field description)	Mandatory
Pattern ID	Numerical Pattern identifier available as a characteristic of an instrument in Standing Data file and message, and used in the MDG timetable message. Cash Markets only.	Numerical ID	2	0..2^16-2	Optional
Tick Size Index ID	ID of the tick size table available in the Tick Table file.	Numerical ID	2	0..2^16-2	Optional
Market Model	Market Model identifier.	Enumerated	1	(See field description)	Optional
Lot Size	For Cash and Derivatives, it defines a multiple of the tradable quantity.	Quantity	8	0..2^64-2	Optional
Instrument Unit Expression	Unit in which the instrument is quoted.	Enumerated	1	(See field description)	Optional

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FIELD	SHORT DESCRIPTION	FORMAT	LEN	VALUES	PRESENCE
Anonymous	Indicates if the Market Data notifications on the instrument are anonymous or not. (0: Non Anonymous – Member Firm ID published; 1: Anonymous – Member Firm ID not published).	Boolean	1	0..2^8-2	Optional

Contract Standing Data (1013)

The Contract Standing Data message provides the characteristics of Derivatives contracts and the underlyings. Contract Standing Data will be sent first, followed by the Outright Standing Data and Strategy Standing Data.

For Contract characteristics: Symbol Index will be included in the range defined in the Symbol Index chapter

For Underlying characteristics: Symbol Index will be populated with the Symbol Index from the underlying cash instrument (applicable for underlying instruments listed on Euronext).

Message Sending Rules: The Contract Standing Data message is sent every morning following the Session Start messages

Note: Parameters related to Contract Standing Data will only be available in XML file.

FIELD	SHORT DESCRIPTION	FORMAT	LEN	VALUES	PRESENCE
Market Data Sequence Number	Assigned by MDG for each message. Each channel has its own Market Data Sequence Number sequence.	Sequence	8	0..2^64-2	Mandatory
Rebroadcast Indicator	Indicates if this message is resent or new (1 if resent, 0 otherwise). For a snapshot, this field will always be set to '1'.	Numerical ID	1	0..2^8-2	Mandatory
Symbol Index	Exchange identification code of the instrument/contract.	Numerical ID	4	0..2^32-2	Mandatory
Optiq Segment	An Optiq segment is a universe of instruments sharing common trading properties.	Enumerated	1	(See field description)	Mandatory
Partition ID	Identifies uniquely an Optiq partition across all the Exchange partitions.	Numerical ID	2	0..2^16-2	Mandatory
Contract Event Date	Date of the last contract characteristics modification(s) except for some exceptions.	Date	2	0..2^16-2	Optional
Exchange Code	Indicates the Market Place.	Enumerated	1	(See field description)	Mandatory
Exercise Style	Type of exercise of a derivatives instrument	Enumerated	1	0 European 1 American 2 Asian 3 Bermudan 4 Other	Optional
Contract Name	Contract Name	Text	60		Mandatory
Contract Type	Generic Contract Type.	Enumerated	1	F Future O Option U Underlying	Optional
Underlying Type	Defines the instrument type of the underlying.	Enumerated	1	C Commodity F Future I Index S Stock X Exchange Rate	Mandatory

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FIELD	SHORT DESCRIPTION	FORMAT	LEN	VALUES	PRESENCE
Price / Index Level Decimals	Indicates the number of decimals for each Price / Index Level related to this Symbol Index	Decimal Places	1	0..2^8-2	Optional
Quantity Decimals	Indicates the number of decimals for each Quantity related to this Symbol Index	Decimal Places	1	0..2^8-2	Optional
Amount Decimals	Indicates the number of decimals for each Amount related to this Symbol Index	Decimal Places	1	0..2^8-2	Optional
Ratio / Multiplier Decimals	Indicates the number of decimals for each Ratio / Multiplier related to this Symbol Index	Decimal Places	1	0..2^8-2	Optional
Main Depositary	Identifies the default (or main) depository organization of the instrument (between the possible 4 depositaries registered) used by priority for the settlement (for example: multi-listed instruments which have several depositories).	Alphanumerical ID	5	(See field description)	Optional
MIC	Identifies the market to which an instrument belongs by its MIC (Market Identification Code), segment MIC according to ISO 10383.	Alphanumerical ID	4	(See field description)	Mandatory
Country Of Exchange	Country of exchange is the Country associated to the MIC following ISO 3166 Alpha-3.	Alphanumerical ID	3	(See field description)	Mandatory
Product Code	Physical alphanumerical product code.	Alphanumerical ID	4	(See field description)	Mandatory
Underlying MIC	Identifies the market to which an instrument' underlying belongs by its MIC (Market Identification Code), according to ISO 10383. Refer to MIC field to have all the authorized values.	Alphanumerical ID	4	(See field description)	Optional
Underlying ISIN Code	Underlying ISIN.	Alphanumerical ID	12	(See field description)	Optional
Underlying Expiry	Expiry Date of the underlying (in number of days since the 1st of January 1970).	Date	4	0..2^32-2	Optional
Order Type Rules	Deprecated	Bitmap	2	(See field description)	Mandatory
Settlement Method	Settlement method	Alphanumerical ID	1	(See field description)	Optional
Trading Currency	Code of the currency (ISO 4217-3A).	Alphanumerical ID	3	(See field description)	Mandatory
Strike Price Decimals Ratio	At contract level, the value is the greater number of decimals used for rounding the strike price.	Numerical	1	0..2^8-2	Optional
MM Protections	Indicates allowed MM Protection type on the contract. (0: Disabled; 1: Enabled)	Bitmap	1	0 Delta 1 Volume	Mandatory

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FIELD	SHORT DESCRIPTION	FORMAT	LEN	VALUES	PRESENCE
Contract Trading Type	Contract Trading Type.	Enumerated	1	1 Traded as an outright 2 Not traded, but listed in contract data. Traders may subscribe to it 3 Traded as a simple inter-commodity spread 4 Traded as an inter-commodity spread	Mandatory
Instrument Unit Expression	Unit in which the instrument is quoted.	Enumerated	1	(See field description)	Optional
Underlying Subtype	Defined the underlying sub-type associated to the underlying type.	Enumerated	1	(See field description)	Optional
Mother Stock ISIN	ISIN Code of the index underlying of the TRF contract.	Text	12	(See field description)	Optional
Settlement Tick Size	Default Tick Size value applicable for all Settlement Prices. It's calculated using the PriceDecimals.	Price	8	0..2^64-2	Optional
EDSP Tick Size	Specific Tick Size value applicable for EDSP. It's calculated using the PriceDecimals.	Price	8	0..2^64-2	Optional
Underlying Symbol Index	Identifies the Symbol Index of the underlying of the instrument.	Numerical ID	4	0..2^32-2	Optional
Trading Policy	Trading Policy enabling to allocate a given incoming volume to orders.	Enumerated	1	1 Price Explicit Time 2 Price Pro Rata	Optional
Reference Spread Table ID	ID of the Reference Spread Table.	Numerical ID	2	0..2^16-2	Optional
Derivatives Market Model	Type of synthetic quote applied to the contract	Enumerated	1	0 No Synthetic Quote 1 Spontaneous Implied Matching 2 Event Driven Implied Matching	Optional
Trading Unit	Amount of underlying instrument per unit of a derivative contract (to be calculated with the Quantity Decimals). Due to corporate actions, the value may be different between value provided within this field in Contract Standing Data and Outright Standing Data. Value in Outright Standing Data reflects the adjustment due to the corporate action and should be used for that Outright instrument. Trading Unit field does not support decimals and so Lot Multiplier field is introduced to handle integer and decimals. Lot Multiplier field should be used instead of Trading Unit.	Quantity	8	0..2^64-2	Optional
Reference Price Origin in Call	For Derivatives, it is the rules to obtain the DCRP. Derivatives authorized values are: 4,5,6,7.	Enumerated	1	(See field description)	Optional

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FIELD	SHORT DESCRIPTION	FORMAT	LEN	VALUES	PRESENCE
Reference Price Origin In Continuous	For Derivatives, it is the rules to obtain the DCRP. Derivatives authorized values are: 4,5,6,7.	Enumerated	1	(See field description)	Optional
Reference Price Origin In Trading Interruption	For Derivatives, it is the rules to obtain the DCRP. Derivatives authorized values are: 4,5,6,7.	Enumerated	1	(See field description)	Optional
Collar Expansion Factor	Numerical coefficient applied in collar calculation.	Numerical ID	1	0..2^8-2	Optional
MIFID II Liquid Flag	Defines if a contract is to be considered as liquid under EU MIFID II and onshored UK Regulation.	Boolean	1	From 0 to 2^8-2	Mandatory
Pricing Algorithm	This field provides the defined pricing algorithm value for a given contract. It is used to identify Total Return Future (TRF) contracts and Market On Close (MOC) contracts. For other contract types the value is set to Standard.	Enumerated	1	0 Standard 1 Total Return Future 2 Market On Close	Mandatory
Lot Multiplier	Amount of underlying instrument per unit of a derivative contract (to be calculated with the Ratio / Multiplier Decimals). Due to corporate actions, the value may be different between value provided within this field in Contract Standing Data and Outright Standing Data. Value in Outright Standing Data reflects the adjustment due to the corporate action and should be used for that Outright instrument. Lot Multiplier field is used instead of Trading Unit, because Lot Multiplier supports decimals. Lot Multiplier field is optional because of the Underlying presence in the Standing Data. However it must be filled for any other instrument.	Quantity	8	0..2^64-2	Optional
ContractEMMProperties length	Repeating section Header	Numerical	1	0.. 2^16-2	Mandatory
ContractEMMProperties occurrences	Repeating section Header	Numerical	1	0..10	Mandatory
EMM	Defines the Exchange Market Mechanism applied on each platform.	Enumerated	1	(See field description)	Optional
Tick Size Index ID	ID of the tick size table available in the Tick Table file.	Numerical ID	2	0..2^16-2	Optional
Pattern ID	Numerical Pattern identifier available as a characteristic of an instrument in Standing Data file and message, and used in the MDG timetable message. Cash Markets only.	Numerical ID	2	0..2^16-2	Optional
Lot Size	For Cash and Derivatives, it defines a multiple of the tradable quantity.	Quantity	8	0..2^64-2	Optional
Strategy Authorized	Provides strategy types authorized for contract.	Bitmap	8	(See field description)	Optional

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FIELD	SHORT DESCRIPTION	FORMAT	LEN	VALUES	PRESENCE
Dynamic Collar Logic	For Derivatives, Dynamic Collar Logic is a field used to identify the method of handling orders in case of Trade Price Validation (TPV) being triggered. For Cash, Dynamic Collar Logic is used internally.	Enumerated	1	0 Not Active 2 No Halt with Reject (*not in use*) 3 Halt with Acceptation	Optional
Collar Max Unhalt Nb	Maximum number of automatic unhalts if collar logic enables unhalting.	Quantity	1	0..2^8-2	Optional
Collar Unhalt Delay	Delay (in seconds) of automatic unhalt if collar logic enables unhalting.	Time	4	0..2^32-2	Optional

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Outright Standing Data (1014)

The Outright Standing Data message provides characteristics of Derivatives instruments, valid for the current trading day.

Message Sending Rules:

- Every morning following the Session Start messages. Contract Standing Data will be sent first, followed by the Outright Standing Data and Strategy Standing Data.
- During the day, following intraday creation of instruments.

FIELD	SHORT DESCRIPTION	FORMAT	LEN	VALUES	PRESENCE
Market Data Sequence Number	Assigned by MDG for each message. Each channel has its own Market Data Sequence Number sequence.	Sequence	8	0..2^64-2	Mandatory
Rebroadcast Indicator	Indicates if this message is resent or new (1 if resent, 0 otherwise). For a snapshot, this field will always be set to '1'.	Numerical ID	1	0..2^8-2	Mandatory
Symbol Index	Exchange identification code of the instrument/contract.	Numerical ID	4	0..2^32-2	Mandatory
Contract Symbol Index	Identifies the contract of this instrument by its Symbol Index.	Numerical ID	4	0..2^32-2	Mandatory
Instrument Event Date	Date of the last instrument characteristic modification(s) except for some exceptions.	Date	2	0..2^16-2	Mandatory
ISIN Code	Instrument ISIN following ISO 6166.	Alphanumerical ID	12	(See field description)	Mandatory
CFI	Classification code of a financial instrument defined by the ISO-10962:2015 standard.	Text	6	(See field description)	Optional
Maturity Date	Maturity Date of the instrument (text formatted as YYYYMMDD).	Text	8	(See field description)	Mandatory
Lot Size	Deprecated	Quantity	8	Deprecated	Mandatory
Strike Price	The strike price of an option/warrant is the specified price at which the underlying can be bought (in the case of a call/right to buy) or sold (in case of a put/right to sell) by the holder (buyer) of the option/warrant contract, at the moment he exercises his right against a writer (seller) of the option/warrant. (to be calculated with Price / Index Level Decimals).	Price	8	(See field description)	Optional
Last Trading Date	Last available trading date for the instrument	Date	2	0..2^16-2	Optional
Days To Expiry	Number of Calendar days until the Last Trading Day of the Expiry.	Numerical	2	0..2^16-2	Optional
Derivatives Instrument Trading Code	Derivatives Instrument Trading Code (formerly AMR) is composed of Exchange Code, Contract Type, Product Code, Expiry. For Options, Strike and Option Type (Put or Call) is added.	Alphanumerical ID	18	(See field description)	Optional

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FIELD	SHORT DESCRIPTION	FORMAT	LEN	VALUES	PRESENCE
Derivatives Instrument Type	Indicates the type of derivative instrument	Enumerated	1	0 Call Option 1 Put Option 2 Strategy 3 Individual Future 4 Underlying	Optional
Expiry Cycle Type	Defines the expiry cycle type	Enumerated	1	1 Daily 2 Weekly 3 Monthly	Optional
Underlying Derivatives Instrument Trading Code	Is the underlying of the Derivatives Instrument Trading Code.	Alphanumerical ID	18	(See field description)	Optional
Underlying Symbol Index	Identifies the Symbol Index of the underlying of the instrument.	Numerical ID	4	0..2^32-2	Optional
Trading Unit	Amount of underlying instrument per unit of a derivative contract (to be calculated with the Quantity Decimals). Due to corporate actions, the value may be different between value provided within this field in Contract Standing Data and Outright Standing Data. Value in Outright Standing Data reflects the adjustment due to the corporate action and should be used for that Outright instrument. Trading Unit field does not support decimals and so Lot Multiplier field is introduced to handle integer and decimals. Lot Multiplier field should be used instead of Trading Unit.	Quantity	8	0..2^64-2	Optional
Lot Multiplier	Amount of underlying instrument per unit of a derivative contract (to be calculated with the Ratio / Multiplier Decimals). Due to corporate actions, the value may be different between value provided within this field in Contract Standing Data and Outright Standing Data. Value in Outright Standing Data reflects the adjustment due to the corporate action and should be used for that Outright instrument. Lot Multiplier field is used instead of Trading Unit, because Lot Multiplier supports decimals. Lot Multiplier field is optional because of the Underlying presence in the Standing Data. However it must be filled for any other instrument.	Quantity	8	0..2^64-2	Optional
Expiration Date	Expiration date of the instrument	Date	2	0..2^16-2	Optional
OutrightRep length	Repeating Group Header	Numerical	1	0..2^16-2	Mandatory
OutrightRep occurrences	Repeating Group Header	Numerical	1	1..254	Mandatory
EMM	Defines the Exchange Market Mechanism applied on each platform.	Enumerated	1	(See field description)	Mandatory

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Strategy Standing Data (1012)

The Strategy Standing Data message provides the main characteristics of active strategies.

The repeating section provides the details of each leg.

Message Sending Rules:

- Every morning following the Session Start Messages. Contract Standing Data will be sent first, followed by the Outright Standing Data and Strategy Standing Data. Note that at Start of Day, the messages are sent only for the active strategies, i.e. those having open orders.
- Intraday for the intraday creations / activation of strategies.

Note: Standing Data messages are also available in XML file.

FIELD	SHORT DESCRIPTION	FORMAT	LEN	VALUES	PRESENCE
Market Data Sequence Number	Assigned by MDG for each message. Each channel has its own Market Data Sequence Number sequence.	Sequence	8	0..2^64-2	Mandatory
Rebroadcast Indicator	Indicates if this message is resent or new (1 if resent, 0 otherwise). For a snapshot, this field will always be set to '1'.	Numerical ID	1	0..2^8-2	Mandatory
EMM	Defines the Exchange Market Mechanism applied on each platform.	Enumerated	1	(See field description)	Mandatory
Symbol Index	Exchange identification code of the instrument/contract.	Numerical ID	4	0..2^32-2	Mandatory
Derivatives Instrument Trading Code	Derivatives Instrument Trading Code (formerly AMR) is composed of Exchange Code, Contract Type, Product Code, Expiry. For Options, Strike and Option Type (Put or Call) is added.	Alphanumeric al ID	18	(See field description)	Mandatory
Exchange Code	Indicates the Market Place.	Enumerated	1	(See field description)	Mandatory
Maturity Date	Maturity Date of the instrument (text formatted as YYYYMMDD).	Text	8		Mandatory
Strategy Code	Exchange-recognized strategy code	Alphanumeric al ID	1	(See field description)	Mandatory
Contract Symbol Index	Identifies the contract of this instrument by its Symbol Index.	Numerical ID	4	0..2^32-2	Mandatory
CFI	Classification code of a financial instrument defined by the ISO-10962:2015 standard.	Text	6	(See field description)	Optional
StrategyStanding Datarep1 length	Repeating Group Header	Numerical	1	0..2^16-2	Mandatory
StrategyStanding Datarep1 occurrences	Repeating Group Header	Numerical	1	1..254	Mandatory
Leg Symbol Index	MDG proprietary identification code of the instrument leg for the strategy.	Numerical ID	4	0..2^32-2	Mandatory
Leg Price	Price of corresponding strategy leg (to be calculated with the Price/Index Level Decimals).	Price	8	(See field description)	Optional
Leg Ratio	Ratio of lots for the leg. For contingent trades, the delta.	Quantity	4	0..2^32-2	Mandatory
Leg Buy or Sell	Leg Side.	Enumerated	1	B Buy S Sell	Mandatory

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APA Standing Data (1027)

The APA Standing Data (1027) message provides minimum instrument identification information.

Message Sending Rules:

This message is sent on each channel only once a day per instrument . It is just sent before the first quote or first trade broadcast for that instrument.

FIELD	SHORT DESCRIPTION	FORMAT	LEN	VALUES	PRESENCE
Market Data Sequence Number	Assigned by MDG for each message. Each channel has its own Market Data Sequence Number sequence.	Sequence	8	From 0 to 2^64-2	Optional
Rebroadcast Indicator	Indicates if this message is resent or new (1 if resent, 0 otherwise). For a snapshot, this field will always be set to '1'.	Numerical ID	1	From 0 to 2^8-2	Mandatory
MiFID Instrument ID Type	Code type used to identify the financial instrument.	Text	4	(See field description)	Mandatory
MiFID Instrument ID	Code used to identify the financial instrument. This code has to be processed with the MiFID Instrument ID Type.	Alphanumerical ID	12	(See field description)	Mandatory
Full Instrument Name	Full Instrument Name.	Text	102	(See field description)	Optional
CFI	Classification code of a financial instrument defined by the ISO-10962:2015 standard.	Text	6	(See field description)	Optional
Notional Currency	Currency in which the notional is denominated following ISO 4217 standard.	Alphanumerical ID	3	(See field description)	Optional
Notional Currency 2	Currency in which the notional is denominated following ISO 4217 standard.	Alphanumerical ID	3	(See field description)	Optional
Price Multiplier	Number of units of the financial instrument that are contained in a trading lot. Price multiplier coefficient for instrument unit price.	Numerical	4	From 0 to 2^32-2	Optional
Price Multiplier Decimals	Number of decimals for the field Price Multiplier.	Numerical	1	From 0 to 2^8-2	Optional
Underlying ISIN Code	Underlying ISIN.	Alphanumerical ID	12	(See field description)	Optional
Underlying Index Name	Underlying Index Name	Text	25	(See field description)	Optional
Underlying Index Term	Term of the Underlying Index.	Text	8	(See field description)	Optional
Option Type	Type of the option.	Enumerated	1	1 Call 2 Put	Optional
Strike Price	The strike price of an option/warrant is the specified price at which the underlying can be bought (in the case of a call/right to buy) or sold (in case of a put/right to sell) by the holder (buyer) of the option/warrant contract, at the moment he exercises his right against a writer (seller) of the option/warrant.	Price	8	From -2^63+1 to 2^63-1	Optional
Strike Price Decimals	Indicates the number of decimals for Strike Price related to this ISIN code	Decimal Places	1	From 0 to 2^8-2	Optional
Exercise Style	Type of exercise of a derivatives instrument	Enumerated	1	(See field description)	Optional
Maturity Date	Maturity Date of the instrument (text formatted as YYYYMMDD).	Text	8	(See field description)	Optional

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FIELD	SHORT DESCRIPTION	FORMAT	LEN	VALUES	PRESENCE
Expiry Date	For contracts with one expiry per month the day component may be "00" (text formatted as YYYYMMDD). For AtomX instruments this field contains the exact expiry date. For repo it represents the inclusive date until which a lending/borrowing contract can be traded.	Text	8	(See field description)	Optional
Settlement Method	Settlement method	Alphanumerical ID	1	(See field description)	Optional

BF Instrument Reference (1201)

The BF Instrument Reference (1201) message is sent as part of standing data dedicated to the IBF Optiq segment.

Message Sending Rules:

- Every morning following the Session Start messages.

FIELD	SHORT DESCRIPTION	FORMAT	LEN	VALUES	PRESENCE
Market Data Sequence Number	Assigned by MDG for each message. Each channel has its own Market Data Sequence Number sequence.	Sequence	8	From 0 to 2^64-2	Optional
Rebroadcast Indicator	Indicates if this message is resent or new (1 if resent, 0 otherwise). For a snapshot, this field will always be set to '1'.	Numerical ID	1	From 0 to 2^8-2	Mandatory
Symbol Index	Exchange identification code of the instrument/contract.	Numerical ID	4	From 0 to 2^32-2	Mandatory
Optiq Segment	An Optiq segment is a universe of instruments sharing common trading properties.	Enumerated	1	(See field description)	Mandatory
ISIN Code	Instrument ISIN following ISO 6166.	Alphanumerical ID	12	(See field description)	Optional
SEDOL Code	Alphanumerical identifier of an instrument on the ISE Bonds and Funds segment.	Alphanumerical ID	7	(See field description)	Optional
Long Issuer Name	Indicates the name of the Legal Issuing Entity, long format.	Text	250	(See field description)	Optional
Long Instrument Name	Full Instrument Name, long format.	Text	250	(See field description)	Optional
Currency	Code of the currency (ISO 4217-3A).	Alphanumerical ID	3	(See field description)	Optional
Date of Initial Listing	Date the instrument was initially listed.	Date	2	From 0 to 2^16-2	Optional
Share / Amount in Issue	Total amount issued for the whole fixed income instrument.	Price	8	From -2^63-1 to 2^63-1	Optional
Opened/Closed Fund	Indicates whether the fund is open or closed.	Enumerated	1	O Open C Closed	Optional
Last NAV Price	Last NAV Price	Price	8	From -2^63-1 to 2^63-1	Optional
Gross of CDSC Indicator	Indicates if Contingent Deferred Sales Charges fee is gross or not.	Enumerated	1	N No Y Yes	Optional
Coupon	Price of coupon.	Price	8	From -2^63-1 to 2^63-1	Optional
Maturity Date	Maturity Date of the instrument (text formatted as YYYYMMDD).	Text	8	(See field description)	Optional
Closing Price	Previous day's closing price (to be calculated with the Price / Index Level Decimals).	Price	8	From -2^63-1 to 2^63-1	Optional

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FIELD	SHORT DESCRIPTION	FORMAT	LEN	VALUES	PRESENCE
MIC	Identifies the market to which an instrument belongs by its MIC (Market Identification Code), segment MIC according to ISO 10383.	Alphanumeric al ID	4	(See field description)	Optional
Gross Dividend Payable per Unit	Gross dividend payable, expressed in dividend currency.	Price	8	From -2^63-1 to 2^63-1	Optional
Dividend Currency	Currency of dividend.	Text	3	(See field description)	Optional
Dividend Record Date	Date of dividend record.	Date	2	From 0 to 2^16-2	Optional
Dividend Rate	Dividend rate.	Ratio	8	From 0 to 2^64-2	Optional
Ex-Dividend Date	Date of ex-dividend.	Date	2	From 0 to 2^16-2	Optional
Dividend Payment Date	Dividend payment date.	Date	2	From 0 to 2^16-2	Optional
Tax Description Attaching to a Dividend	Gives precisions about tax attaching to a dividend.	Enumerated	1	D Deduced at Source	Optional
Next Meeting	Date of next general meeting, or any free-formatted information related to next meeting.	Text	8	(See field description)	Optional
Gross Dividend in Euros	Gross dividend payable, expressed in euros.	Price	8	From -2^63-1 to 2^63-1	Optional
Issue Date	Date at which the instrument has been offered to the market, expressed as number of days since Epoch.	Date	2	From 0 to 2^16-2	Optional
Issuing Country	Issuing country.	Alphanumeric al ID	3	(See field description)	Optional
CFI	Classification code of a financial instrument defined by the ISO-10962:2015 standard.	Text	6	(See field description)	Optional
Payment Frequency	Frequency of dividend payment.	Enumerated	1	(See field description)	Optional
Minimum Amount	Minimum amount a bond can be bought.	Price	8	From -2^63-1 to 2^63-1	Optional
Instrument Category	Indicates to which category the instrument belongs.	Enumerated	1	(See field description)	Mandatory
Security Condition	Security status.	Enumerated	2	(See field description)	Optional
MiFID Price Notation	Indication as to whether the price is expressed in monetary value, in percentage or in yield.	Text	4	(See field description)	Optional
Price / Index Level Decimals	Indicates the number of decimals for each Price / Index Level related to this Symbol Index	Decimal Places	1	From 0 to 2^8-2	Optional
Quantity Decimals	Indicates the number of decimals for each Quantity related to this Symbol Index	Decimal Places	1	From 0 to 2^8-2	Optional
Amount Decimals	Indicates the number of decimals for each Amount related to this Symbol Index	Decimal Places	1	From 0 to 2^8-2	Optional
Ratio / Multiplier Decimals	Indicates the number of decimals for each Ratio / Multiplier related to this Symbol Index	Decimal Places	1	From 0 to 2^8-2	Optional
Block Length #1	Defines the length in bytes of the repeating section #1	Numerical	1	2	Mandatory
Num in Group #1	Defines how many times the repeating section #1 is repeated.	Numerical	1	From 0 to 4	Mandatory
Interest Payment Date	Next interest payment date, expressed as number of days since Epoch.	Date	2	From 0 to 2^16-2	Optional

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APPLICATION MESSAGES

Market Update (1001)

The Market Update Message provides valuable data to the market in order to build the limits for the order book depth (COB and BoB), publish trade prices and collars:

- Best limits (BBO)
- Full depth limits
- Clear Book
- Short trade
- Requests
- Collars
- Request For Cross (RFC)
- Best of Book (BoB) full depth limits
- Execution Summary

Message Sending Rules:

- For Cash and Derivatives:

– For the book retransmission every morning or in case of HA.
– For new or updated price and/or volume in the book (including BBO).
– For a Request for Quote (RFQ).
– As a short trade message indicating its trade type, traded price and traded quantity.
– As an execution summary indicating the total traded quantity and the deepest price reached by the aggressive order.

- For Cash:

– For new or updated BoB depth of book price and/or volume.
– For new or updated With Liquidity Provider depth of book price and/or volume for warrants.
– For new Collars when the update is caused by a new trade which impact collar.

- For Derivatives:

– For a Request for Cross activation on an instrument.
– For a Request for Cross queued on an instrument, due to the fact that another RFC is already active.

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Market Data Update Types

The following table defines for each Market Data Update Type to which instruments it applies.

Market Data Update Type		Warrants & Certificates		Equity Derivatives		Index Derivatives		Commodity Derivatives	
		Full Order Book (OU)	Full Order Book (MU)	Best Bid and Offer	Full Order Book (MU)	Best Bid and Offer	Full Order Book (MU)	Best Bid and Offer	Full Order Book (MU)
BBO	1 - Best Bid (Cash and Derivatives)	X	X	X	X	X	X	X	X
	2 - Best Offer (Cash and Derivatives)								
Full Depth	3 - New Bid (Cash and Derivatives)		X		X		X		X
	4 - New Offer (Cash and Derivatives)		X		X		X		X
	5 - Updated Bid (Cash and Derivatives)		X		X		X		X
	6 - Updated Offer (Cash and Derivatives)		X		X		X		X
	58 - New Bid With Liquidity Provider (Cash Only)		X						
	59 - New Offer With Liquidity Provider (Cash Only)		X						
	60 - Updated Bid With Liquidity Provider (Cash Only)		X						
	61 - Updated Offer With Liquidity Provider (Cash Only)		X						
Wholesales RFC Full Depth (Derivatives Only)	74 - New Bid on Wholesale RFC			X	X	X	X	X	X
	75 - New Offer on Wholesale RFC			X	X	X	X	X	X
	76 - Updated Bid on Wholesale RFC			X	X	X	X	X	X
	77 - Updated Offer on Wholesale RFC			X	X	X	X	X	X
	78 - Clear Wholesale RFC			X	X	X	X	X	X
Clear Book	254 - Clear Book (Cash and Derivatives)	X	X	X	X	X	X	X	X
Trades Types	7 - Total Traded Volume[3]								
	24 - Conventional Trade (Cash and Derivatives)	X	X	X	X	X	X	X	X
	50 - Trade Cancellation (Cash and Derivatives)	X	X	X	X	X	X	X	X
	35 - Dark Trade (Cash Only)								
	46 - BoB Trade (Cash Only)								
	51 - Out of Market Trade (Cash Only)	X	X						
	54 - Euronext Fund Service Trade (Cash Only)								
	55 - Secondary Listing Trade (Cash Only)								

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Market Data Update Type		Warrants & Certificates		Equity Derivatives		Index Derivatives		Commodity Derivatives	
		Full Order Book (OU)	Full Order Book (MU)	Best Bid and Offer	Full Order Book (MU)	Best Bid and Offer	Full Order Book (MU)	Best Bid and Offer	Full Order Book (MU)
	52 - Delta Neutral Trade - Underlying Cash Leg (Cash Only)	X	X						
	65 - Market VWAP Operation Trade (Cash Only)								
	34 - Exchange for Swap Trade (Derivatives Only)	X	X						
	37 - Strategy Leg Conventional Trade (Derivatives Only)			X	X	X	X	X	X
	53 - Delta Neutral Trade - Underlying Future Leg (Derivatives Only)			X	X	X	X	X	X
	29 - Large in Scale (LiS) Package Trade (Derivatives Only) [2]								
	56 - Request for Cross Trade (Derivatives Only)			X	X	X	X	X	X
	57 - Request for Cross Strategy Leg Trade (Derivatives Only)								
	72 - ETF-MTF NAV Trade (price in basis points)								
	73 - ETF-MTF NAV Dark Trade (price in basis points)								
	79 - Guaranteed Cross – Negotiated deal NLIQ (Liquid)	X	X						
	80 - Guaranteed Cross – Negotiated deal OILQ (illiquid)	X	X						
	81 - Large in Scale (LIS) Trade (Cash)	X	X						
	100 – Conventional Trade – Provisional Price			X	X	X	X	X	X
	104 - Issuing or Tender Offer Trade								
	105 - RFQ Trade								
Execution Summary	90 – Bid Execution Summary			X	X	X	X	X	X
	97 – Offer Execution Summary			X	X	X	X	X	X
Requests	86 – New Bid RFQ Answer								
	87 – New Offer RFQ Answer								
	88 – Updated Bid RFQ Answer								
	89 – Updated Offer RFQ Answer								
	10 - Request for Quote (Cash and Derivatives)			X	X	X	X	X	X
	11 - Request for Quote Bid (Cash and Derivatives)								

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Market Data Update Type		Warrants & Certificates		Equity Derivatives		Index Derivatives		Commodity Derivatives	
		Full Order Book (OU)	Full Order Book (MU)	Best Bid and Offer	Full Order Book (MU)	Best Bid and Offer	Full Order Book (MU)	Best Bid and Offer	Full Order Book (MU)
	13 - Request for Quote Offer (Cash and Derivatives)								
	12 - Request for Size (Cash and Derivatives)	X	X						
	66 - Request for Size Bid (Cash and Derivatives)	X	X						
	67 - Request for Size Offer (Cash and Derivatives)	X	X						
	25 - Request for Cross (RFC) Queued (Derivatives Only)			X	X	X	X	X	X
	26 - Request for Cross (RFC) (Derivatives Only)			X	X	X	X	X	X
Collars	14 - High Dynamic Collar (Cash Only)								
	15 - Low Dynamic Collar (Cash Only)								
	63 - Low Static Collar								
	64 - High Static Collar								
	101 - High Order Price Control Collar (Cash Only)	X	X						
	102 - Low Order Price Control Collar (Cash Only)	X	X						
	70 - Low LP Collar (Cash Only)	X	X						
	71 - High LP Collar (Cash Only)	X	X						
	91 - AQS Expansion Factor			X	X	X	X	X	X
	92 - Collar Expansion Factor			X	X	X	X	X	X
	93 - Collar Enabled			X	X	X	X	X	X
	94 - Collar Disabled			X	X	X	X	X	X
	95 – DCRP Inter-Month Spread			X	X	X	X	X	X
	96 – FSP Reference Price			X	X	X	X	X	X
	98 – FSP Triggered			X	X	X	X	X	X
	106 – FLIP Spread			X	X	X	X	X	X
	107 – FLIP Reference Price			X	X	X	X	X	X
BoB	16 - New Bid RLP (Retail Liquidity Provider) (Cash Only)								
	17 - New Offer RLP (Retail Liquidity Provider) (Cash Only)								
	18 - Updated Bid RLP (Retail Liquidity Provider) (Cash Only)								

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Market Data Update Type		Warrants & Certificates		Equity Derivatives		Index Derivatives		Commodity Derivatives	
		Full Order Book (OU)	Full Order Book (MU)	Best Bid and Offer	Full Order Book (MU)	Best Bid and Offer	Full Order Book (MU)	Best Bid and Offer	Full Order Book (MU)
	19 - Updated Offer RLP (Retail Liquidity Provider) (Cash Only)								

[2] - The value 29 (Large in Scale (LiS) Package Trade (Derivatives Only)) is deprecated.

[3] - The value 7 (Total Traded Volume) is deprecated.

Market Data Update Type		Fixed Income		ETFs			Equities		
		Full Order Book (OU)	Full Order Book (MU)	Best Bid and Offer	Full Order Book	BoB Full Order Book	Full Order Book (MU)	Full Order Book (OU)	BoB Full Order Book
BBO	1 - Best Bid (Cash and Derivatives)	X	X	X	X		X	X	
	2 - Best Offer (Cash and Derivatives)	X	X	X	X		X	X	
Full Depth	3 - New Bid (Cash and Derivatives)		X		X		X		
	4 - New Offer (Cash and Derivatives)		X		X		X		
	5 - Updated Bid (Cash and Derivatives)		X		X		X		
	6 - Updated Offer (Cash and Derivatives)		X		X		X		
	58 - New Bid With Liquidity Provider (Cash Only)								
	59 - New Offer With Liquidity Provider (Cash Only)								
	60 - Updated Bid With Liquidity Provider (Cash Only)								
	61 - Updated Offer With Liquidity Provider (Cash Only)								
Wholesales RFC Full Depth	74 - New Bid on Wholesale RFC								
	75 - New Offer on Wholesale RFC								
	76 - Updated Bid on Wholesale RFC								

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Market Data Update Type		Fixed Income		ETFs			Equities		
		Full Order Book (OU)	**Full Order Book (MU)**	**Best Bid and Offer**	**Full Order Book**	**BoB Full Order Book**	**Full Order Book (MU)**	**Full Order Book (OU)**	**BoB Full Order Book**
	77 - Updated Offer on Wholesale RFC								
	78 - Clear Wholesale RFC								
Clear Book	254 - Clear Book (Cash and Derivatives)	X	X	X	X	X	X	X	X
Trades Types	7 - Total Traded Volume								
	24 - Conventional Trade (Cash and Derivatives)	X	X	X	X		X	X	
	50 - Trade Cancellation (Cash and Derivatives)								
	35 - Dark Trade (Cash Only)						X	X	
	46 - BoB Trade (Cash Only)						X	X	
	51 - Out of Market Trade (Cash Only)	X	X	X	X		X	X	
	54 - Euronext Fund Service Trade (Cash Only)	X	X	X	X				
	55 - Secondary Listing Trade (Cash Only)						X	X	
	52 - Delta Neutral Trade - Underlying Cash Leg (Cash Only)			X	X		X	X	
	65 - Market VWAP Operation Trade (Cash Only)	X[1]	X[1]	X[1]	X[1]		X	X	
	34 - Exchange for Swap Trade (Derivatives Only)								
	37 - Strategy Leg Conventional Trade (Derivatives Only)								
	53 - Delta Neutral Trade - Underlying Future Leg (Derivatives Only)								
	29 - Large in Scale (LiS) Package Trade (Derivatives Only)								
	56 - Request for Cross Trade (Derivatives Only)								

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Market Data Update Type		Fixed Income		ETFs			Equities		
		Full Order Book (OU)	Full Order Book (MU)	Best Bid and Offer	Full Order Book	BoB Full Order Book	Full Order Book (MU)	Full Order Book (OU)	BoB Full Order Book
	57 - Request for Cross Strategy Leg Trade (Derivatives Only)								
	72 - ETF-MTF NAV Trade (price in basis points)			X	X				
	73 - ETF-MTF NAV Dark Trade (price in basis points)								
	79 - Guaranteed Cross – Negotiated deal NLIQ (Liquid)			X	X		X	X	
	80 - Guaranteed Cross – Negotiated deal OILQ (illiquid)								
	81 - Large in Scale (LIS) Trade (Cash)								
	100 – Conventional Trade – Provisional Price								
	104 – Issuing or Tender Offer Trade	X	X				X	X	
Execution Summary	90 – Bid Execution Summary	X	X	X	X		X	X	
	97 – Offer Execution Summary	X	X	X	X		X	X	
Requests	86 – New Bid RFQ Answer			X	X				
	87 – New Offer RFQ Answer			X	X				
	88 – Updated Bid RFQ Answer			X	X				
	89 – Updated Offer RFQ Answer			X	X				
	10 - Request for Quote (Cash and Derivatives)								
	11 - Request for Quote Bid (Cash and Derivatives)								
	13 - Request for Quote Offer (Cash and Derivatives)								
	12 - Request for Size (Cash and Derivatives)						X	X	
	66 - Request for Size Bid (Cash and Derivatives)						X	X	
	67 - Request for Size Offer (Cash and Derivatives)						X	X	

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Market Data Update Type		Fixed Income		ETFs			Equities		
		Full Order Book (OU)	**Full Order Book (MU)**	**Best Bid and Offer**	**Full Order Book**	**BoB Full Order Book**	**Full Order Book (MU)**	**Full Order Book (OU)**	**BoB Full Order Book**
	25 - Request for Cross (RFC) Queued (Derivatives Only)								
	26 - Request for Cross (RFC) (Derivatives Only)								
Collars	14 - High Dynamic Collar (Cash Only)	X	X	X	X		X	X	
	15 - Low Dynamic Collar (Cash Only)	X	X	X	X		X	X	
	63 - Low Static Collar	X	X	X	X		X	X	
	64 - High Static Collar	X	X	X	X		X	X	
	101 - High Order Price Control Collar (Cash Only)	X	X	X	X		X	X	
	102 - Low Order Price Control Collar (Cash Only)	X	X	X	X		X	X	
	70 - Low LP Collar (Cash Only)								
	71 - High LP Collar (Cash Only)								
	91 - AQS Expansion Factor								
	92 - Collar Expansion Factor								
	93 - Collar Enabled								
	94 - Collar Disabled								
	95 – DCRP Inter-Month Spread								
BoB	16 - New Bid RLP (Retail Liquidity Provider) (Cash Only)					X			X
	17 - New Offer RLP (Retail Liquidity Provider) (Cash Only)					X			X
	18 - Updated Bid RLP (Retail Liquidity Provider) (Cash Only)					X			X
	19 - Updated Offer RLP (Retail Liquidity Provider) (Cash Only)					X			X

[1] - only for negotiated trades on Euronext Exchange

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Limits (BBO and Full Depth):

The "Market Data Update Type" field indicates the type of price/volume update as follows:

- The Best Bid/Offer are the best explicit buy or sell limit price and aggregated volume (explicit and implied) at the best limit price. When best orders are Market Orders or Market To Limit orders, the Best Bid/Offer is sent out with a price set to null and a quantity equal to the aggregated volume of Market Order (MO) and Market To Limit (MTL).
- A Market Order is sent in Market Data with a price set to null value and the quantity is the one from the client order.
- When there is no more Limit on a book side, last BBO is sent with quantity set to '0' and Price set to null value.
- The Bid/Offer updates are the explicit buy or sell price and aggregated explicit volume at any price level. When the Bid/Offer is the best price, both the Bid/Offer and the Best Bid/Offer will be sent. Implied volume is not taken into account in the Bid/Offer updates.
- On Warrants, all updates with a "Liquidity Provider" flag, with a limit will contain at least one liquidity provider order. "Liquidity Provider" limits contain one or several liquidity provider orders along with zero to several non-liquidity provider orders.

Requests:

- On ETF/MTF, Request For Quotes (RFQ) have the following behaviour:
  - A RFQ request will be sent to liquidity providers in private messages. Market participants will not be informed of this RFQ.
  - If the RFQ is results in a trade, and only in this case, all answers to the RFQ are sent in market data using Market Data Update Type: "83 = New Bid RFQ Answer" and/or "84 = New Offer RFQ Answer". The New Bid RFQ Answer and New Offer RFQ answer are aggregated price limits and show the total amount of orders at a price limit. The price limits are cleared using Updated Bid RFQ Answer and Updated Offer RFQ answer with quantity equal to 0.
- A Request for Size (RFS) notifies market participants that a member has an interest at the specified instrument price, but no quantity is indicated.

Collars:

The broadcast information regarding collars varies according to the segment to which the collar is applicable.

Collars are sent as described below.

- For dynamic collars:
  - On each book retransmission (including morning and HA book retransmission)
  - On each dynamic collar price changes
  - On action from Market Operation
- For static collars:
  - On each book retransmission (including morning and HA book retransmission)
  - On Market Operation request
  - For some instruments, on the first trade of the day
  - For some instruments, at each uncrossing of the day
- For order price control collars:
  - On each book retransmission (including morning and HA book retransmission)
  - On each dynamic collar price changes (if the order price control collar is following a dynamic price)
  - For some instruments, on the first trade of the day (if the order price control collar is following a static price)
  - For some instruments, at each uncrossing of the day (if the order price control collar is following a static price)
  - On action from Market Operation
- For LP collars:
  - Only for instrument on LP Quote Driven market model and during One Side Only period to indicate opposite side virtual collar.

For more details on interaction of Optiq in cases of collar expansion associated to the Trading patterns, Spreads, triggering of FSP events, please review the Derivatives Kinematics document.

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Request For Cross:

For interaction of order entry and market data messages for Request For Cross clients should review the Derivatives Kinematics document.

Clear Book:

A Clear Book requests client to clear the entire book for a given Symbol Index. Quantity will be '0' and Price set to null value.

Short trades:

Trades will also be notified using the Market Update message. This comprises a short summary of the trade information since more detailed trade information is provided on Full Trade Information (1004) message. For the specific case of Wholesales, no short trade information will be disseminated through Market Update message.

Customers that are only using short trade messages can retrieve MMT levels 1 (MMT Market Mechanism), 2 (MMT Trading Mode) and 3 (MMT Transaction Category). Rules to get this information with Market Update messages are available in appendix of this document. Please refer to both appendix sections:

- MMT Flags Rules
- Link Between EMM and Trade Types

Execution Summary:

Execution summary message provides information of the order book state after the processing of an aggressive order against orders in the order book. Execution summary messages are published with following characteristics:execution

- Number Of Orders is always set to null value
- Hidden iceberg orders quantities are included in the execution summary
- Dark Trades are not included in the execution summary
- RLP orders in case of an aggressive RLO order are included in the execution summary
- Trades with deferred publication will not generate execution summary messages
- Stop order is considered as new aggressive order and thus will generate a dedicated execution summary for the transaction
- For cash segments, execution summary messages are only published during continuous phase

For Derivatives, in case of Implied Trading, the Execution Summary is sent for the Strategy book, as well as the Outright books that participate in the execution taking into account outright orders and implied orders that have already been published.

Peg Orders (for future use):

Peg orders will be communicated on its creation and for each update with:

- Aggregated volume at this limit
- Number Of Orders with the number of peg orders

On a BBO update peg order updates will be disseminated with the BBO message in different repeated sections.

If a peg order has the same limit as other orders quantity and Number Of Reference fields will always provide aggregated limit that is containing both peg and non-peg orders.

FIELD	SHORT DESCRIPTION	FORMAT	LEN	VALUES	PRESENCE
Market Data Sequence Number	Assigned by MDG for each message. Each channel has its own Market Data Sequence Number sequence.	Sequence	8	From 0 to 2^64-2	Mandatory
Rebroadcast Indicator	Indicates if this message is resent or new (1 if resent, 0 otherwise). For a snapshot, this field will always be set to '1'.	Numerical ID	1	From 0 to 2^8-2	Mandatory

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FIELD	SHORT DESCRIPTION	FORMAT	LEN	VALUES	PRESENCE
EMM	Defines the Exchange Market Mechanism applied on each platform.	Enumerated	1	(See field description)	Mandatory
Event Time	Time when an event has been processed	Epoch Time in Nanoseconds	8	From 0 to 2^64-2	Mandatory
Updates length		Numerical	1	0..2^16-2	Mandatory
Updates occurrences		Numerical	1	1..254	Mandatory
Market Data Update Type	Type of market data update.	Enumerated	1	(See field description)	Mandatory
Symbol Index	Exchange identification code of the instrument/contract.	Numerical ID	4	From 0 to 2^32-2	Mandatory
Number Of Orders	Number of orders at the current price limit.	Numerical	2	From 0 to 2^16-2	Optional
Price	Price per unit of quantity (to be calculated with the Price/Index Level Decimals).	Price	8	From -2^63+1 to 2^63-1	Optional
Quantity	Number of traded or ordered units (to be calculated with Quantity Decimals).	Quantity	8	From 0 to 2^64-2	Optional

Order Update (1002)

On all markets, the Order Update Message provides the market with the information needed to build the order book.

Multiple changes can be disseminated within a single Order Update (1002) message.

This message takes into account all order types, with the exception of Stop Loss and Stop Limit orders. Stop orders are not broadcasted to market participants until they are triggered.

Message Sending Rules:

- In the morning, before market opening, when the trading engine is initialized, to retransmit orders remaining in the book from previous days (taking into account expired orders and order book purges). This is known as the 'order book retransmission' or 'market sheet retransmission'.
- During the day, on each new order, modify order or deletion order from a member firm.
- During the day, in case of order book retransmission. This is a failsafe in case of order book resynchronization.

Market Data Action Types

The Market Data Action Types apply for all cash instrument on central order book. Therefore, no Order Update messages are sent on derivatives.

Order Modifications

For modification of orders, the field Market Data Action Type will flag if there is a loss of priority or not. The order will lose its priority for:

- A price change
- An amendment with an increase of its displayed quantity

Peg Orders (for future use)

Peg orders will be communicated on its creation with its characteristics:

- Type of peg order
- Peg Offset
- Quantity

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On a BBO update no peg order update will be disseminated. Members will have then to update the peg orders for each BBO without changing the previous priority of the original order. Indeed, this will identify the order in case of a partial fill or update.

If a peg is partially filled or updated, then it loses its priority and the message will contain the new quantity.

To be noted:

- Symbol Index, EMM and Order Priority identify the rank of the order in the order book.
- Order Priority identifies the priority of the order in the order book (the order book is identified with Symbol Index and EMM).
- In case of a Deletion (Market Data Action Type '2' or '3'), the quantity will be set to '0' and the price set to default value.
- Orders for cash must be arranged according to:
  - Order type: Priority should be given first to Market order and Market to limit followed by Limits and Peg orders
  - Order price
  - Order priority
    - For Market Orders the price will be set to null value and the quantity is the one from the client order.

Client applications should do the following in order to build the market sheet:

- Determine the Market Data Action Type (add, modify, delete)
- Determine the priority of an order based on Order Type, Order Price, and the Order Priority. The priority of orders of the same type and price depends on their order priority. The order with the lowest value of Order Priority has the highest priority. Bid orders with higher prices have higher priority; ask orders with lower price have higher priority.
- Determine the price and size of an order.

FIELD	SHORT DESCRIPTION	FORMAT	LEN	VALUES	PRESENCE
Market Data Sequence Number	Assigned by MDG for each message. Each channel has its own Market Data Sequence Number sequence.	Sequence	8	From 0 to 2^64-2	Mandatory
Rebroadcast Indicator	Indicates if this message is resent or new (1 if resent, 0 otherwise). For a snapshot, this field will always be set to '1'.	Numerical ID	1	From 0 to 2^8-2	Mandatory
EMM	Defines the Exchange Market Mechanism applied on each platform.	Enumerated	1	(See field description)	Mandatory
Event Time	Time when an event has been processed	Epoch Time in Nanoseconds	8	From 0 to 2^64-2	Mandatory
Orders length	Repeating Section Header	Numerical	1	0…2^16-2	Mandatory
Orders occurrences	Repeating Section Header	Numerical	1	1..254	Mandatory
Symbol Index	Exchange identification code of the instrument/contract.	Numerical ID	4	From 0 to 2^32-2	Mandatory
Market Data Action Type	Identifies if the order is a New Order, a Deletion, a Modification or a Retransmission.	Enumerated	1	(See field description)	Mandatory
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 2^64-2	Optional

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FIELD	SHORT DESCRIPTION	FORMAT	LEN	VALUES	PRESENCE
Previous Priority	Previous Priority is populated only when there is a "Modification of existing order With Loss Of Priority" or order deletions. Then clients have to remove from their market sheet the order identified with the field "Previous Priority" and add a new order with the field "Order Priority" newly provided.	Numerical ID	8	From 0 to 2^64-2	Optional
Order Type	Type of Order.	Enumerated	1	(See field description)	Optional
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	Optional
Order Side	Indicates the side of the order.	Enumerated	1	1 Buy 2 Sell 3 Cross	Optional
Order Quantity	Total order quantity, per quantity unit.(To be calculated with Quantity Decimals).	Quantity	8	From 0 to 2^64-2	Optional
Peg Offset	(Future Use) Tick offset for a pegged order.	Numerical ID	1	From -127 to 127	Optional

Long Order Update (1015)

On Fixed Income markets for non-anonymous instruments, the Long Order Update Message provides the market with the information needed to build the order book. It completes (and does not replace) the Order Update (1002) message with the issuing firm information.

Multiple changes can be disseminated within a single Long Order Update (1015) message.

This message takes into account all order types, with the exception of Stop Loss and Stop Limit orders. Stop orders are not broadcasted to market participants until they are triggered.

Message Sending Rules

- In the morning, before market opening, when the trading engine is initialized, to retransmit orders remaining in the book from previous days (taking into account expired orders and order book purges). This is known as the 'order book retransmission' or 'market sheet retransmission'.
- During the day, on each new order, modify order or deletion order from a member firm.
- During the day, in case of order book retransmission. This is a failsafe in case of order book resynchronization.

Market Data Action Types

The Market Data Action Types apply for all cash instrument on central order book.

Order Modifications

For modification of orders, the field Market Data Action Type will flag if there is a loss of priority or not. The order will lose its priority for:

- A price change
- An amendment with an increase of its displayed quantity

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To be noted:

- Symbol Index, EMM and Order Priority identify the rank of the order in the order book.
- Order Priority identifies the priority of the order in the order book (the order book is identified with Symbol Index and EMM).
- In case of a Deletion (Market Data Action Type '2' or '3'), the quantity will be set to '0' and the price set to default value.
- Orders for cash must be arranged according to:
  - Order type: Priority should be given first to Market order and Market to limit followed by Limits and Peg orders
  - Order price
  - Order priority
    - For Market Orders the price will be set to null value and the quantity is the one from the client order.

Client applications should do the following in order to build the market sheet:

- Determine the Market Data Action Type (add, modify, delete)
- Determine the priority of an order based on Order Type, Order Price, and the Order Priority. The priority of orders of the same type and price depends on their order priority. The order with the lowest value of Order Priority has the highest priority. Bid orders with higher prices have higher priority; ask orders with lower price have higher priority.
- Determine the price and size of an order.

FIELD	SHORT DESCRIPTION	FORMAT	LEN	VALUES	PRESENCE
Market Data Sequence Number	Assigned by MDG for each message. Each channel has its own Market Data Sequence Number sequence.	Sequence	8	From 0 to 2^64-2	Mandatory
Rebroadcast Indicator	Indicates if this message is resent or new (1 if resent, 0 otherwise). For a snapshot, this field will always be set to '1'.	Numerical ID	1	From 0 to 2^8-2	Mandatory
EMM	Defines the Exchange Market Mechanism applied on each platform.	Enumerated	1	(See field description)	Mandatory
Event Time	Time when an event has been processed (Time in number of nanoseconds since 01/01/1970 UTC).	Epoch Time in Nanoseconds	8	From 0 to 2^64-2	Mandatory
Symbol Index	Exchange identification code of the instrument.	Numerical ID	4	From 0 to 2^32-2	Mandatory
Market Data Action Type	Identifies if the order is a New Order, a Deletion, a Modification or a Retransmission.	Enumerated	1	(See field description)	Mandatory
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 2^64-2	Optional

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FIELD	SHORT DESCRIPTION	FORMAT	LEN	VALUES	PRESENCE
Previous Priority	Previous Priority is populated only when there is a "Modification of existing order With Loss Of Priority" or order deletions. Then clients have to remove from their market sheet the order identified with the field "Previous Priority" and add a new order with the field "Order Priority" newly provided.	Numerical ID	8	From 0 to 2^64-2	Optional
Order Type	Type of Order.	Enumerated	1	(See field description)	Optional
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	Optional
Order Side	Indicates the side of the order.	Enumerated	1	1 Buy 2 Sell 3 Cross [i]	Optional
Order Quantity	Total order quantity, per quantity unit.(To be calculated with Quantity Decimals)	Quantity	8	From 0 to 2^64-2	Optional
Peg Offset	[N/A] (Future Use) Tick offset for a pegged order.	Numerical ID	1	From -127 to 127	Optional
Firm ID	Identifier of the member firm that has entered the Order.	Alphanumerical ID	8	(See field description)	Conditional
Account Type	[N/A] Indicates the account type for which the order is entered.	Enumerated	1		Not provided

Price Update (1003)

The Price Update message provides reference prices.

Message Sending Rules

Price Update message are sent each time a reference price is updated.

Market Data Price Types

Reference prices are available for the following instruments:

	Warrants & Certificates	Fixed Income	ETFs	Cash Equities	Equity Derivatives, Index Derivatives, & Commodities
2 – Official Daily (Derivatives Only)					X
4 – Official Market Close (Derivatives Only)					X
6 – Official Expiry (Derivatives Only)					X
7 – Provisional Intraday (Derivatives Only)					X
8 – Official Intraday (Derivatives Only)					X
9 – Official YDSP (Derivatives Only)	X				X
10 – Net Asset Value (+/-) for the instruments eligible to the NAV Trading Facility (Cash Only)			X		
12 – Adjusted Closing Price (Cash Only)	X	X	X	X	
13 – Subscription Price (Cash Only)	X		X		
14 – Indicative Matching Price (Cash and Derivatives)	X	X	X	X	X

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	Warrants & Certificates	Fixed Income	ETFs	Cash Equities	Equity Derivatives, Index Derivatives, & Commodities
19 – Min Price Out of Session Trades (Cash Only)	X*	X*	X*	X*	
20 – Max Price Out of Session Trades (Cash Only)	X*	X*	X*	X*	
21 – Min Price Out of Session Block Trades (Cash Only)	X*	X*	X*	X*	
22 – Max Price Out of Session Block Trades	X*	X*	X*	X*	
23 – Valuation Price (Cash Only)	X	X	X	X	
24 – Fund Subscription (Cash Only)			X		
25 – Fund Redemption (Cash Only)			X		
26 – Uncrossing Price (Cash and Derivatives)	X	X	X	X	X
27 – Last Traded Price (Cash and Derivatives)	X	X	X	X	X
28 – Alternative Indicative Price (AIP) (Cash Only)	X	X	X	X	
30 – Net Asset Value			X*		
31 – External Reference Price				X	
33 – Closing Price	X	X	X	X	

* Only for TCS

For derivatives markets, all settlement prices and Indicative Uncrossing Prices for each uncrossing are provided in the Price Update message (1003). It is sent for both past settlements (in the morning) and intraday settlements (during the trading day).

Indicative Matching Price

A Price Update message with Market Data Price Type: 14 (Indicative Matching Price) indicates the instrument theoretical opening conditions which consist of:

- The Indicative Matching Price (IMP): price at which the instrument would trade if it opened at the moment the price is calculated
- The Indicative Matching Volume (IMV): quantity that would trade at the IMP if the instrument opened at the moment the price is calculated
- The indicative imbalance volume: remaining unmatched quantity at the IMP
- The indicative imbalance volume side: side of the indicative imbalance volume
- Depending on the market, the Indicative Matching Price is sent on a fixed basis or in real time. The real-time messages are sent if at least one of the instrument's theoretical opening conditions changes (indicative matching price, indicative matching volume, imbalance volume or imbalance volume side).
- If the Indicative Matching Price remains undetermined, but the reason for this undetermined state changes, then an Indicative Matching Price is sent with null values (in field Price).

Quantity field will be set to null for the following Market Data Price Type:

- 13 - Subscription Price
- 23 - Valuation Price
- 27 - Last Traded Price
- 28 - Alternative Indicative Price (AIP)
- 33 – Closing Price

For Cash markets, all reference prices are published through a Price Update message, for both Central Order Book and Out of Session contexts:

- Closing Price
- Uncrossing Price

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- Valuation Price
- Min/Max Out of Session Trade Price
- Net Asset value for eligible instruments

Fund features (subscription and redemption) are also communicated through a Price Update Message.

FIELD	SHORT DESCRIPTION	FORMAT	LEN	VALUES	PRESENCE
Market Data Sequence Number	Assigned by MDG for each message. Each channel has its own Market Data Sequence Number sequence.	Sequence	8	0..2^64-2	Mandatory
Rebroadcast Indicator	Indicates if this message is resent or new (1 if resent, 0 otherwise). For a snapshot, this field will always be set to '1'.	Numerical ID	1	0..2^8-2	Mandatory
EMM	Defines the Exchange Market Mechanism applied on each platform.	Enumerated	1	(See field description)	Mandatory
Event Time	Time when an event has been processed	Epoch Time in Nanoseconds	8	0..2^64-2	Mandatory
Prices length	Repeating Section Header	Numerical	1	0…2^16-2	Mandatory
Prices occurrences	Repeating Section Header	Numerical	1	1..254	Mandatory
Market Data Price Type	Type of price update (note: 1 to 9 are settlement price type).	Enumerated	1	(See field description)	Mandatory
Symbol Index	Exchange identification code of the instrument/contract.	Numerical ID	4	0..2^32-2	Mandatory
Price	Price per unit of quantity (to be calculated with the Price/Index Level Decimals).	Price	8	See field description)	Optional
Quantity	Number of traded or ordered units (to be calculated with Quantity Decimals).	Quantity	8	0..2^64-2	Optional
Imbalance Quantity	Imbalance volume quantity if Uncrossing occurs at this moment. This volume includes hidden quantity (to be calculated with Quantity Decimals).	Quantity	8	0..2^64-2	Optional
Imbalance Quantity Side	Side of the imbalance volume if the Uncrossing occurs at this moment.	Enumerated	1	0 No imbalance 1 Buy 2 Sell	Optional
Price Qualifier	Represents a qualifier of the type of update being communicated to the market.	Enumerated	1	(See field description)	Optional

Full Trade Information (1004)

The **Full Trade Information** (1004) Message is a trade summary sent to the Market (EU and UK MiFID II compliant). Simultaneously, a short trade message is sent via the **Market Update** (1001) message for all markets, except for the specific case of Wholesale LIS Package.

Wholesale LIS Package transaction is disseminated via **LIS Package Structure** (1016) and followed by a **Full Trade information** (1004) (EU and UK MIFID II Compliant) which contains the following main fields:

- In the core part of the message, the SymbolIndex of the contract;
- In the core of the message, the executed volume of the transaction at package level;
- In the core of the message, the *MIFID Execution ID* field to retrieve the corresponding **LIS Package Structure** (1016)
- In the core of the message, *MMT Transaction Category* set to 'TPAC: Package Trade' in case of a Wholesale strategy

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For the Cash Markets

MiFID Execution ID is composed of the Symbol Index (on 10 characters), the EMM (on 3 characters) and the Execution ID (on 10 characters). It is a unique Execution ID by instrument per day on the different available EMM. Example: Trade done with Execution Id: 42 on the Symbol Index: 1384659 on EMM: 1 (COB) will have this MiFID Execution ID: 00013846590010000000042.

For the Derivatives Markets

The *MiFID Execution ID* is populated:

- In case of a COB, RFC trade or wholesale transaction on a single instrument:

  Execution ID (10 char) from OEG concatenated with the instrument's identifier (ISIN code [12 char]). Example: Execution ID provided in Order Entry: 257; Instrument ISIN = ABCDEF123456; TVTIC will be 257ABCDEF123456)

- In case of a wholesale transaction or RFC trade on several instruments (Strategies):

  LIS Transaction ID (10 char) from OEG concatenated with instruments identifier (Symbol Index [10 char]).

  Example: LIS Transaction ID provided in Order Entry: 9012345678; Contract SymbolIndex = 1111100000; MiFID Execution ID will be 90123456781111100000).

  Client should note that Wholesales LIS on Strategies are allowed only on exchange recognized strategies.

Message Sending Rules

- For each trade notification.
- For each trade retransmission.

If the Transaction Type is "Summary Report", then it will be a deferred publication of aggregated trades. Therefore, only the MiFID Notional Amount will be filled, and the high and low prices will be in the Statistics message (1009).

EU and UK MiFID II flags are populated using the Market Model Typology (MMT) in version 3.01. For more information please visit: http://www.fixtradingcommunity.org/pg/group-types/mmt

FIELD	SHORT DESCRIPTION	FORMAT	LEN	VALUES	PRESENCE
Market Data Sequence Number	Assigned by MDG for each message. Each channel has its own Market Data Sequence Number sequence.	Sequence	8	0..2^64-2	Mandatory
Rebroadcast Indicator	Indicates if this message is resent or new (1 if resent, 0 otherwise). For a snapshot, this field will always be set to '1'.	Numerical ID	1	0..2^8-2	Mandatory
EMM	Defines the Exchange Market Mechanism applied on each platform.	Enumerated	1	(See field description)	Mandatory
Event Time	Time when an event has been processed	Epoch Time in Nanoseconds	8	0..2^64-2	Mandatory
Symbol Index	Exchange identification code of the instrument/contract.	Numerical ID	4	0..2^32-2	Optional
Trading Date Time	Date and time when the transaction was executed.	Text	27	(See field description)	Mandatory
Publication Date Time	Date and time when the transaction was published by a trading venue or Approved Publication Arrangement (APA).	Text	27	(See field description)	Optional

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FIELD	SHORT DESCRIPTION	FORMAT	LEN	VALUES	PRESENCE
Trade Type	Type of trade.	Enumerated	1	(See field description)	Mandatory
MiFID Instrument ID Type	Code type used to identify the financial instrument.	Text	4	(See field description)	Optional
MiFID Instrument ID	Code used to identify the financial instrument. This code has to be processed with the MiFID Instrument ID Type.	Alphanumerical ID	12	(See field description)	Optional
MiFID Execution ID	MiFID Transaction Identification Code is a unique ID of the Execution per instrument, day and EMM. The value in the field is a concatenation of the Execution ID (10 char) and an identifier of the instruments [ISIN code (12 char) or Symbol Index (10 char)]. In most cases the identifier of the instrument is the 12 character ISIN code. For derivatives, in cases when the trade occurs on an instrument for which the ISIN code is not populated (e.g. Strategies) the Symbol Index of the instrument is used instead.	Alphanumerical ID	52	(See field description)	Mandatory
MiFID Price	Traded price of the transaction excluding, where applicable, commission and accrued interest.	Text	20	(See field description)	Optional
MiFID Quantity	Number of units of the financial instrument. The nominal or monetary value of the financial instrument.	Text	20	(See field description)	Mandatory
MiFID Price Notation	Indication as to whether the price is expressed in monetary value, in percentage or in yield.	Text	4	(See field description)	Optional
MiFID Currency	Currency in which the price is expressed (applicable if the price is expressed as monetary value) following ISO 4217 standard.	Alphanumerical ID	3	(See field description)	Optional
MiFID Qty in Measurement Unit Notation	Indication of measurement units in which the quantity in measurement unit is expressed.	Text	25	(See field description)	Optional
MiFID Quantity Measurement Unit	The equivalent amount of commodity or emission allowance traded expressed in measurement unit	Text	20	(See field description)	Optional
MiFID Notional Amount	Nominal amount or notional amount.	Text	20	(See field description)	Optional
Notional Currency	Currency in which the notional is denominated following ISO 4217 standard.	Alphanumerical ID	3	(See field description)	Optional
MiFID Clearing Flag	Code to identify whether the transaction will be cleared.	Text	5	(See field description)	Optional
MMT Market Mechanism	Defines the fundamental functional market mechanism that has facilitated the trade following MMT level 1.	Enumerated	1	(See field description)	Optional

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FIELD	SHORT DESCRIPTION	FORMAT	LEN	VALUES	PRESENCE
MMT Trading Mode	Differentiates transactions by defining the trading mode under which the trade was executed following MMT level 2.	Enumerated	1	(See field description)	Optional
MMT Transaction Category	Defines the transaction category following MMT level 3.1.	Text	4	(See field description)	Optional
MMT Negotiation Indicator	Defines the negotiation indicator or pre-trade transparency waiver following MMT level 3.2.	Text	4	(See field description)	Optional
MMT Agency Cross Trade Indicator	Defines the agency cross trade indicator following MMT level 3.3.	Text	4	(See field description)	Optional
MMT Modification Indicator	Defines the modification indicator following MMT level 3.4.	Text	4	(See field description)	Optional
MMT Benchmark Indicator	Defines the benchmark indicator or the reference price indicator following MMT level 3.5.	Text	4	(See field description)	Optional
MMT Special Dividend Indicator	Defines the special dividend indicator following MMT level 3.6.	Text	4	(See field description)	Optional
MMT Off Book Automated Indicator	Defines the off book automated indicator following MMT level 3.7.	Enumerated	1	M Off Book Non-Automated Q Off Book Automated - (Hyphen) Unspecified or does not apply	Optional
MMT Contribution to Price	Defines the contribution to price or the price discovery process following MMT level 3.8.	Text	4	(See field description)	Optional
MMT Algorithmic Indicator	Defines the algorithmic indicator following MMT level 3.9.	Text	4	(See field description)	Optional
MMT Publication Mode	Defines the publication mode or post-trade deferral reason following MMT level 4.1.	Text	4	(See field description)	Optional
MMT Post Trade Deferral	Defines the post trade deferral or enrichment type following MMT level 4.2.	Text	4	(See field description)	Optional
MMT Duplicative Indicator	Defines the duplicative indicator following MMT level 5.	Text	4	(See field description)	Optional
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
Transaction Type	Transaction type or publication type.	Enumerated	1	(See field description)	Optional

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FIELD	SHORT DESCRIPTION	FORMAT	LEN	VALUES	PRESENCE
Effective Date Indicator	Indicates if the trade is introduced on the trading session day or earlier.	Enumerated	1	0 If the seller declaration is received on the current trading session day 1 If seller declaration is received before the current trading session day	Optional
Block Trade Code	Indicates if trade relates to a block or a negotiated deal following EU and UK MiFID II rules.	Enumerated	1	B Block Trade N Regular trade or Negotiated deal - (Hyphen) Undefined	Optional
Trade Reference	Reference of the trade reported to the Exchange.	Alphanumerical ID	30	(See field description)	Optional
Original Report Timestamp	Timestamp of trade reporting to the Exchange	Epoch Time in Nanoseconds	8	0..2^64-2	Optional
Transparency Indicator	Used to define the transparency of the trade.	Enumerated	1	0 Lit/Regular Trade 1 Dark Trade and Immediate Publication 2 Dark Trade and Deferred Publication	Optional
Currency Coefficient	When an actual price is displayed in a different 'price expression' than the official instrument trading currency, the Currency Coefficient represents the ratio 'price expression' divided by 'official currency' (To be calculated with Ratio / Multiplier Decimals).	Numerical ID	4	0..2^32-2	Optional
Price Multiplier	Number of units of the financial instrument that are contained in a trading lot. Price multiplier coefficient for instrument unit price.	Numerical	4	0..2^32-2	Optional
Price Multiplier Decimals	Number of decimals for the field Price Multiplier.	Numerical	1	0..2^8-2	Optional
Venue	Identification of the venue where the transaction was executed using the ISO 10383 segment MIC for transactions executed on a trading venue.	Alphanumerical ID	11	(See field description)	Mandatory
Start Time Vwap	Start time for the Volume Weight Average price computation period	Intraday Time in Seconds	4	0..2^32-2	Optional
End Time Vwap	End time for the Volume Weight Average price computation period	Intraday Time in Seconds	4	0..2^32-2	Optional
MiFID Emission Allowance Type	This field is only applicable for emission allowances.	Text	4	(See field description)	Optional
Market Of Reference MIC	Indicates the instrument Exchange of Reference by its MIC (Market Identification Code according to ISO 10383) (For Future Use).	Alphanumerical ID	4	(See field description)	Optional

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FIELD	SHORT DESCRIPTION	FORMAT	LEN	VALUES	PRESENCE
Evaluated Price	This field is used for Total Return Future and Market On Close Future trading. The Price is calculated by ME in index point notation. It can contain the provisional price calculated in intra-day or the final price calculated at the end of the day. The Trade Type value will enable user to know if the field contains provisional price or final price.	Price	8	From -2^63-1 to 2^63-1	Optional
Message Price Notation	This field provides the type of price notation used per message. For TRF and MOC products the value "Price" is used for TAM trading mode, the values "Spread in basis points" and "Spread" are used for TAIC trading mode.	Enumerated	1	1 Price 2 Spread in basis points 3 Spread	Optional
Settlement Date	Date when a trade is final, and the buyer must make payment to the seller while the seller delivers the assets to the buyer.	Number of days since Epoch	2	0..2^16-2	Optional
Repo Settlement Date	Date when the Repo-Seller gets the assets back from the Repo-Buyer. Used in case of a Repo (Repurchase Agreement) trade.	Number of days since Epoch	2	0..2^16-2	Optional
Trade Unique Identifier	Alphanumerical code unique, consistent and persistent per ISO10383 segment MIC and per trading day assigned by the trading venue to a transaction. Trade Unique Identifier (TUI) is a field aimed at identifying an individual transaction and used as Trading Venue Transaction Identification Code (TVTIC). This is a unique transaction identification code generated by trading venues and disseminated to both the buying and the selling parties, in accordance with Article 12 of the Commission Delegated Regulation (EU) 2017/580 Regulatory Technical Standards (RTS).	Alphanumerical ID	16	(see field description)	Conditional
Block Length for repeating section	Defines the length in bytes if the repeating section	Header	1	0	Mandatory
Num in Group for repeating section	Defines how many times the repeating section is repeated	Hader	1	0	Mandatory

APA Quotes (1026)

APA Quotes message provides, for each instrument per Legal Entity Identifier (LEI), a best bid and best offer SI quote.

Message Sending Rules

Each time the LEI is submitting:

- New quote
- Updated an existing quote

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- Cancelled an existing quote

Quotes Management

Only Best Bid and Best Offer are sent for each instrument and for each LEI. Therefore, if 2 LEI are quoting the same instrument it has to be managed separately. For example it is possible the best bid of a LEI crosses the best offer of another LEI of the same instrument.

Both new and update quotes are sent using the Best Bid (1) or Best Offer (2) update in field "Quote Update Type". After the first quote per LEI, instrument and side, all the following for this key will replace previous quote (price and quantity).

When a LEI is stopping contribution or cancelling its current quote a Cancel Bid (5) or Cancel Offer (6) update type is outbound.

Note

- No check is done to verify if quotes from the same LEI for a given instrument are crossed.
- Clients, for each new day, have to clear all quotes from previous day. Clearing quote can be done on End Of Day or Start Of Day message.

FIELD	SHORT DESCRIPTION	FORMAT	LEN	VALUES	PRESENCE
Market Data Sequence Number	Assigned by MDG for each message. Each channel has its own Market Data Sequence Number sequence.	Sequence	8	From 0 to 2^64-2	Optional
Rebroadcast Indicator	Indicates if this message is resent or new (1 if resent, 0 otherwise). For a snapshot, this field will always be set to '1'.	Numerical ID	1	From 0 to 2^8-2	Mandatory
MiFID Instrument ID Type	Code type used to identify the financial instrument.	Text	4	(See field description)	Mandatory
MiFID Instrument ID	Code used to identify the financial instrument. This code has to be processed with the MiFID Instrument ID Type.	Alphanumerical ID	12	(See field description)	Mandatory
MIC	Identifies the market to which an instrument belongs by its MIC (Market Identification Code), segment MIC according to ISO 10383.	Alphanumerical ID	4	(See field description)	Mandatory
Currency	Code of the currency (ISO 4217-3A).	Alphanumerical ID	3	(See field description)	Mandatory
LEI Code	LEI (Legal Entity Identifier) Code	Alphanumerical ID	20	(See field description)	Mandatory
Event Time	(Time in number of nanoseconds since 01/01/1970 UTC).	Epoch Time in Nanoseconds	8	From 0 to 2^64-2	Mandatory
Quote Update Type	Type of Quote update.	Enumerated	1	(See field description)	Mandatory
MiFID Price	Traded price of the transaction excluding, where applicable, commission and accrued interest.	Text	20	(See field description)	Mandatory
MiFID Quantity	Number of units of the financial instrument. The nominal or monetary value of the financial instrument.	Text	20	(See field description)	Mandatory

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FIELD	SHORT DESCRIPTION	FORMAT	LEN	VALUES	PRESENCE
APA Origin	Identification of the venue where the transaction was executed using the ISO 10383 segment MIC for transactions executed on a trading venue.	Alphanumerical ID	4	(See field description)	Mandatory

APA Full Trade Information (1028)

APA Full Trade Information message is the trade publication as reported by clients.

EU and UK MiFID II flags are populated using the Market Model Typology (MMT) in version 3.04. For more information please visit:

http://www.fixtradingcommunity.org/pg/group-types/mmt.

Message Sending Rules

- APA Full Trade Information is sent each time a client is sending a trade for publication to APA services, modifies it or cancels it.

Transaction Publication management:

Each time a new transaction is published, it has a dedicated "Trade Unique Identifier", which actually is the Trading Venue Transaction Identification Code (TVTIC) (please refer to section 0 How to Determine the TVTIC p.59).

On cancellation, this "Trade Unique Identifier" is the same and is used to match the cancelled trade.

On amendment, a first APA Full Trade Information is sent to cancel the amended trade. As the casual cancellation, "Trade Unique Identifier" is used to match the trade cancelled. Then, the amended trade is published with same "Trade Unique Identifier".

FIELD	SHORT DESCRIPTION	FORMAT	LEN	VALUES	PRESENCE
Market Data Sequence Number	Assigned by MDG for each message. Each channel has its own Market Data Sequence Number sequence.	Sequence	8	From 0 to 2^64-2	Mandatory
Rebroadcast Indicator	Indicates if this message is resent or new (1 if resent, 0 otherwise). For a snapshot, this field will always be set to '1'.	Numerical ID	1	From 0 to 2^8-2	Mandatory
EMM	Defines the Exchange Market Mechanism applied on each platform.	Enumerated	1	(See field description)	Mandatory
Event Time	(Time in number of nanoseconds since 01/01/1970 UTC).	Epoch Time in Nanoseconds	8	From 0 to 2^64-2	Mandatory
Trading Date Time	Date and time when the transaction was executed.	Text	27	(See field description)	Mandatory
Publication Date Time	Date and time when the transaction was published by a trading venue or Approved Publication Arrangement (APA).	Text	27	(See field description)	Optional
Trade Type	Type of trade.	Enumerated	1	(See field description)	Mandatory
MiFID Instrument ID Type	Code type used to identify the financial instrument.	Text	4	(See field description)	Optional

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FIELD	SHORT DESCRIPTION	FORMAT	LEN	VALUES	PRESENCE
MiFID Instrument ID	Code used to identify the financial instrument. This code has to be processed with the MiFID Instrument ID Type.	Alphanumeric al ID	12	(See field description)	Optional
MiFID Transaction ID	MiFID Transaction Identification Code is a unique reported trade identifier.	Alphanumeric al ID	52	(See field description)	Mandatory
MiFID Price	Traded price of the transaction excluding, where applicable, commission and accrued interest.	Text	20	(See field description)	Optional
MiFID Quantity	Number of units of the financial instrument. The nominal or monetary value of the financial instrument.	Text	20	(See field description)	Mandatory
MiFID Price Notation	Indication as to whether the price is expressed in monetary value, in percentage or in yield.	Text	4	(See field description)	Optional
MiFID Currency	Currency in which the price is expressed (applicable if the price is expressed as monetary value) following ISO 4217 standard.	Alphanumeric al ID	3	(See field description)	Optional
MiFID Qty in Measurement Unit Notation	Indication of measurement units in which the quantity in measurement unit is expressed.	Text	25	(See field description)	Optional
MiFID Quantity Measurement Unit	The equivalent amount of commodity or emission allowance traded expressed in measurement unit	Text	20	(See field description)	Optional
MiFID Notional Amount	Nominal amount or notional amount.	Text	20	(See field description)	Optional
Notional Currency	Currency in which the notional is denominated following ISO 4217 standard.	Alphanumeric al ID	3	(See field description)	Optional
MiFID Clearing Flag	Code to identify whether the transaction will be cleared.	Text	5	(See field description)	Optional
Efficient MMT Market Mechanism	Defines the fundamental functional market mechanism that has facilitated the trade following MMT level 1.	Enumerated	1	(See field description)	Optional
Efficient MMT Trading Mode	Differentiates transactions by defining the trading mode under which the trade was executed following MMT level 2.	Enumerated	1	(See field description)	Optional
Efficient MMT Transaction Category	Defines the transaction category following MMT level 3.1.	Enumerated	1	(See field description)	Optional
Efficient MMT Negotiation Indicator	Defines the negotiation indicator or pre-trade transparency waiver following MMT level 3.2.	Enumerated	1	(See field description)	Optional

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FIELD	SHORT DESCRIPTION	FORMAT	LEN	VALUES	PRESENCE
Efficient MMT Agency Cross Trade Indicator	Defines the agency cross trade indicator following MMT level 3.3.	Enumerated	1	X 'ACTX' – Agency Cross Trade - '-' – No Agency Cross Trade	Optional
Efficient MMT Modification Indicator	Defines the modification indicator following MMT level 3.4.	Enumerated	1	A 'AMND': Trade Amendment C 'CANC': Trade Cancellation - '-' – New Trade	Optional
Efficient MMT Benchmark Indicator	Defines the benchmark indicator or the reference price indicator following MMT level 3.5.	Enumerated	1	B 'BENC': Benchmark Trade S 'RFPT': Reference Price Trade - '-' – No Benchmark or Reference Price Trade	Optional
Efficient MMT Special Dividend Indicator	Defines the special dividend indicator following MMT level 3.6.	Enumerated	1	E 'SDIV': Special Dividend Trade - '-' – No Special Dividend Trade	Optional
Efficient MMT Off Book Automated Indicator	Defines the off book automated indicator following MMT level 3.7.	Enumerated	1	M Off Book Non-Automated Q Off Book Automated - (Hyphen) Unspecified or does not apply	Optional
Efficient MMT Contribution to Price	Defines the contribution to price or the price discovery process following MMT level 3.8.	Enumerated	1	J 'TNCP': Trade not Contributing to the Price Discovery Process N 'PNDG' – Price is Currently Not Available but Pending P 'P' – Plain-Vanilla Trade T 'NPFT': Non-Price Forming Trade (formerly known as the Technical Trade)	Optional
Efficient MMT Algorithmic Indicator	Defines the algorithmic indicator following MMT level 3.9.	Enumerated	1	H 'ALGO': Algorithmic Trade - '-': No Algorithmic Trade	Optional
Efficient MMT Publication Mode	Defines the publication mode or post-trade deferral reason following MMT level 4.1.	Enumerated	1	(See field description)	Optional
Efficient MMT Post Trade Deferral	Defines the post trade deferral or enrichment type following MMT level 4.2.	Enumerated	1	(See field description)	Optional

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FIELD	SHORT DESCRIPTION	FORMAT	LEN	VALUES	PRESENCE
Efficient MMT Duplicative Indicator	Defines the duplicative indicator following MMT level 5.	Enumerated	1	1 'DUPL' – Duplicative Trade Report (reported to more than one APA) - '-': Unique Trade Report	Optional
Trade Reference	Reference of the trade reported to the Exchange.	Alphanumeric al ID	30	(See field description)	Optional
Original Report Timestamp	Timestamp of trade reporting to the Exchange (Time in number of nanoseconds since 01/01/1970 UTC).	Epoch Time in Nanoseconds	8	From 0 to 2^64-2	Optional
Price Multiplier	Number of units of the financial instrument that are contained in a trading lot. Price multiplier coefficient for instrument unit price.	Numerical	4	From 0 to 2^32-2	Optional
Price Multiplier Decimals	Number of decimals for the field Price Multiplier.	Numerical	1	From 0 to 2^8-2	Optional
Venue	Identification of the venue where the transaction was executed using the ISO 10383 segment MIC for transactions executed on a trading venue.	Alphanumeric al ID	11	(See field description)	Mandatory
MiFID Emission Allowance Type	This field is only applicable for emission allowances.	Text	4	(See field description)	Optional
Long Trade Reference	Reference of the trade reported to the Exchange. Unlike the field **Trade Reference** (length = 30 char.), the **Long Trade Reference** is EU and UK MiFID II compliant (length = 52 char. as requested by the ESMA/FCA). This field is used only for the Saturn APA Service.	Alphanumeric al ID	52	(See field description)	Optional
APA Origin	Identification of the venue where the transaction was executed using the ISO 10383 segment MIC for transactions executed on a trading venue.	Alphanumeric al ID	4	(See field description)	Optional

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FIELD	SHORT DESCRIPTION	FORMAT	LEN	VALUES	PRESENCE
Trade Unique Identifier	Alphanumerical code unique, consistent and persistent per ISO10383 segment MIC and per trading day assigned by the trading venue to a transaction. Trade Unique Identifier (TUI) is a field aimed at identifying an individual transaction and used as Trading Venue Transaction Identification Code (TVTIC). This is a unique transaction identification code generated by trading venues and disseminated to both the buying and the selling parties, in accordance with Article 12 of the Commission Delegated Regulation (EU) 2017/580 Regulatory Technical Standards (RTS).	Alphanumerical ID	16	(See field description)	Mandatory

BF Trade (1202)

The BF Trade (1202) message provides trade information for the ISE IBF Optiq segment.

The MMT Modification Indicator indicates whether it is a new trade, a trade amendment or a trade cancellation.

This message is sent:

- Every morning following the Session Start messages, to provide information on the last trade that occurred for this instrument.
- During the trading session, when there is a new trade for this instrument.
- During the trading session, in case of trade amendment or cancellation.

FIELD	SHORT DESCRIPTION	FORMAT	LEN	VALUES	PRESENCE
Market Data Sequence Number	Assigned by MDG for each message. Each channel has its own Market Data Sequence Number sequence.	Sequence	8	From 0 to 2^64-2	Optional
Rebroadcast Indicator	Indicates if this message is resent or new (1 if resent, 0 otherwise). For a snapshot, this field will always be set to '1'.	Numerical ID	1	From 0 to 2^8-2	Mandatory
Symbol Index	Exchange identification code of the instrument/contract.	Numerical ID	4	From 0 to 2^32-2	Mandatory
MiFID Transaction ID	MiFID Transaction Identification Code is a unique reported trade identifier.	Alphanumerical ID	52	(See field description)	Mandatory
Event Time	Time when an event has been processed	Epoch Time in Nanoseconds	8	From 0 to 2^64-2	Mandatory
Bid/Offer Date Time	Bid/Offer date time , expressed as number of nanoseconds since Epoch.	Epoch Time in Nanoseconds	8	From 0 to 2^64-2	Optional
MMT Modification Indicator	Defines the modification indicator following MMT level 3.4.	Text	4	(See field description)	Mandatory

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FIELD	SHORT DESCRIPTION	FORMAT	LEN	VALUES	PRESENCE
Price	Price per unit of quantity (to be calculated with the Price/Index Level Decimals).	Price	8	From -2^63-1 to 2^63-1	Optional
Bid Price	Quote bid price, (To be calculated with Price/Index Level Decimals).	Price	8	From -2^63-1 to 2^63-1	Optional
Offer Price	Quote offer price, (To be calculated with Price/Index Level Decimals).	Price	8	From -2^63-1 to 2^63-1	Optional
Quantity	Number of traded or ordered units (to be calculated with Quantity Decimals).	Quantity	8	From 0 to 2^64-2	Mandatory
MMT Agency Cross Trade Indicator	Defines the agency cross trade indicator following MMT level 3.3.	Text	4	(See field description)	Optional
MMT Benchmark Indicator	Defines the benchmark indicator or the reference price indicator following MMT level 3.5.	Text	4	(See field description)	Optional
MMT Special Dividend Indicator	Defines the special dividend indicator following MMT level 3.6.	Text	4	(See field description)	Optional
MMT Trading Mode	Differentiates transactions by defining the trading mode under which the trade was executed following MMT level 2.	Enumerated	1	(See field description)	Optional
MiFID Price Notation	Indication as to whether the price is expressed in monetary value, in percentage or in yield.	Text	4	(See field description)	Optional
Quantity Notation	Indication of the type of measurement (e.g. number of units, nominal, monetary value, etc.) in which the transaction is expressed.	Text	3	(See field description)	Optional
Notional Amount Traded	Whole amount of the trade.	Amount	8	From -2^63-1 to 2^63-1	Optional
Trading Currency	Code of the currency (ISO 4217-3A).	Alphanumerical ID	3	(See field description)	Optional

BF NAV (1203)

The BF NAV (1203) message provides Net Asset Value information for the ISE IBF Optiq segment.

The MMT Modification Indicator indicates whether it is a new NAV, a NAV amendment or a NAV cancellation.

This message is sent:

- Every morning following the Session Start messages, to provide information on the last NAV for this instrument.
- During the trading session, when there is a new NAV for this instrument.
- During the trading session, in case of NAV amendment or cancellation.

FIELD	SHORT DESCRIPTION	FORMAT	LEN	VALUES	PRESENCE
Market Data Sequence Number	Assigned by MDG for each message. Each channel has its own Market Data Sequence Number sequence.	Sequence	8	From 0 to 2^64-2	Optional

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FIELD	SHORT DESCRIPTION	FORMAT	LEN	VALUES	PRESENCE
Rebroadcast Indicator	Indicates if this message is resent or new (1 if resent, 0 otherwise). For a snapshot, this field will always be set to '1'.	Numerical ID	1	From 0 to 2^8-2	Mandatory
Symbol Index	Exchange identification code of the instrument/contract.	Numerical ID	4	From 0 to 2^32-2	Mandatory
Bid/Offer Date Time	Bid/Offer date time , expressed as number of nanoseconds since Epoch.	Epoch Time in Nanoseconds	8	From 0 to 2^64-2	Optional
MiFID Transaction ID	MiFID Transaction Identification Code is a unique reported trade identifier.	Alphanumerical ID	52	(See field description)	Mandatory
MMT Modification Indicator	Defines the modification indicator following MMT level 3.4.	Text	4	(See field description)	Mandatory
NAV Price	NAV Price	Price	8	From -2^63-1 to 2^63-1	Optional
Event Time	Time when an event has been processed	Epoch Time in Nanoseconds	8	From 0 to 2^64-2	Optional
NAV Bid Price	Net Asset Value bid price.	Price	8	From -2^63-1 to 2^63-1	Optional
NAV Offer Price	Net Asset Value offer price.	Price	8	From -2^63-1 to 2^63-1	Optional

LIS Package Structure (1016)

The LIS Package structure (1016) message is sent to the market to provide the structure of the package negotiated through the Optiq Wholesale facility. It allows to:

- Determine the components of the package,
- Determine which type of the Exchange Known Strategies was created to negotiate the LIS Strategy transaction (formerly package),
- Map the coming Transaction published via Full Trade Information (1004) message with its structure at component level,
- Automatically compute the statistics,
- Determine the price and quantity traded for each leg of a LIS package.
- Each LIS Package Structure is sent with the MIFID Execution ID of the transaction it relates to – allowing to associate both 1004 and 1016 messages.

Message Sending Rules

- For each LIS Package trade notification (trade types 4 and 43)
- For each LIS Package trade retransmission.

FIELD	SHORT DESCRIPTION	FORMAT	LEN	VALUES	PRESENCE
Market Data Sequence Number	Assigned by MDG for each message. Each channel has its own Market Data Sequence Number sequence.	Sequence	8	From 0 to 2^64-2	Mandatory
Rebroadcast Indicator	Indicates if this message is resent or new (1 if resent, 0 otherwise). For a snapshot, this field will always be set to '1'.	Numerical ID	1	From 0 to 2^8-2	Mandatory
EMM	Defines the Exchange Market Mechanism applied on each platform.	Enumerated	1	(See field description)	Mandatory

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FIELD	SHORT DESCRIPTION	FORMAT	LEN	VALUES	PRESENCE
Event Time	Time when an event has been processed	Epoch Time in Nanoseconds	8	From 0 to 2^64-2	Mandatory
Contract Symbol Index	Identifies the contract of this instrument by its Symbol Index.	Numerical ID	4	0..2^32-2	Mandatory
MiFID Execution ID	MiFID Transaction Identification Code is a unique ID of the Execution per instrument, day and EMM. The value in the field is a concatenation of the Execution ID (10 char) and an identifier of the instruments [ISIN code (12 char) or Symbol Index (10 char)]. In most cases the identifier of the instrument is the 12 character ISIN code. For derivatives, in cases when the trade occurs on an instrument for which the ISIN code is not populated (e.g. Strategies) the Symbol Index of the instrument is used instead.	Alphanumeric al ID	52	(See field description)	Mandatory
Strategy Code	Exchange-recognized strategy code	Alphanumeric al ID	1	(See field description)	Mandatory
Package Components length		Numerical	1	0..2^16-2	Mandatory
Package Components		Numerical	1	1..32	Mandatory
Leg Symbol Index	MDG proprietary identification code of the instrument leg for the strategy.	Numerical ID	4	0..2^32-2	Mandatory
Leg Ratio	Ratio of lots for the leg. For contingent trades, the delta.	Quantity	4	0..2^32-2	Mandatory
Leg Last Traded Price	Indicates the price of the trade for the leg (to be calculated with the Price/Index Level Decimals).	Price	8	-2^63+1..2^63-1	Optional
Leg Last Traded Quantity	Indicates the quantity of the trade for the leg (to be calculated with the Quantity Decimals).	Quantity	8	0..2^64-2	Optional

Market Status Change (1005)

The Market Status Change message provides market participants with all market events and/or market phase transitions occurring at the instrument level for cash markets, and both contract and instrument levels on derivatives markets.

The Market Status Change message informs the market of the following changes on the instrument or contract:

- Book State
- Instrument State
- Status Reason
- Phase Qualifier
- Trading Period
- Trading Side
- Order Entry Qualifier
- Session
- Price Limits
- Scheduled Event

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Message Sending Rules

The Market Status Change message is sent:

- Scheduled status changes, event changes or a combination from the previous according to the predefined pattern of Trading Groups/Contracts (i.e. uncrossing of a contract, transition from one session to the next one, …)
- Unscheduled status changes (i.e. reservation of an instrument, suspension of an instrument, …)

This message is sent on cash at the instrument level and on derivatives at the contract level. However, on derivatives, when an instrument does not follow any more the contract status or follows again the contract status (for example after a reservation), a specific Market Status Change message is sent for the instrument. This happens in the following cases:

- Instrument intra-day creation
- Instrument suspension by Market Operations
- Instrument expiration
- Instrument reservation due to Static Collars
- Instrument reservation due to Future Limit Interruption Protection (FLIP)
- Instrument reservation due to dynamic collar breach
- Instrument reopening following a reservation

A derivative instrument which behaves "normally" (i.e. follows its contract status), is considered to be in a "Scheduled" status.

For Structured Products segment, one Market Status Change message is sent per instrument at each session change (transition from session 1 to session 3 and from session 3 to session 4).

Status changes following the predefined pattern

A Market Status Change (1005) message is sent to notify each phase change or event triggering as defined in the Timetable (1006) message.

On an exceptional basis, scheduled hours of a timetable can be modified by Market Operations. In that case a new Timetable message is sent, and subsequent Market Status Change messages will follow this new pattern.

Following is an example of content that are sent in Market Status Change message through the day.

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- For Cash:

	Start Of the Trading Day (not in pattern)	First Closed Phase defined in the timetable	First Call phase defined in the timetable	First Uncrossing phase defined in the Timetable	Continuous Phase	Last Call Phase defined in the timetable	Last Uncrossing Phase defined in the timetable	TAL	Last Closed Phase defined in the timetable	End Of the Trading Day
Market Data Change Type	Status Change(s) (0)									
Event Time	Time when the change is effective									
Book State	Inaccessible (1)	Closed (2)	Call (3)	Uncrossing (4)	Continuous (5)	Call (3)	Uncrossing (4)	Continuous (5)	Closed (2)	Inaccessible (1)
Status	Scheduled (0)									
Phase Qualifier[5]	No Qualifier (0000000001)	No Qualifier (0000000001)	No Qualifier (0000000001)	No Qualifier (0000000001) Or Random Uncrossing (0000001000)	No Qualifier (0000000001) Or Random Uncrossing (0000001000)	No Qualifier (0000000001) Or Quoting Period (1000000000)	No Qualifier (0000000001) Or Random Uncrossing (0000001000)	Trading At Last (0000000100) Or Trading At Last and Random Uncrossing (0000001100)	No Qualifier (0000000001)	No Qualifier (0000000001)
Trading Period	Opening (1)	Opening (1)	- Opening (1) if there is another Call in the timetable - Closing (3) if there is no other Call in the timetable	- Opening (1) if there is another Call in the timetable - Closing (3) if there is no other Call in the timetable	Standard (2) or Closing (3)	Closing (3)	Closing (3)	Standard (2) or Closing (3)	Closing (3)	Closing (3)
Trading Side	Null	Null	- Both (4) for Cash RM - Bid Only (1), Offer Only (2), PAKO (3) or Both (4) for Warrants	- Both (4) for Cash RM - Bid Only (1), Offer Only (2), PAKO (3) or Both (4) for Warrants	- Both (4) for Cash RM - Bid Only (1), Offer Only (2), PAKO (3) or Both (4) for Warrants	- Both (4) for Cash RM - Bid Only (1), Offer Only (2), PAKO (3) or Both (4) for Warrants	- Both (4) for Cash RM - Bid Only (1), Offer Only (2), PAKO (3) or Both (4) for Warrants	- Both (4) for Cash RM - Bid Only (1), Offer Only (2), PAKO (3) or Both (4) for Warrants	Null	Null
Order Entry Qualifier	Order Entry/Cancel/ Modify Disabled (0)	Any	Any	Any	Any	Any	Any	Any	Any but Order Entry / Cancel / Modify	Order Entry / Cancel / Modify Disabled (0)
...	...	...	...	...	...	...	...	...	...	...

[5] Potentially combined with Bit 6 (Stressed Markets Conditions) or Bit 7 (Exceptional Markets Conditions) and in Call Phase only with Bit 10 (Execution Prevention Across All Firms)

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	Start Of the Trading Day (not in pattern)	First Closed Phase defined in the timetable	First Call phase defined in the timetable	First Uncrossing phase defined in the Timetable	Continuous Phase	Last Call Phase defined in the timetable	Last Uncrossing Phase defined in the timetable	TAL	Last Closed Phase defined in the timetable	End Of the Trading Day
...	...									
Session	Always set to 1 for all segments except Structured Products segment - 1, 2 or 3 for Structured Products segment									
Scheduled Event	Null				Null Or 16 (Closing Price) for Session 3	Null			Null Or 16 (Closing Price)	Null
Scheduled Event Time	Null									

- For Derivatives:

Scheduled Event Notifications are sent on derivatives (i.e. Expiry notification to indicate the expiry time within a contract).

	Start Of the Trading Day (not in pattern)	First Closed Phase defined in the timetable	First Call phase defined in the timetable	First Uncrossing phase defined in the timetable	Continuous Phase	Expiry Event	Last Closed Phase defined in the timetable	End Of the Trading Day
Market Data Change Type	Status Change(s) (0)	Status Change(s) (0)	Status Change(s) (0)	Status Change(s) (0)	Status Change(s) (0)	Scheduled Event Notification (1)	Status Change(s) and Scheduled Event Notification (2)	Inaccessible (1)
Event Time	Time when the change is effective	Time when the change is effective	Time when the change is effective	Time when the change is effective	Time when the change is effective	Time when the event notification is generated	Time when the change is effective	Time when the change is effective
Book State	Inaccessible (1)	Closed (2)	Call (3)	Uncrossing (4)	Continuous (5)	Continuous (5)	Closed (2)	Inaccessible (1)
Status Reason	Waiting for Tradable State (16)	Scheduled (0)	Scheduled (0)	Scheduled (0)	Scheduled (0)	Scheduled (0)	Scheduled (0)	Scheduled (0)
Phase Qualifier			No Qualifier (00000001)					
Trading Period	Opening (1)	Opening (1)	- Opening (1) if there is another Call in the timetable	- Opening (1) if there is another Call in the timetable	Standard (2)	Standard (2)	Closing (3)	Closing (3)

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			- Closing (3) if there is no other Call in the timetable	- Closing (3) if there is no other Call in the timetable				
Trading Side			Null					
Order Entry Qualifier	Order Entry/Cancel/Modify Disabled (0)	Any (Default value is Cancel and Modify Only (2))	Any	Any	Any	Any	Any	Any
Session	Null	Null	Null	Null	Null	Null	Null	Null
Scheduled Event	Null	Null	Null	Null	Null	Expiry (5)	Null	Null
Scheduled Event Time	Null	Null	Null	Null	Null	Set to the effective Expiry time	Null	Null

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Each time a Market Status Change message is sent, the full information on the status is provided. The information that changes can be identified using the "Market Data Change Type" field.

FIELD	SHORT DESCRIPTION	FORMAT	LEN	VALUES	PRESENCE
Market Data Sequence Number	Assigned by MDG for each message. Each channel has its own Market Data Sequence Number sequence.	Sequence	8	0..2^64-2	Mandatory
Rebroadcast Indicator	Indicates if this message is resent or new (1 if resent, 0 otherwise). For a snapshot, this field will always be set to '1'.	Numerical ID	1	0..2^8-2	Mandatory
EMM	Defines the Exchange Market Mechanism applied on each platform.	Enumerated	1	(See field description)	Mandatory
MarketStates length	Repeating Section Header	Numerical	1	0..2^16-2	Mandatory
MarketStates occurrences	Repeating Section Header	Numerical	1	1..254	Mandatory
Market Data Change Type	Type of scheduled change.	Enumerated	1	0 Status Change(s) 1 Scheduled Event Notification 2 Status Change(s) and Scheduled Event Notification	Mandatory
Symbol Index	Exchange identification code of the instrument/contract.	Numerical ID	4	0..2^32-2	Mandatory
Event Time	Time when an event has been processed	Epoch Time in Nanoseconds	8	0..2^64-2	Mandatory
Book State	Indicates the state of the book resulting of the current timetable phase, current contract/instrument state and current contract/trading group state.	Enumerated	1	(See field description)	Optional
Status Reason	Provides the reason for Book State changes.	Enumerated	1	(See field description)	Optional
Phase Qualifier	Indicates the Phase Qualifier.	Bitmap	2	(See field description)	Mandatory
Trading Period	Provides the current trading period.	Enumerated	1	1 Opening (Cash and Derivatives) 2 Standard (Cash and Derivatives) 3 Closing (Cash and Derivatives)	Optional
Trading Side	Indicates the Trading Side.	Enumerated	1	1 Bid Only (Cash Only) 2 Offer Only (Cash Only) 3 PAKO (Cash Only) 4 Both Sides (Cash Only)	Optional

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FIELD	SHORT DESCRIPTION	FORMAT	LEN	VALUES	PRESENCE
Price Limits1	Indicates the Price Limits mode	Enumerated	1	1 Price Limits Enabled - Normal (Derivatives Only) 2 Price Limits Enabled - Wide (Derivatives Only) 3 Price Limits Enabled – Widest (Derivatives Only) 4 Price Limits Disabled (Derivatives Only)	Optional
Quote Spread[1] Multiplier	Indicates the Quote Spread Multiplier	Enumerated	1	1 Quote Spread Multiplier 1 (Derivatives Only) 2 Quote Spread Multiplier 2 (Derivatives Only) 3 Quote Spread Multiplier 3 (Derivatives Only)	Optional
Order Entry Qualifier	Field indicating the state of the Order Entry for the current market state.	Enumerated	1	0 Order Entry/Cancel/Modify Disabled 1 Order Entry/Cancel/Modify Enabled 2 Cancel and Modify Only (Derivatives Only) 3 Cancel Only	Optional
Session	Current market session.	Enumerated	1	(See field description)	Mandatory
Scheduled Event	Type of Scheduled Event.	Enumerated	1	(See field description)	Optional
Scheduled Event Time	Scheduled Time for the event to happen (time in number of nanoseconds since 01/01/1970 UTC).	Epoch Time in Nanoseconds	8	0..2^64-2	Optional
Instrument State	Indicates the state of the instrument.	Enumerated	1	(See field description)	Optional

[1] - Both fields “Price Limits” and “Quote Spread Multiplier” are deprecated.

BF Instrument Suspension (1204)

The BF Instrument Suspension provides instrument status updates for the IBF Optiq segment.

The Security Condition provides the latest instrument status.

This message is sent during the trading session whenever the instrument status changes as compared to the initial instrument condition provided by the BF Instrument Reference (1201) message or to a previous BF Instrument Suspension (1204) message.

FIELD	SHORT DESCRIPTION	FORMAT	LEN	VALUES	PRESENCE
Market Data Sequence Number	Assigned by MDG for each message. Each channel has its own Market Data Sequence Number sequence.	Sequence	8	From 0 to 2^64-2	Optional
Rebroadcast Indicator	Indicates if this message is resent or new (1 if resent, 0 otherwise). For a snapshot, this field will always be set to '1'.	Numerical ID	1	From 0 to 2^8-2	Mandatory

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FIELD	SHORT DESCRIPTION	FORMAT	LEN	VALUES	PRESENCE
Symbol Index	Exchange identification code of the instrument/contract.	Numerical ID	4	From 0 to 2^32-2	Mandatory
Event Time	Time when an event has been processed	Epoch Time in Nanoseconds	8	From 0 to 2^64-2	Mandatory
Security Condition	Security status.	Enumerated	2	(See field description)	Optional

Statistics (1009)

This message provides statistics on prices and volumes on an instrument which comprises the following:

- High and Low Prices
- Percentage Variation Previous Close
- Percentage Variation Previous NAV
- Last Traded Price
- Variation Last Price
- Open Price
- Trade Count
- Cumulative quantities

Stats Update Type

The following table lists the statistics available per instrument:

Stats Update Type	On-exchange on-book[6]											On-exchange off-book	Off-exchange off-book
	Warrants & Certificates		Fixed Income		ETFs		French and Dutch funds	Cash Equities		Indices	Equity, Index, Financial, & Commodity Derivatives		
	Val.	All other	Val.	All other	Val.	All other		Val.	All other				
1 – Percent Variation Previous NAV (Cash Only)					X	X							
5 – Daily High (Cash and Derivatives)	X	X	X	X	X	X		X	X	X	X		
6 – Daily Low (Cash and Derivatives)	X	X	X	X	X	X		X	X	X	X		
7 – Yearly High (Derivatives)											X		
8 – Yearly Low (Derivatives Only)											X		
9 – Lifetime Low (Derivatives Only)											X		
10– Lifetime Low											X		

[6] On-Exchange Off-Book (OEOB) covers multiple types of activity, that are identified in the EMM field. References to OEOB below comprise the following EMMs: For the Cash markets: 5 = Cash On Exchange Off book; For the Derivatives markets: 4 = Derivative Wholesales and 7 = Derivative On Exchange Off book.

Valuation prices computation generates some *Stats Update Type* which are identified under the column "Val."

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Stats Update Type	On-exchange on-book[6]											On-exchange off-book	Off-exchange off-book
	Warrants & Certificates		Fixed Income		ETFs		French and Dutch funds	Cash Equities		Indices	Equity, Index, Financial, & Commodity Derivatives		
	Val.	All other	Val.	All other	Val.	All other		Val.	All other				
(Derivatives Only)													
14 – Variation Last Price (Cash Only)	X	X	X	X	X	X		X	X				
15 – Open Price (Cash and Derivatives)	X	X	X	X	X	X		X	X	X	X		
16 – Trade Count (Cash and Derivatives)		X		X		X			X		X		
17 – Last Traded Price (Cash and Derivatives)	X	X	X	X	X	X	X	X	X		X		
18 – Percent Variation Previous Close (Cash and Derivatives)	X	X	X	X	X	X		X	X	X	X		
19 – Off Book Cumulative Quantity (Cash and Derivatives)												X	
21 – On Book Auction Cumulative Quantity (Cash Only)		X		X		X			X				
22 – On Book Continuous Cumulative Quantity (Cash Only)		X		X		X			X				
23 – On and Off Book Cumulative Quantity (Cash and Derivatives)		X		X		X			X		X	X	

Message Sending Rules

The Statistics message is sent each time a statistic value is modified.

High and Low

- Daily High: Highest traded price for the current trading day (to be calculated with the Price / Index Level Decimals).
- Daily Low: Lowest traded price for the current trading day (to be calculated with the Price / Index Level Decimals).
- Lifetime High: Highest traded price for the instrument lifetime for booked trades only (to be calculated with the Price / Index Level Decimals).
- Lifetime Low: Lowest traded price for the instrument lifetime for booked trades only (to be calculated with the Price / Index Level Decimals).

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Note: Leg prices that are calculated by the leg price algorithm following a strategy trade are not taken into account in the High/low values provided.

Cumulative quantities

MDG will deliver 4 (four) cumulative quantity fields that will allow clients to compute all possible statistics based on this. These fields are:

- Off Book Cumulative Quantity: Cumulated volume traded outside the central order book and on regulated market since the start of the current trading session (to be calculated with the Quantity Decimals).
- On Book Auction Cumulative Quantity: Cumulated volume of regulated market trades done in Auction phase since the start of the current trading session (to be calculated with the Quantity Decimals).
- On Book Continuous Cumulative Quantity: Cumulated volume of regulated market trades done in Continuous phase since the start of the current trading session (to be calculated with the Quantity Decimals).
- On and Off Book Cumulative Quantity: Cumulated volume of trades on regulated market (in or outside the central order book) since the start of the current trading session (to be calculated with the Quantity Decimals). This is the sum of Off Book Cumulative Quantity, On Book Auction Cumulative Quantity and On Book Continuous Cumulative Quantity.

Statistics will not be provided for off-exchanges off-book trades. The "Off Book Cumulative Quantity" will only be provided for the on-exchange off-books trades.

Note: Check …Determine the Statistics On and Off-Book for an instruments (COB, Wholesales & RFC) for more information regarding Statistics On and Off Book for Wholesales.

Other Statistics

- Percentage Variation Previous NAV: Percentage of variation for last Net Asset value. Only provided for NAV book.
- Percentage Variation Previous Close: Percentage of variation for price (or index) versus Last Adjusted Closing Price (LACP).
- Variation Last Price: Percentage variation of price with last reference price.
- Last Traded Price: The Last Traded Price indicates the price of last fill on an instrument.
- Open Price: Opening Price of the instrument.
- Trade Count: The number of trades done intra-day on the instrument.

– For cash it is only for on-book trades.
– For derivatives it is for both on-book and off-book on exchange.

Decimals for Statistics

For Statistics, the decimal field to apply on the "Stats Update Value" field will depend on the "Stats Update Type" field as follow:

- For prices and index levels, use the "Price/Index Decimals" field for:

– High and Low (Stats Update Types: 5 to 10)
– Open Price (Stats Update Type: 15)
– Last Traded Price (Stats Update Type: 17)

- For quantities, use the "Quantity Decimals" field for:

– Cumulative Quantities (Stats Update Types: 19 to 23)

- For Ratio, use the « Ratio / Multiplier Decimals" field for:

– Percentage Variation Previous NAV (Stats Update Type: 1)
– Variation Last Price (Stats Update Type: 14)
– Percentage Variation Previous Close (Stats Update Type: 18)

Trade cancellation in statistics

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In case of a trade cancellation the statistics message will broadcast all the statistics updates. If the cancellation cancelled the only trade and there is no Valuation Price, then the statistics will be set to null except for the Trade Count and the cumulative quantities.

Statistics after HA (applied both to cash and derivatives)

The first statistics messages after a MDG HA will carry the most accurate and up to date statistics since some trades may not have been persisted (Clients can detect the a MDG restart with the "Packet Flags" when counter on bits between position 1 and 3 changes).

FIELD	SHORT DESCRIPTION	FORMAT	LEN	VALUES	PRESENCE
Market Data Sequence Number	Assigned by MDG for each message. Each channel has its own Market Data Sequence Number sequence.	Sequence	8	0..2^64-2	Mandatory
Rebroadcast Indicator	Indicates if this message is resent or new (1 if resent, 0 otherwise). For a snapshot, this field will always be set to '1'.	Numerical ID	1	0..2^8-2	Mandatory
Symbol Index	Exchange identification code of the instrument/contract.	Numerical ID	4	0..2^32-2	Mandatory
NewStats length	Repeating Section Header	Numerical	1	0..2^16-2	Mandatory
NewStats occurrences	Repeating Section Header	Numerical	1	1..254	Mandatory
Stats Update Type	Indicates the type of published statistics update.	Enumerated	1	(See field description)	Mandatory
Stats Update Value	Indicates the value of the published statistics update.	Signed Numerical	8	(See field description)	Optional

Real Time Index (1008)

A Real-Time Index message handles the real-time characteristics of an index: the level of the index, type of index level (opening index level, real-time, indicative level) and various indicators for the instruments that make up the index. This message is sent for:

- Stock Indices
- Strategy Indices
- Volatility Indices
- Indicative Net Asset Value (iNAV) of an ETF

Message Sending Rules

Sending of these messages for a given index is conditioned by a flag configured at the index level. These conditions and the nature of these messages that are sent for each index are dependent on two factors:

- The publication mode of the index; there are three publication modes:
  - Continuous: Calculated index levels are published periodically, at a frequency that can be configured for each index. Currently an index that is published continuously can either be published every 15 seconds or every 30 seconds.
  - Discontinuous: A single Closing level (level 5) before the provisional closing phase, occurring at a time (a 'fixed time') that can be configured for each index
  - At closing only: No broadcast before the provisional closing phase
- The current calculation phase of the index

The following sections provide an overview of the different conditions at which an index level can be sent.

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CAC 40 Index

At System Start-up

The Closing level of the index of the previous trading day (level 5) is sent at the start of each trading day in the referential.

During the Trading Session

Opening Kinematics

At the reception of the first trade price of any instrument that is part of the composition of the CAC 40, the index moves into the Session phase. If at this point 65% or more of the market cap of the index has traded, the Official Opening level (level 1) is calculated and published. The Official Opening level is based on the last trade prices or the last-adjusted closing price if a last traded price is not available. Subsequently, real-time Session levels (level 2) are calculated and published every 15 seconds.

If, at the opening of the index, less than 65% of the market cap of the index has traded, an Automatic Indicative level (level 3) is published every 15 seconds following the opening of the market until at least 65% of the market cap of the index has traded. Once this threshold of 65% has been reached (and the index is not in the 'Indicative' phase), the Official Opening level (level 1) is calculated and published. Subsequently, real-time Session levels (level 2) are calculated and published every 15 seconds.

For most other French indices, there are two thresholds that need to be reached for the index to send an official opening level:

At the opening of the market, at least 65% of the market cap needs to have traded. If at the opening of the market this threshold of 65% has not been reached, an Automatic indicative level (level 3) is sent every 15 seconds.

The Automatic indicative level continues to be sent every 15 seconds until a second threshold has been reached. For most French indices this second threshold is configured at 95% of the market cap. Once this second threshold has been reached, the Official Opening level (level 1) is calculated and published. Subsequently, real-time Session levels (level 2) are calculated and published every 15 seconds.

If the index remains in an Automatic Indicative state the entire day, the last Automatic Indicative index level (level 3) is considered to be the official close. (There is no official opening level in this case.)

As soon as 100% of the market cap of the non-regulated-halted constituents of the index has traded (and the index is not in 'indicative' state), the Reference level (level 4) is calculated and broadcasted. This level is calculated using only the opening (first trade) prices of its constituents.

Following the Opening

Once the Official Opening level (level 1) has been published, the real-time Session levels (level 2) are calculated and published every 15 seconds.

In the case of an 'Indicative' Phase:

The compiler can decide, following the opening of the index, to change the status of the index. This decision can be made if it is believed that circumstances prevent the proper calculation of the index. In this case, instead of the real-time Session level (level 2), an indicative level (level 0) is sent every 15 seconds. This level 0 is calculated by using the last-traded price or the last-adjusted closing price if a last traded price is not available.

The index levels that are calculated during the 'Indicative' status of an index are not taken into account to update the highest and the lowest levels of the index.

Once the compiler is sure that the index level is representative again, the real-time index levels (level 2) are calculated and published again every 15 seconds.

Options Liquidation Index (Level 7) for CAC 40

Definition / Purpose

- The liquidation index is used as a basis for the automatic exercise of options that are within the price range on their expiration date, as well as for the calculation of resulting payments.
- It is the average of the index level calculated every 15 seconds between 15:40 (CET) and 16:00 (CET). The result of the calculation is published every 15 seconds during the same time interval.

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- This average is sent at each expiry date.

At the End of the Trading Day

When all Index instruments are closed, the index moves into the Temporary Closing phase. On a normal trading day, this occurs around 18:00:00 (CET). During this phase, the first Closing level (level 5), the first confirmation of the Reference level (level 6) and the first Index Summary message (message 1011) are published. During the Temporary Closing phase, Euronext can make any necessary adjustments to the index if deemed necessary. The Temporary Closing phase currently lasts 5 minutes.

At the end of the Closing delay, the index moves into the Final Closing phase. The second Closing level, the second confirmation of the Reference level (level 6) and the second Index summary message (message 1011) are published. Any adjustments that are made during the Temporary Closing Phase are taken into account in the second Closing level and the Index Summary message.

The first and second Closing levels (level 5) are calculated based on the last trades of the instruments that take part in the index. This level represents the official Closing Reference Level of the CAC 40.

The confirmation of the Reference level (level 6) is calculated using only the opening (first trade) prices of its constituents not taking into account any cancellation of opening trades.

AEX Index, BEL 20 Index and PSI 20 Index

At System Start-up

The Closing level of the index of the previous trading day (level 5) is sent at the start of each trading day in the referential.

During the Trading Session

Opening Kinematics

At the reception of the first trade price of any instrument that is part of the composition of the index, the index moves into the Session phase. If at this point 100% or more of the market cap of the index has traded, the Official Opening level (level 1) is calculated and published. The Official Opening level is based on the last trade prices, including previous day, adjusted closing prices. Subsequently, real-time Session levels (level 2) are calculated and published every 15 seconds.

If by 9:05 the threshold of 100% is still not met, the threshold is dropped to 80% (second threshold). As soon as 80% of the market cap is available any time after 09:05, the Official Opening level (level 1) is calculated and published followed by real-time Session levels (level 2).

From the opening of the index up until the first or second threshold is met, an Automatic Indicative level (level 3) is published every 15 seconds.

If the index remains in an Automatic Indicative state the entire day, the last Automatic Indicative index level (level 3) is considered to be the official close. (There is no official opening level in this case.)

Following the Opening

Once the Official Opening level (level 1) has been published, the real-time Session levels (level 2) are calculated and published every 15 seconds.

In the case of an 'Indicative' Phase:

The compiler can decide, following the opening of the index, to change the status of the index. This decision can be made if it is believed that circumstances prevent the proper calculation of the index. In this case, instead of the real-time Session level (level 2), an indicative level (level 0) is sent every 15 seconds. This level 0 is calculated by using the last-traded price or the last-adjusted closing price if a last-traded price is not available.

The index levels that are calculated during the 'Indicative' status of an index are not taken into account to update the highest and the lowest levels of the index.

Once the compiler is sure that the index level is representative again, the real-time index levels (level 2) are calculated and published again every 15 seconds.

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Options Liquidation Index (Level 7) for AEX Index

Definition / Purpose

- The liquidation index is used as a basis for the automatic exercise of options that are within the price range on their expiration date, as well as for the calculation of resulting payments.
- It is the average of the index level calculated every 1 minute between 15:30 (CET) and 16:00 (CET). The result of the calculation is published every minute during the same time interval.

At the End of the Trading Day

When all Index instruments are closed, the index moves into the Temporary Closing phase. On a normal trading day this occurs around 18:00:00 (CET). During this phase, the first Closing level (level 5) and the first Index Summary message (message 1011) are published. During the Temporary Closing phase, Euronext can make any necessary adjustments to the index if deemed necessary. The temporary Closing phase currently lasts 5 minutes.

At the end of the Closing delay, the index moves into the Final Closing phase. The second Closing level (level 5) and the second Index Summary message (message 1011) are published. Any adjustments that are made during the Temporary Closing Phase are taken into account in the second closing level and the Index Summary message.

The first and second Closing levels (level 5) are calculated based on the last trades of the instruments that take part of the composition of the index. This level represents the official Closing Reference Level of the index.

End of Day Innovative Indices

As there is no Temporary Closing phase for this type of indices then a single Real Time Index (1008) message is sent, once the index moved to the final closing phase, to broadcast the closing level (level 5).

FIELD	SHORT DESCRIPTION	FORMAT	LEN	VALUES	PRESENCE
Market Data Sequence Number	Assigned by MDG for each message. Each channel has its own Market Data Sequence Number sequence.	Sequence	8	0..2^64-2	Mandatory
Rebroadcast Indicator	Indicates if this message is resent or new (1 if resent, 0 otherwise). For a snapshot, this field will always be set to '1'.	Numerical ID	1	0..2^8-2	Mandatory
EMM	Defines the Exchange Market Mechanism applied on each platform.	Enumerated	1	(See field description)	Mandatory
Event Time	Time when an event has been processed	Epoch Time in Nanoseconds	8	0..2^64-2	Mandatory
Symbol Index	Exchange identification code of the instrument/contract.	Numerical ID	4	0..2^32-2	Mandatory
Index Level	The value of the last level for the index that is the subject of this message (to be calculated with the Price/Index Level Decimals).	Price	8	(See field description)	Mandatory
Percentage of Capitalization	Percentage of capitalization for the active instruments in the index (to be calculated with the Ratio / Multiplier Decimals).	Numerical	8	0..2^64-2	Optional
Percentage Var from Prev Close	Percentage of variation for last price (or index) versus previous closing price (or closing reference price) (to be calculated with the Ratio / Multiplier Decimals).	Signed Numerical	8	(See field description)	Mandatory
Number Of Traded Instruments in Index	Number of traded instruments in the index.	Quantity	2	0..2^16-2	Optional

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FIELD	SHORT DESCRIPTION	FORMAT	LEN	VALUES	PRESENCE
Index Level Type	Type of Index Level.	Enumerated	1	(See field description)	Mandatory
Index Price Code	Type of Price as positioned in Session High/Low or to indicate the trend or at the contrary the reference value from which the price may change.	Enumerated	1	(See field description)	Mandatory

Index Summary (1011)

The Index Summary message is sent twice at the end of the day in order to disseminate the final statistics related to an index, which aggregates daily data.

Message Sending Rules

Every trading day, for each index type 'stock index', two types of index summary messages are sent (this rules out iNAVs, End of Day Innovative Indices):

- The first summary is sent when the index enters the provisional closing phase.
- The second summary is sent when the index enters the final closing phase.

End of Day Innovative Indices

As there is no provisional closing phase for this type of indices then a single Index Summary (1011) message is sent to indicate that the index moved to the final closing phase.

FIELD	SHORT DESCRIPTION	FORMAT	LEN	VALUES	PRESENCE
Market Data Sequence Number	Assigned by MDG for each message. Each channel has its own Market Data Sequence Number sequence.	Sequence	8	0..2^64-2	Mandatory
Rebroadcast Indicator	Indicates if this message is resent or new (1 if resent, 0 otherwise). For a snapshot, this field will always be set to '1'.	Numerical ID	1	0..2^8-2	Mandatory
EMM	Defines the Exchange Market Mechanism applied on each platform.	Enumerated	1	(See field description)	Mandatory
Event Time	Time when an event has been processed	Epoch Time in Nanoseconds	8	0..2^64-2	Mandatory
Symbol Index	Exchange identification code of the instrument/contract.	Numerical ID	4	0..2^32-2	Mandatory
Opening Level	Official Opening Index Level. This level corresponds to the Index Level Type 1 of the Real Time Index (1008) of the corresponding index (to be calculated with the Price/Index Level Decimals).	Price	8	(See field description)	Mandatory
Opening Time	Time of Official Opening level (Time in number of nanoseconds since 01/01/1970 UTC).	Epoch Time in Nanoseconds	8	0..2^64-2	Mandatory
Confirmed Reference Level	Confirmed Reference level. This level corresponds to the index Level Type 6 of the message Real Time Index (1008) of the corresponding index (to be calculated with the Price/Index Level Decimals).	Price	8	(See field description)	Optional

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FIELD	SHORT DESCRIPTION	FORMAT	LEN	VALUES	PRESENCE
Confirmed Reference Time	Time of (Confirmed) Reference level (Time in number of nanoseconds since 01/01/1970 UTC).	Epoch Time in Nanoseconds	8	0..2^64-2	Optional
Closing Reference Level	Reference closing index level. This level corresponds to the Index Level Type 5 of the message Real Time Index (1008) of the corresponding index (to be calculated with the Price/Index Level Decimals).	Price	8	(See field description)	Mandatory
Closing Reference Time	Time of provisional closing reference index level (Time in number of nanoseconds since 01/01/1970 UTC).	Epoch Time in Nanoseconds	8	0..2^64-2	Mandatory
Percentage Var from Prev Close	Percentage of variation for last price (or index) versus previous closing price (or closing reference price) (to be calculated with the Ratio / Multiplier Decimals).	Signed Numerical	8	(See field description)	Mandatory
High Level	Highest index level (to be calculated with the Price/Index Level Decimals).	Price	8	(See field description)	Mandatory
High Time	Time of provisional highest index level (Time in number of nanoseconds since 01/01/1970 UTC).	Epoch Time in Nanoseconds	8	0..2^64-2	Mandatory
Low Level	Lowest index level (to be calculated with the Price/Index Level Decimals).	Price	8	(See field description)	Mandatory
Low Time	Time of provisional lowest index level (Time in number of nanoseconds since 01/01/1970 UTC).	Epoch Time in Nanoseconds	8	0..2^64-2	Mandatory
Liquidation Level	Index Level of reference at expiration settlement (to be calculated with the Price/Index Level Decimals).	Price	8	(See field description)	Optional
Liquidation Time	Time of provisional expiration settlement index level (Time in number of nanoseconds since 01/01/1970 UTC).	Epoch Time in Nanoseconds	8	0..2^64-2	Optional

SNAPSHOT MESSAGES

The Snapshot mechanism uses the same messages as the real-time feed.

When used for the snapshot, the messages have the field "Rebroadcast Indicator" set to "1".

MESSAGE	PURPOSE	SENDING RULES
Start Of Snapshot (2101)	Defines the start of a snapshot sequence on all channels	This is the first message of a snapshot sequence. It contains the last Market Data Sequence Number from real-time that is contained in this snapshot sequence.
End Of Snapshot (2102)	Defines the end of a snapshot sequence on all channels	This is the last message of a snapshot sequence. It contains the last Market Data Sequence Number from real-time that is contained in this snapshot sequence.
Outright Standing Data (1014) Strategy Standing Data (1012)	Provides all the characteristics of instruments	Only intraday instrument creation will be snapshotted. For all other standing data please refer to the file servers.
Timetable (1006)	Provides all the scheduled events for the instruments	Only intraday modifications will be snapshotted. Otherwise, use the file servers to retrieve data.

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MESSAGE	PURPOSE	SENDING RULES
Start Of Snapshot (2101)	Defines the start of a snapshot sequence on all channels	This is the first message of a snapshot sequence. It contains the last Market Data Sequence Number from real-time that is contained in this snapshot sequence.
End Of Snapshot (2102)	Defines the end of a snapshot sequence on all channels	This is the last message of a snapshot sequence. It contains the last Market Data Sequence Number from real-time that is contained in this snapshot sequence.
Market Status Change (1005)	Notifies of a market status change along with its reason	Only the last applicable Market Status Change per Symbol Index and EMM will be sent.
Market Update (1001) for BBO (with Market Data Update Type set to "1" or "2" only)	Provides the Best Bid and the Best Offer for each instrument	Only the last Best Bid and the last Best Offer will be resent.
Market Update (1001)	Allows clients to rebuild the book with full depth	Only for market by limits.
Order Update (1002)		Only for market by orders.
Price Update (1003)	Provides all last updated reference prices	Only last Price Update, for each Market Data Price Type, will be sent.
Full Trade Information (1004)	Provides Trade reporting for last trades	Only last 50 intraday trades and if they are not older than 15 minutes, for the whole instrument set on a given channel will be resent.
APA Full Trade Information (1028)	Provides Trade reporting for last trades	Only last 100 intraday trades and if they are not older than 15 minutes, for the whole instrument set on a given channel will be resent.
APA Quotes (1026)	Provides full statistics per instruments	The last quotes on each side for all instruments and for each LEI.
APA Standing Data (1027)	Provides end of day index summary	Only last 100 intraday referential and if they are not older than 15 minutes, for the whole instrument set on a given channel will be resent.
Statistics (1009)	Provides full statistics per instruments	Only last statistics will be sent. Clients might receive, in snapshot, statistics for an instrument in more than one packet.
Index Summary (1011)	Provides end of day index summary	Only the last message will be resent.
Real Time Index (1008)	Provides real-time index data	Only the last message will be resent.

Any message that is not in the above table will not be disseminated using the Snapshot mechanism.

Technical messages in Snapshot channels

Start of Day, Health Status and End of Day are also sent on the snapshot channels. They are not part of the Snapshot Sequence and should be processed separately by the clients. Customers need to take into account that they can also be sent between a Start of Snapshot and an End of snapshot messages.

In the Health Status, still on the snapshot channels, the Market Data Sequence Number is the MDSN of the last message sent by the aggregator of this channel. Please note that this Market Data Sequence Number may be different from the Last Market Data Sequence Number in the Start / End of Snapshot messages that matches the last real time message taken into account to build the snapshot.

Snapshot Sequence behaviour

The snapshot sequences start as soon as MDG is ready to broadcast messages (and not after the first real-time message is sent on the real-time channels) and stops only when MDG stops. So, Start of Day, Health Status and End of Day messages will be sent along with the snapshots at the beginning of the day, during the day and at the end of the day respectively. At the beginning of the day the snapshots will contain only Start of Snapshot and End

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of Snapshot messages with no snapshotted messages in between and the Market Data Sequence Number in Start of Snapshot and End of Snapshot will be set to null.

The minimum period between two snapshot sequences for a given channel is set to 2 seconds all along the day.

The snapshot sequence provides messages for all instruments of the channel at the same time, as opposed to instrument by instrument.

Start Of Snapshot (2101)

Provides the Market Data Sequence Number of the last real-time message processed for this snapshot.

Last Market Data Sequence Number is set to null at the beginning of the day until another message than **Start Of Day** (1101) is broadcasted.

Message Sending Rules:

Start Of Snapshot message is always the first message of a snapshot sequence, and indicates the beginning of a snapshot sequence.

FIELD	SHORT DESCRIPTION	FORMAT	LEN	VALUES	PRESENCE
Last Market Data Sequence Number	Indicates the Market Data Message Sequence Number of the last real-time message processed for this snapshot.	Sequence	8	0..2^64-2	Optional
Snapshot Time	Indicates the time when snapshot generation has respectively started/ended in the Start Of Snapshot/End Of Snapshot message (Time in number of nanoseconds since 01/01/1970 UTC).	Epoch Time in Nanoseconds	8	0..2^64-2	Mandatory

End Of Snapshot (2102)

The End Of Snapshot message indicates the end of a snapshot sequence.

It provides the Market Data Sequence Number of the last real time message processed for this snapshot. It also indicates that processing queued messages from the real-time feed with a higher Market Data Sequence member is now possible.

Message Sending Rules

End Of Snapshot message is always the last message of a snapshot sequence.

FIELD	SHORT DESCRIPTION	FORMAT	LEN	VALUES	PRESENCE
Last Market Data Sequence Number	Indicates the Market Data Message Sequence Number of the last real-time message processed for this snapshot.	Sequence	8	0..2^64-2	Optional
Snapshot Time	Indicates the time when snapshot generation has respectively started/ended in the Start Of Snapshot/End Of Snapshot message (Time in number of nanoseconds since 01/01/1970 UTC).	Epoch Time in Nanoseconds	8	0..2^64-2	Mandatory

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FIELD DESCRIPTION

A

Amount Decimals

FIELD NAME	AMOUNT DECIMALS
Description	Indicates the number of decimals for each Amount related to this Symbol Index
Format	Decimal Places (unsigned integer 8)
Length	1
Possible Values	0..2^8-2 Null value: 2^8-1
Used In	Standing Data (1007) Contract Standing Data (1013) BF Instrument Reference (1201)
User For	Cash and Derivatives

Anonymous

FIELD NAME	ANONYMOUS
Description	Indicates if the Market Data notifications on the instrument are anonymous or not. (0: Non Anonymous – Member Firm ID published ; 1: Anonymous – Member Firm ID not published).
Format	Boolean
Length	1
Possible Values	0 Non Anonymous 1 Anonymous
Used In	Standing Data (1007)

APA Origin

FIELD NAME	APA ORIGIN
Description	Identification of the venue where the transaction was executed using the ISO 10383 segment MIC for transactions executed on a trading venue. For Approved Publication Arrangement (APA), only 2 possible values : - DRSP (Member Origin = Euronext UK Reporting Services) - XPAR – (Member Origin = EURONEXT PARIS).
Format	Alphanumerical ID (character)
Length	4
Possible Values	DRSP Member Origin = Euronext UK Reporting Services XPAR Member Origin = EURONEXT PARIS
Used In	APA Quotes (1026) APA Full Trade Information (1028)
Used For	Cash and Derivatives

B

Bid/Offer Date Time

FIELD NAME	BID/OFFER DATE TIME
Description	Date/time of bid/offer, expressed as number of nanoseconds since Epoch.
Format	Epoch Time in Nanoseconds (unsigned integer 64)

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FIELD NAME	BID/OFFER DATE TIME
	SBE: unsigned integer 64
Length	8
Possible Values	0..2^64-2 Null value: 2^64-1
Used In	BF Trade (1202) BF NAV (1203)
User For	Cash and Derivatives

Bid Px

FIELD NAME	BID PRICE
Description	Quote bid price, (To be calculated with Price/Index Level Decimals).
Format	Quote bid price (to be calculated with Price/Index Level Decimals).
Length	8
Possible Values	From -2^63-1 to 2^63-1
Used In	BF Trade (1202)
User For	Cash and Derivatives

Block Length

FIELD NAME	BLOCK LENGTH
Description	Length of the block. The Block is the message without the repeating sections. This is especially useful for new message versions in the 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.
Format	Numerical (unsigned integer 16)
Length	2
Possible Values	0..2^16-2 Null value: 2^16-1
Used In	SBE Header
User For	Cash and Derivatives

Block Trade Code

FIELD NAME	BLOCK TRADE CODE
Description	Indicates if trade relates to a block or a negotiated deal following EU and UK MiFID II rules.
Format	Enumerated (character)
Length	1
Possible Values	B Block Trade N Regular trade or Negotiated deal - (Hyphen) Undefined
Used In	Full Trade Information (1004)
User For	Cash

Book State

FIELD NAME	BOOK STATE
Description	Indicates the state of the book resulting of the current timetable phase, current contract/instrument state and current contract/trading group state.
Format	Enumerated (unsigned integer 8)

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FIELD NAME	BOOK STATE
Length	1
Possible Values	1 Inaccessible 2 Closed 3 Call 4 Uncrossing 5 Continuous 6 Halted 7 Continuous Uncrossing (Warrants and Certificates Only) 8 Suspended 9 Reserved Null value: 2^8-1
Used In	Market Status Change (1005)
User For	Cash and Derivatives

C

CFI

FIELD NAME	CFI
Description	Classification code of a financial instrument defined by the ISO-10962:2015 standard.
Format	Text (character)
Length	6
Used In	Standing Data (1007) Outright Standing Data (1014) Strategy Standing Data (1012) BF Instrument Reference (1201) APA Standing Data (1027)
User For	Cash and Derivatives

Channel ID

FIELD NAME	CHANNEL ID
Description	Identifies the channel. First figure defines if it is Real-Time feed (1 Production, 3 v-EUA or 5 p-EUA) or Snapshot feed (2 Production, 4 v-EUA or 6 p-EUA). Second figure identifies the MDG partition (partition 1 will start with 0 as second figure). Last 3 figures are channel identifier and it is unique and the same across the different platforms we have (v-EUA/p-EUA/Production).
Format	Numerical (unsigned integer 16)
Length	2
Possible Values	0..2^16-2 Null value: 2^16-1
Used In	Market Data Packet Header
User For	Cash and Derivatives

Closing Price

FIELD NAME	CLOSING PRICE
Description	Previous day's closing price (to be calculated with the Price / Index Level Decimals).
Format	Price (signed integer 64)

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FIELD NAME	CLOSING PRICE
Length	8
Possible Values	From -2^63-1 to 2^63-1
Used In	BF Instrument Reference (1201)
User For	Derivatives

Closing Reference Level

FIELD NAME	CLOSING REFERENCE LEVEL
Description	Reference closing index level. This level corresponds to the Index Level Type 5 of the message Real Time Index (1008) of the corresponding index (to be calculated with the Price/Index Level Decimals).
Format	Price (signed integer 64)
Length	8
Possible Values	-2^63+1..2^63-1 Null value: -2^63
Used In	Index Summary (1011)
User For	Cash

Closing Reference Time

FIELD NAME	CLOSING REFERENCE TIME
Description	Time of provisional closing reference index level (Time in number of nanoseconds since 01/01/1970 UTC).
Format	Epoch Time in Nanoseconds (unsigned integer 64) SBE: unsigned integer 64
Length	8
Possible Values	0..2^64-2 Null value: 2^64-1
Used In	Index Summary (1011)
User For	Cash

Collar Expansion Factor

FIELD NAME	COLLAR EXPANSION FACTOR
Description	Numerical coefficient applied in collar calculation.
Format	Numerical ID (unsigned integer 8)
Length	1
Possible Values	0..2^8-2 Null value: 2^8-1
Used In	Contract Standing Data (1013)

Collar Max Unhalt Nb

FIELD NAME	COLLAR MAX UNHALT NB
Description	Maximum number of automatic attempts to unhalt system performs if Dynamic Collar Logic enables unhalting. Used for Trade Price Validation (TPV).
Format	Quantity (unsigned integer 8)
Length	1
Possible Values	0..2^8-2 Null value: 2^8-1
Used In	Contract Standing Data (1013)

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Collar Unhalt Delay

FIELD NAME	COLLAR UNHALT DELAY
Description	Delay (in seconds) of automatic unhalt if Dynamic Collar Logic enables unhalting. Used for Trade Price Validation (TPV).
Format	Time (unsigned integer 32) SBE: unsigned integer 32
Length	4
Possible Values	0..2^32-2 Null value: 2^32-1
Used In	Contract Standing Data (1013)

Confirmed Reference Level

FIELD NAME	CONFIRMED REFERENCE LEVEL
Description	Confirmed Reference level. This level corresponds to the index Level Type 6 of the message Real Time Index (1008) of the corresponding index (to be calculated with the Price/Index Level Decimals).
Format	Price (signed integer 64)
Length	8
Possible Values	-2^63+1..2^63-1 Null value: -2^63
Used In	Index Summary (1011)
User For	Cash

Confirmed Reference Time

FIELD NAME	CONFIRMED REFERENCE TIME
Description	Time of (Confirmed) Reference level (Time in number of nanoseconds since 01/01/1970 UTC).
Format	Epoch Time in Nanoseconds (unsigned integer 64) SBE: unsigned integer 64
Length	8
Possible Values	0..2^64-2 Null value: 2^64-1
Used In	Index Summary (1011)
User For	Cash

Contract Event Date

FIELD NAME	CONTRACT EVENT DATE
Description	SBE additional information: (in number of days since the 1st of January 1970).
Format	Date (unsigned integer 16) SBE: unsigned integer 16
Length	2
Possible Values	0..2^16-2 Null value: 2^16-1
Used In	Contract Standing Data (1013)
User For	Derivatives

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Contract Name

FIELD NAME	CONTRACT NAME
Description	Contract Name
Format	Text (character)
Length	60
Used In	Contract Standing Data (1013)
User For	Derivatives

Contract Symbol Index

FIELD NAME	CONTRACT SYMBOL INDEX
Description	Identifies the contract of this instrument by its Symbol Index.
Format	Numerical ID (unsigned integer 32)
Length	4
Possible Values	0..2^32-2 Null value: 2^32-1
Used In	Outright Standing Data (1014) Strategy Standing Data (1012) LIS Package Trade (1016)
User For	Derivatives

Contract Trading Type

Description	Contract Trading Type.
Format	Enumerated (unsigned integer 8)
Length	1
Possible Values	1 Traded as an outright 2 Not traded, but listed in contract data. Traders may subscribe to it 3 Traded as a simple inter-commodity spread 4 Traded as an inter-commodity spread Null value: 2^8-1
Used In	Contract Standing Data (1013)
User For	Derivatives

Contract Type

Description	Generic Contract Type.
Format	Enumerated (character)
Length	1
Possible Values	F Future O Option U Underlying
Used In	Contract Standing Data (1013)
User For	Derivatives

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Country Of Exchange

Description	Country of exchange is the Country associated to the MIC following ISO 3166 Alpha-3.
Format	Alphanumerical ID (character)
Length	3
Used In	Standing Data (1007) Contract Standing Data (1013)
User For	Cash and Derivatives

Coupon

Description	Price of coupon. To be interpreted in conjunction with Price/Index Level Decimals. Applicable to Bonds only.
Format	Price (signed integer 64)
Length	8
Possible Values	From -2^63-1 to 2^63-1
Used In	BF Instrument Reference (1201)
User For	Cash

Currency

Description	Code of the currency (ISO 4217-3A).
Format	Alphanumerical
Length	3
Possible Values	(See field description)
Used In	BF Instrument Reference (1201) APA Quotes (1026)
User For	Cash and Derivatives

Currency Coefficient

Description	When an actual price is displayed in a different 'price expression' than the official instrument trading currency, the Currency Coefficient represents the ratio 'price expression' divided by 'official currency' (To be calculated with Ratio / Multiplier Decimals). For example a UK-listed instrument with its trading currency GBP having a price expressed in Pence, the Currency Coefficient will be 0.01 expressed with Currency Coefficient set to 1 and Ratio / Multiplier Decimals set to 2. The Currency Coefficient may be used for the Instrument Trading Price (the Referential field Trading Currency Indicator is then set to 1), and/or for the Derivatives and Warrants Instrument Strike Price (the Referential field Strike Currency Indicator is then set to 1).
Format	Numerical ID (unsigned integer 32)
Length	4
Possible Values	0..2^32-2 Null value: 2^32-1
Used In	Standing Data (1007) Full Trade Information (1004)

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User For	Cash

D

Date of Initial Listing

FIELD NAME	DATE OF INITIAL LISTING
Description	Date the instrument was initially listed. Expressed as number of days since Epoch.
Format	Date (unsigned integer 16)
Length	2
Possible Values	From 0 to 2^16-2
Used In	BF Instrument Reference (1201)
User For	Cash

Dark Eligibility

FIELD NAME	DARK ELIGIBILITY
Description	Indicates the Eligibility to dark. 0 is not eligible, 1 is eligible.
Format	Boolean (unsigned integer 8)
Length	1
Possible Values	0..2^8-2 Null value: 2^8-1
Used In	Standing Data (1007)
User For	Cash

Dark LIS Threshold

FIELD NAME	DARK LIS THRESHOLD
Description	Defines the minimum amount of an order to benefit from the LIS (Large In Scale) pre-transparency waiver (to be calculated with the Amount Decimals).
Format	Amount (unsigned integer 64)
Length	8
Possible Values	0..2^64-2 Null value: 2^64-1
Used In	Standing Data (1007)
User For	Cash

Dark Minimum Quantity

FIELD NAME	DARK MINIMUM QUANTITY - DEPRECATED
Description	*Defines the minimum quantity required for an order to be filled in the Dark liquidity. 0 indicates that no minimum amount is required.*
Format	*Quantity (unsigned integer 32)*
Length	*4*
Possible Values	*0..2^32-2* *Null value: 2^32-1*

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FIELD NAME	DARK MINIMUM QUANTITY - DEPRECATED
Used In	*Standing Data (1007)*
User For	*Cash*

Date Of Last Trade

FIELD NAME	DATE OF LAST TRADE
Description	SBE additional information: (in number of days since the 1st of January 1970).
Format	Date (unsigned integer 16) SBE: unsigned integer 16
Length	2
Possible Values	0..2^16-2 Null value: 2^16-1
Used In	Standing Data (1007)
User For	Cash

Days To Expiry

FIELD NAME	DAYS TO EXPIRY
Description	Number of Calendar days until the Last Trading Day of the Expiry.
Format	Numerical (unsigned integer 16)
Length	2
Possible Values	0..2^16-2 Null value: 2^16-1
Used In	Outright Standing Data (1014)

Depositary List

FIELD NAME	DEPOSITARY LIST
Description	Identifies the possible main depository organizations (maximum four) for shares or fixed income. Use the clearing house to determine the relevant system for settling trades. Valid values are: - '00001' – Euroclear France - '00002' – Euroclear Belgium - '00003' – Euroclear Nederland - '00004' – X/N NBB - '00005' – VIF (non-fungible Belgian instruments) - '00006' – Euroclear Bank - '00007' – Euroclear NIEC - '00008' – Physical - '00009' – Euronext Paris non Euroclear France - '00010' – Interbolsa - '00012' – Monte Titoli - '00015' – SIS SegaInterSettle AG - '00016' – Oesterreichische Kontrollbank AG - '00017' – Vaerdipapircentralen (VP) - '00018' – Clearstream Banking A.G. - '00019' – Clearstream Banking S.A. - '00021' – Keler - '00023' – Finnish Central Securities Depositary Ltd - '00028' – Iberclear - '00030' – Euroclear UK – Ireland Limited

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FIELD NAME	DEPOSITARY LIST
	- '00050' – Verdipapirsentralen, VPS - '00051' – Stredisko Cennych Papiru - '00052' – Swedish Central Securities Depository Ltd - '00053' – Warsaw Stock Exchange/Equities/Main Market - '00000' – No depository organization - 'Nulls' – Not significant
Format	Text (character)
Length	20
Used In	Standing Data (1007)
User For	Cash

Derivatives Instrument Trading Code

FIELD NAME	DERIVATIVES INSTRUMENT TRADING CODE
Description	Derivatives Instrument Trading Code (formerly AMR) is composed of Exchange Code, Contract Type, Product Code, Expiry. For Options, Strike and Option Type (Put or Call) is added.
Format	Alphanumerical ID (character)
Length	18
Used In	Outright Standing Data (1014) Strategy Standing Data (1012)
User For	Cash and Derivatives

Derivatives Instrument Type

FIELD NAME	DERIVATIVES INSTRUMENT TYPE
Description	Indicates the type of derivative instrument
Format	Enumerated (unsigned integer 8)
Length	1
Possible Values	0 Call Option 1 Put Option 2 Strategy 3 Individual Future 4 Underlying Null value: 2^8-1
Conditions	Value 4 is not used for Euronext markets
Used In	Outright Standing Data (1014)
User For	Derivatives

Derivatives Market Model

FIELD NAME	DERIVATIVES MARKET MODEL
Description	Type of synthetic quote applied to the contract
Format	Enumerated (unsigned integer 8)
Length	1
Possible Values	0 No Synthetic Quote 1 Spontaneous Implied Matching 2 Event Driven Implied Matching Null value: 2^8-1
Used In	Contract Standing Data (1013)
User For	Derivatives

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Dividend Currency

FIELD NAME	DIVIDEND CURRENCY
Description	Currency of dividend.
Format	Text (character)
Length	3
Possible Values	(See field description)
Used In	BF Instrument Reference (1201)
User For	Cash

Dividend Payment Date

FIELD NAME	DIVIDEND PAYMENT DATE
Description	Dividend payment date. Expressed as number of days since Epoch.
Format	Date (unsigned integer 16)
Length	2
Possible Values	From 0 to 2^16-2
Used In	BF Instrument Reference (1201)
User For	Cash

Dividend Rate

FIELD NAME	DIVIDEND RATE
Description	Dividend rate. To be interpreted with Ratio/Multiplier Decimals.
Format	Ratio (unsigned integer 64)
Length	8
Possible Values	From 0 to 2^64-2
Used In	BF Instrument Reference (1201)
User For	Cash

Dividend Record Date

FIELD NAME	DIVIDEND RECORD DATE
Description	Date of dividend record. Expressed as number of days since Epoch.
Format	Date (unsigned integer 16)
Length	2
Possible Values	From 0 to 2^16-2
Used In	BF Instrument Reference (1201)
User For	Cash

Dynamic Collar Logic

FIELD NAME	DYNAMIC COLLAR LOGIC
Description	For Derivatives, Dynamic Collar Logic is a field used to identify the method of handling orders in case of Trade Price Validation (TPV) being triggered. For Cash, Dynamic Collar Logic is used internally.

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FIELD NAME	DYNAMIC COLLAR LOGIC
Format	Enumerated (unsigned integer 8)
Length	1
Possible Values	0 Not Active 2 No Halt with Reject (*not in use*) 3 Halt with Acceptation Null value: 2^8-1
Used In	Contract Standing Data (1013)

E

EDSP Tick Size

FIELD NAME	EDSP TICK SIZE
Description	Specific Tick Size value applicable for EDSP. It's calculated using the PriceDecimals.
Format	Price (unsigned integer 64)
Length	8
Possible Values	0..2^64-2 Null value: 2^64-1
Used In	Contract Standing Data (1013)
User For	Derivatives

Effective Date Indicator

FIELD NAME	EFFECTIVE DATE INDICATOR
Description	Indicates if the trade is introduced on the trading session day or earlier.
Format	Enumerated (unsigned integer 8)
Length	1
Possible Values	0 If the seller declaration is received on the current trading session day 1 If seller declaration is received before the current trading session day Null value: 2^8-1
Used In	Full Trade Information (1004)
User For	Cash and Derivatives

Efficient MMT Agency Cross Trade Indicator

FIELD NAME	EFFICIENT MMT AGENCY CROSS TRADE INDICATOR
Description	Defines the agency cross trade indicator following MMT level 3.3.
Format	Enumerated (unsigned integer 8)
Length	1
Possible Values	X 'ACTX' – Agency Cross Trade No Agency Cross Trade '-' – No Agency Cross Trade
Used In	APA Full Trade Information (1028)
User For	Cash and Derivatives

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Efficient MMT Algorithmic Indicator

FIELD NAME	EFFICIENT MMT ALGORITHMIC INDICATOR
Description	Defines the algorithmic indicator following MMT level 3.9.
Format	Enumerated (unsigned integer 8)
Length	1
Possible Values	H 'ALGO– Algorithmic Trade No Algorithmic Trade'-' – No Algorithmic Trade
Used In	APA Full Trade Information (1028)
User For	Cash and Derivatives

Efficient MMT Benchmark Indicator

FIELD NAME	EFFICIENT MMT BENCHMARK INDICATOR
Description	Defines the benchmark indicator or the reference price indicator following MMT level 3.5.
Format	Enumerated (unsigned integer 8)
Length	1
Possible Values	B 'BENC'– Benchmark Trade S 'RFPT'– Reference Price Trade No Benchmark or Reference Price Trade '-' – No Benchmark or Reference Price Trade
Used In	APA Full Trade Information (1028)
User For	Cash and Derivatives

Efficient MMT Contribution to Price

FIELD NAME	EFFICIENT MMT CONTRIBUTION TO PRICE
Description	Defines the contribution to price or the price discovery process following MMT level 3.8.
Format	Enumerated (unsigned integer 8)
Length	1
Possible Values	J 'TNCP'– Trade not Contributing to the Price Discovery Process N 'PNDG' – Price is Currently Not Available but Pending P 'P' – Plain-Vanilla Trade T 'NPFT' – Non-Price Forming Trade (formerly known as the Technical Trade)
Used In	APA Full Trade Information (1028)
User For	Cash and Derivatives

Efficient MMT Duplicative Indicator

FIELD NAME	EFFICIENT MMT DUPLICATIVE INDICATOR
Description	Defines the duplicative indicator following MMT level 5.
Format	Enumerated (unsigned integer 8)
Length	1
Possible Values	1 DUPL' – Duplicative Trade Report (reported to more than one APA) Unique Trade Report '-'– Unique Trade Report
Used In	APA Full Trade Information (1028)
User For	Cash and Derivatives

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Efficient MMT Market Mechanism

FIELD NAME	EFFICIENT MMT MARKET MECHANISM
Description	Defines the fundamental functional market mechanism that has facilitated the trade following MMT level 1.
Format	Enumerated (unsigned integer 8)
Length	1
Possible Values	1 Central Limit Order Book 2 Quote Driven Market 3 Dark Order Book 4 Off Book (including Voice or Messaging Trading) 5 Periodic Auction (Uncrossing) 6 Request for Quotes 7 Any Other, Including Hybrid
Used In	APA Full Trade Information (1028)
User For	Cash and Derivatives

Efficient MMT Modification Indicator

FIELD NAME	EFFICIENT MMT MODIFICATION INDICATOR
Description	Defines the modification indicator following MMT level 3.4.
Format	Enumerated (unsigned integer 8)
Length	1
Possible Values	A 'AMND': Trade Amendment C 'CANC': Trade Cancellation New Trade '-'– New Trade
Used In	APA Full Trade Information (1028)
User For	Cash and Derivatives

Efficient MMT Negotiation Indicator

FIELD NAME	EFFICIENT MMT NEGOTIATION INDICATOR
Description	Defines the negotiation indicator or pre-trade transparency waiver following MMT level 3.2.
Format	Enumerated (unsigned integer 8)
Length	1
Possible Values	1 'NLIQ' – Negotiated Trade in Liquid Financial Instruments 2 'OILQ' – Negotiated Trade in Illiquid Financial Instruments 3 'PRIC' – Negotiated Trade Subject to Conditions Other Than The Current Market Price 4 'ILQD' – Pre-Trade Transparency Waiver for Illiquid Instrument on an SI 5 'SIZE' – Pre-Trade Transparency Waiver for Above Standard Market Size on an SI 6 ''ILQD SIZE' – Pre-Trade Transparency Waivers of ILQD and SIZE N 'N' – Negotiated Trade No Negotiated Trade '-'– No Negotiated Trade
Used In	APA Full Trade Information (1028)
User For	Cash and Derivatives

Efficient MMT Off Book Automated Indicator

FIELD NAME	EFFICIENT MMT OFF BOOK AUTOMATED INDICATOR
Description	Defines the off book automated indicator following MMT level 3.7.
Format	Enumerated (unsigned integer 8)
Length	1

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FIELD NAME	EFFICIENT MMT OFF BOOK AUTOMATED INDICATOR
Possible Values	M Off Book Non-Automated Q Off Book Automated Unspecified or does not apply (Hyphen) Unspecified or does not apply
Used In	APA Full Trade Information (1028)
User For	Cash and Derivatives

Efficient MMT Post Trade Deferral

FIELD NAME	EFFICIENT MMT POST TRADE DEFERRAL
Description	Defines the post trade deferral or enrichment type following MMT level 4.2.
Format	Enumerated (unsigned integer 8)
Length	1
Possible Values	1 'LMTF' – Limited Details Trade 2 'DATF' – Daily Aggregated Trade 3 'VOLO' – Volume Omission Trade 4 'FWAF' – Four Weeks Aggregation Trade 5 'IDAF' – Indefinite Aggregation Trade 6 'VOLW' – Volume Omission Trade, Eligible for Subsequent Enrichment in Aggregated Form 7 'FULF' – Full Details of Earlier 'Limited Details Trade (LMTF)' 8 'FULA' – Full Details of Earlier 'Daily Aggregated Trade (DATF)' 9 'FULV' – Full Details of Earlier 'Volume Omission Trade (VOLO)' V 'FULJ' – Full Details of Earlier 'Four Weeks Aggregation Trade (FWAF)' W 'COAF' – Full Details in Aggregated Form of Earlier 'Volume Omission Trade, Eligible for Subsequent Enrichment in Aggregated Form (VOLW)' Not Applicable '-' – Not Applicable / No Relevant Deferral or Enrichment Type
Used In	APA Full Trade Information (1028)
User For	Cash and Derivatives

Efficient MMT Publication Mode

FIELD NAME	EFFICIENT MMT PUBLICATION MODE
Description	Defines the publication mode or post-trade deferral reason following MMT level 4.1.
Format	Enumerated (unsigned integer 8)
Length	1
Possible Values	1 '1' – Non-Immediate Publication 2 'LRGS' – Non-Immediate Publication: Deferral for 'Large in Scale' 3 'ILQD' – Non-Immediate Publication: Deferral for 'Illiquid Instrument' 4 'SIZE' – Non-Immediate Publication: Deferral for 'Size Specific' 5 'ILQD SIZE' – Non-Immediate Publication: Deferrals of ILQD and SIZE 6 'ILQD LRGS' – Non-Immediate Publication: Deferrals of ILQD and LRGS Immediate Publication '-' – Immediate Publication
Used In	APA Full Trade Information (1028)
User For	Cash and Derivatives

Efficient MMT Special Dividend Indicator

FIELD NAME	EFFICIENT MMT SPECIAL DIVIDEND INDICATOR
Description	Defines the special dividend indicator following MMT level 3.6.
Format	Enumerated (unsigned integer 8)
Length	1
Possible Values	E 'SDIV': Special Dividend Trade

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FIELD NAME	EFFICIENT MMT SPECIAL DIVIDEND INDICATOR
	No Special Dividend Trade ‘-’ – No Special Dividend Trade
Used In	APA Full Trade Information (1028)
User For	Cash and Derivatives

Efficient MMT Trading Mode

FIELD NAME	EFFICIENT MMT TRADING MODE
Description	Differentiates transactions by defining the trading mode under which the trade was executed following MMT level 2.
Format	Enumerated (unsigned integer 8)
Length	1
Possible Values	1 Undefined Auction (= Uncrossing) 2 Continuous Trading 3 At Market Close Trading 4 Out of Main Session Trading 5 Trade Reporting (On Exchange) 6 Trade Reporting (Off Exchange) 7 Trade Reporting (Systematic Internaliser) I Scheduled Intraday Auction (= Uncrossing) K Scheduled Closing Auction (= Uncrossing) O Scheduled Opening Auction (= Uncrossing) U Unscheduled Auction (= Uncrossing)
Used In	APA Full Trade Information (1028)
User For	Cash and Derivatives

Efficient MMT Transaction Category

Description	Defines the transaction category following MMT level 3.1.
Format	Enumerated (unsigned integer 8)
Length	1
Possible Values	D = ‘D’ – Dark Trade R ‘RPRI’ – Trade that has Received Price Improvement Y ‘XFPH’ – Exchange for Physicals Trade Z ‘TPAC’ – Package Trade (excluding Exchange for Physicals) Not apply ‘-‘ – None apply (a standard trade for the Market Mechanism and Trading Mode)
Used In	APA Full Trade Information (1028)
User For	Cash and Derivatives

EMM

Description	Defines the Exchange Market Mechanism applied on each platform. In the Reject (07) message: ■ 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. ■ Not populated for rejection of strategy creation on derivative markets. In the Mass Cancel (13) message, it is mandatory when Symbol Index is provided and optional when Instrument Group Code is provided.
Format	Enumerated (unsigned integer 8)
Length	1
Possible Values	1 Cash and Derivative Central Order Book (COB)

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	2 NAV Trading Facility 4 Derivative Wholesales 5 Cash On Exchange Off book 6 Euronext off-exchange trade reports 7 Derivative On Exchange Off book 8 ETF MTF - NAV Central Order Book 9 Listed-not traded 15 Delta Neutral Contingency leg 99 Not Applicable (For indices and iNAV) Null value: 2^8-1
Conditions	In TCS messages only possible values are '2' = NAV Trading Facility and '5' = Cash On Exchange Off book. Field not populated in Reject (07) messages for rejection of strategy creation on derivatives markets.
Used In	Standing Data (1007) Contract Standing Data (1013) Outright Standing Data (1014) Strategy Standing Data (1012) Timetable (1006) Market Update (1001) Order Update (1002) Long Order Update (1015) Price Update (1003) Full Trade Information (1004) Market Status Change (1005) Real Time Index (1008) Index Summary (1011) LIS Package Trade (1016) APA Full Trade Information (1028)
User For	Cash and Derivatives

End Time Vwap

Description	End time for the Volume Weight Average price computation period
Format	Intraday Time in Seconds (unsigned integer 32)
Length	4
Possible Values	0..2^32-2 Null value: 2^32-1 Default value: 2^32-1
Conditions	For Declaration Entry (40) message, it is mandatory for declarations when Operation Type = '5'.
Used In	Full Trade Information (1004)
User For	Cash

Evaluated Price

Description	This field is used for Total Return Future and Market On Close Future trading. The Price is calculated by ME in index point notation. It can contain the provisional price calculated in intra-day or the final price calculated at the end of the day. The Trade Type value will enable user to know if the field contains provisional price or final price.
Format	Price (signed integer 64)
Length	8
Possible Values	From -2^63-1 to 2^63-1
Conditions	Used only for Total Return Future and Market On Close Future trading
Used In	Full Trade Information (1004)

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User For	Derivatives

Event Time

Description	SBE additional information: (Time in number of nanoseconds since 01/01/1970 UTC).
Format	Epoch Time in Nanoseconds (unsigned integer 64) SBE: unsigned integer 64
Length	8
Possible Values	0..2^64-2 Null value: 2^64-1
Used In	Health Status (1103) Market Update (1001) Order Update (1002) Long Order Update (1015) Price Update (1003) Full Trade Information (1004) Market Status Change (1005) Real Time Index (1008) Index Summary (1011) LIS Package Trade (1016) BF Instrument Suspension (1204) BF NAV (1203) BF Trade (1202) APA Quotes (1026) APA Full Trade Information (1028)
User For	Cash and Derivatives

Ex-Dividend Date

Description	Date of ex-dividend. Expressed as number of days since Epoch.
Format	Date (unsigned integer 16)
Length	2
Possible Values	From 0 to 2^16-2
Used In	BF Instrument Reference (1201)
User For	Cash

Exchange Code

Description	Indicates the Market Place.
Format	Enumerated (character)
Length	1
Possible Values	A Amsterdam Equity Derivatives B Brussels Equity Derivatives C Paris Equity Underlyings D Brussels Cash Underlyings E Milan Equity Derivatives F Brussels Index Derivatives

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	G Amsterdam Cash Underlyings H Lisbon Cash Underlyings I Milan Index Derivatives J Paris Index Derivatives K Amsterdam Index Derivatives L Oslo Cash Underlying M Lisbon Index Derivatives N Oslo Index Derivatives O Oslo Equity Derivatives P Paris Equity Derivatives R Amsterdam Commodities Derivatives S Lisbon Equity Derivatives U Milan Cash Underlying Y Paris Commodities Derivatives Z Amsterdam Currency Derivatives
Used In	Contract Standing Data (1013) Strategy Standing Data (1012)
User For	Derivatives

Exercise Style

Description	Type of exercise of a derivatives instrument
Format	Enumerated (unsigned integer 8)
Length	1
Possible Values	0 European 1 American 2 Asian 3 Bermudan 4 Other 5 Periodic Null value: 2^8-1
Used In	Contract Standing Data (1013) APA Standing Data (1027)
User For	Derivatives

Expiration Date

Description	Expiration date of the instrument
Format	Date in number of days since the 1st of January 1970 (unsigned integer 16)
Length	2
Possible Values	0..2^16-2 Null value: 2^16-1
Used In	
User For	Derivatives

Expiry Cycle Type

Description	Defines the expiry cycle type
Format	Enumerated (unsigned integer 8)
Length	1

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Possible Values	1 Daily 2 Weekly 3 Monthly Null value: 2^8-1
Used In	Outright Standing Data (1014)
User For	Derivatives

Expiry Date

Description	For contracts with one expiry per month the day component may be "00" (text formatted as YYYYMMDD). For AtomX instruments this field contains the exact expiry date. For repo it represents the inclusive date until which a lending/borrowing contract can be traded.
Format	Text (Character)
Length	8
Used In	APA Standing Data (1027)
User For	Cash and Derivatives

F

Firm ID

FIELD NAME	FIRM ID
Description	Identifier of the member firm that has entered the Order.
Used For	Cash
Format	Alphanumerical ID
Length	8
Possible Values	(See field description)
Conditions	Provided only for non-anonymous market.
Used In	Long Order Update (1015)

First Settlement Date

FIELD NAME	FIRST SETTLEMENT DATE
Description	SBE additional information: (in number of days since the 1st of January 1970).
Format	Date (unsigned integer 16) SBE: unsigned integer 16
Length	2
Possible Values	0..2^16-2 Null value: 2^16-1
Used In	Standing Data (1007)
User For	Cash

Frame

FIELD NAME	FRAME
Description	Is the total length of the message including the Frame, SBE header and message content.

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FIELD NAME	FRAME
Format	Numerical ID (unsigned integer 16)
Length	2
Possible Values	0..2^16-2 Null value: 2^16-1
Used In	Frame
User For	Cash and Derivatives

Full Instrument Name

FIELD NAME	FULL INSTRUMENT NAME
Description	Full Instrument Name.
Format	Text (character)
Length	102
Used In	Standing Data (1007) APA Standing Data (1027)
User For	Cash

G

Gross Dividend in Euros

FIELD NAME	GROSS DIVIDEND IN EUROS
Description	Gross dividend payable, expressed in euros. To be interpreted in conjunction with Price/Index Level Decimals.
Format	Price (signed integer 64)
Length	8
Possible Values	From -2^63-1 to 2^63-1
Used In	BF Instrument Reference (1201)
User For	Cash

Gross Dividend Payable per Unit

FIELD NAME	GROSS DIVIDEND PAYABLE PER UNIT
Description	Gross dividend payable, expressed in dividend currency. To be interpreted in conjunction with Price/Index Level Decimals.
Format	Price (signed integer 64)
Length	8
Possible Values	From -2^63-1 to 2^63-1
Used In	BF Instrument Reference (1201)
User For	Cash

Gross of CDSC Indicator

FIELD NAME	GROSS OF CDSC INDICATOR
Description	Indicates if Contingent Deferred Sales Charges fee is gross or not.
Format	Enumerated (character)

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FIELD NAME	GROSS OF CDSC INDICATOR
Length	1
Possible Values	N No Y Yes
Used In	BF Instrument Reference (1201)
User For	Cash

Guarantee Indicator

FIELD NAME	GUARANTEE INDICATOR
Description	Indicates if the trade is guaranteed or not (for clearing purpose)
Format	Enumerated (unsigned integer 8)
Length	1
Possible Values	0 This instrument is not guaranteed 1 This instrument is guaranteed 2 This instrument is not clearable 8 This instrument is part of Cleared Borrowing and Lending Service (CBLM) and is guaranteed Null value: 2^8-1
Used In	Standing Data (1007)
User For	Cash

H

High Level

FIELD NAME	HIGH LEVEL
Description	Highest index level (to be calculated with the Price/Index Level Decimals).
Format	Price (signed integer 64)
Length	8
Possible Values	-2^63+1..2^63-1 Null value: -2^63
Used In	Index Summary (1011)
User For	Cash

High Time

FIELD NAME	HIGH TIME
Description	Time of provisional highest index level (Time in number of nanoseconds since 01/01/1970 UTC).
Format	Epoch Time in Nanoseconds (unsigned integer 64) SBE: unsigned integer 64
Length	8
Possible Values	0..2^64-2 Null value: 2^64-1
Used In	Index Summary (1011)
User For	Cash

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I

ICB

FIELD NAME	ICB
Description	Identifies for a listed instrument, the economic subsector of the issuing company in the ICB (Industry Classification Benchmark) classification. This field is not relevant and is currently filled with '0000000000000000'.
Format	Alphanumerical ID (character)
Length	16
Used In	Standing Data (1007)
User For	Cash

ICB Code

FIELD NAME	ICB CODE
Description	*Identifies for a listed instrument, the economic subsector of the issuing company in the ICB (Industry Classification Benchmark) classification.* This field is not relevant and is currently filled with '00000000'.
Format	Alphanumerical ID (character)
Length	8
Used In	Standing Data (1007)
User For	Cash

Imbalance Quantity

FIELD NAME	IMBALANCE QUANTITY
Description	Imbalance volume quantity if Uncrossing occurs at this moment. This volume includes hidden quantity (to be calculated with Quantity Decimals).
Format	Quantity (unsigned integer 64)
Length	8
Possible Values	0..2^64-2 Null value: 2^64-1
Used In	Price Update (1003)
User For	Cash

Imbalance Quantity Side

FIELD NAME	IMBALANCE QUANTITY SIDE
Description	Side of the imbalance volume if the Uncrossing occurs at this moment.
Format	Enumerated (unsigned integer 8)
Length	1
Possible Values	0 No imbalance 1 Buy 2 Sell Null value: 2^8-1
Used In	Price Update (1003)
User For	Cash

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Index Level

FIELD NAME	INDEX LEVEL
Description	The value of the last level for the index that is the subject of this message (to be calculated with the Price/Index Level Decimals).
Format	Price (signed integer 64)
Length	8
Possible Values	-2^63+1..2^63-1 Null value: -2^63
Used In	Real Time Index (1008)
User For	Cash

Index Level Type

FIELD NAME	INDEX LEVEL TYPE
Description	Type of Index Level.
Format	Enumerated (unsigned integer 8)
Length	1
Possible Values	0 Indicative Index 1 Official Opening Index 2 Real-Time Index 3 Automatic Indicative Index 4 (Preliminary) Reference Index 5 Closing Reference Index 6 (Confirmed) Reference Index 7 Options Liquidation Index Null value: 2^8-1
Used In	Real Time Index (1008)
User For	Cash

Index Price Code

FIELD NAME	INDEX PRICE CODE
Description	Type of Price as positioned in Session High/Low or to indicate the trend or at the contrary the reference value from which the price may change.
Format	Enumerated (unsigned integer 8)
Length	1
Possible Values	0 Only Index 1 Index and Session High 2 Index and Session Low 3 Index and Session High and Low (typically first price) 4 Only Session High 5 Only Session Low 6 Previous Day Close Null value: 2^8-1
Used In	Real Time Index (1008)
User For	Cash

Instrument Category

FIELD NAME	INSTRUMENT CATEGORY
Description	Indicates to which category the instrument belongs.

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FIELD NAME	INSTRUMENT CATEGORY
Format	Enumerated (unsigned integer 8)
Length	1
Possible Values	1 Equities 2 Fixed Income 3 Warrants And Certificates 6 Trackers 7 Futures 10 Options 11 Indices 12 Euronext Funds Services 14 iNAV (Indicative Net Asset Value) 15 Fund 254 Miscellaneous
Used In	BF Instrument Reference (1201)
User For	Cash and Derivatives

Instrument Event Date

FIELD NAME	INSTRUMENT EVENT DATE
Description	SBE additional information: (in number of days since the 1st of January 1970).
Format	Date (unsigned integer 16) SBE: unsigned integer 16
Length	2
Possible Values	0..2^16-2 Null value: 2^16-1
Used In	Outright Standing Data (1014) Standing Data (1007)
User For	Cash and Derivatives

Instrument Group Code

FIELD NAME	INSTRUMENT GROUP CODE
Description	Instrument Group / Class Identifier.
Format	Alphanumerical ID (character)
Length	2
Used In	Standing Data (1007)
User For	Cash

Instrument Name

FIELD NAME	INSTRUMENT NAME
Description	Instrument Name
Format	Text (character)
Length	18
Used In	Standing Data (1007)
User For	Cash

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Instrument State

FIELD NAME	INSTRUMENT STATE
Description	Indicates the state of the instrument.
Format	Enumerated (unsigned integer 8)
Length	1
Possible Values	1 Scheduled 2 Suspended due to underlying 3 Suspended KOBI 4 Suspended KOBE 5 Suspended New Listing 6 Suspended By MO 7 Suspended Technical 8 Reserved Dynamic Collars 9 Reserved Static Collars 10 Reserved Waiting For LP 11 Reserved LP Limit 13 Suspended Waiting for BBO 14 Suspended Waiting for Tradable State 15 Random Uncrossing Period 16 Instrument Expired 17 Uncrossing 18 Reserved due to Leg 19 Suspended due to Leg 21 Reserved Future Limit Interruption Protection Null value: 2^8-1
Used In	Market Status Change (1005)
User For	Cash and Derivatives

Instrument Trading Code

FIELD NAME	INSTRUMENT TRADING CODE
Description	Cash: Trading code is a 12-character string, the only instrument identifier that is unique in the feed in addition to the symbol index.
Format	Alphanumerical ID (character)
Length	15
Used In	Standing Data (1007)
User For	Cash and Derivatives

Instrument Unit Expression

FIELD NAME	INSTRUMENT UNIT EXPRESSION
Description	Unit in which the instrument is quoted.
Format	Enumerated (unsigned integer 8)
Length	1
Possible Values	1 Units 2 Percentage of Nominal Excluding Accrued Interest (Clean) 3 Basis Points 4 Percentage Mixed 5 Percentage of Nominal Including Accrued Interest (Dirty) 7 Yield 8 Kilograms

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FIELD NAME	INSTRUMENT UNIT EXPRESSION
	9 Ounces Null value: 2^8-1
Used In	Contract Standing Data (1013) Standing Data (1007)
User For	Cash and Derivatives

Interest Payment Date

FIELD NAME	INTEREST PAYMENT DATE
Description	Next interest payment date, expressed as number of days since Epoch. Provided for bonds only. The BF Instrument Reference (1201) message can provide up to the 4 next interest payment dates.
Format	Date (unsigned integer 16)
Length	2
Possible Values	From 0 to 2^16-2
Used In	BF Instrument Reference (1201)
User For	Cash

ISIN Code

FIELD NAME	ISIN CODE
Description	Instrument ISIN following ISO 6166. Identifier of a product. Combined with MIC and Currency, identifies an instrument traded on a given market using a given currency.
Format	Alphanumerical ID (character)
Length	12
Conditions	For MiFID Declaration Trade Entry (40) message, the Symbol Index or MIC - ISIN - Currency must be specified. If both Symbol Index and MIC - ISIN - Currency are populated, MIC - ISIN - Currency will be ignored and only the Symbol Index will be taken into consideration.
Used In	Outright Standing Data (1014) Standing Data (1007) BF Instrument Reference (1201)
User For	Cash and Derivatives

Issue Date

FIELD NAME	ISSUE DATE
Description	Date at which the instrument has been offered to the market, expressed as number of days since Epoch.
Format	Date (unsigned integer 16)
Length	2
Possible Values	From 0 to 2^16-2
Used In	BF Instrument Reference (1201)
User For	Cash

Issue Price

FIELD NAME	ISSUE PRICE
Description	Issuing price of the instrument
Format	Price (signed integer 64)

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FIELD NAME	ISSUE PRICE
Length	8
Possible Values	-2^63+1..2^63-1 Null value: -2^63
Used In	Standing Data (1007)
User For	Cash

Issue Price Decimals

FIELD NAME	ISSUE PRICE DECIMALS
Description	Indicates the number of decimals for Issue Price related to this Symbol Index
Format	Decimal Places (unsigned integer 8)
Length	1
Possible Values	0..2^8-2 Null value: 2^8-1
Used In	Standing Data (1007)
User For	Cash

Issuing Country

FIELD NAME	ISSUING COUNTRY
Description	Issuing country. Provides the ISO 3166 (Alpha 3) code for the country of headquarter company that issued the instrument.
Format	Alphanumerical ID (character)
Length	3
Used In	Standing Data (1007) BF Instrument Reference (1201)
User For	Cash

L

Last Adjusted Closing Price

FIELD NAME	LAST ADJUSTED CLOSING PRICE
Description	Last traded price of the previous trading day after application of the adjustment coefficient (to be calculated with the Price/Index Level Decimals). Not provided for European instruments.
Format	Price (signed integer 64)
Length	8
Possible Values	-2^63+1..2^63-1 Null value: -2^63
Used In	Standing Data (1007)
User For	Cash

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Last Market Data Sequence Number

FIELD NAME	LAST MARKET DATA SEQUENCE NUMBER
Description	Indicates the Market Data Message Sequence Number of the last real-time message processed for this snapshot.
Format	Sequence (unsigned integer 64)
Length	8
Possible Values	0..2^64-2 Null value: 2^64-1
Used In	End Of Snapshot (2102) Start Of Snapshot (2101)
User For	Cash and Derivatives

Last NAV Price

FIELD NAME	LAST NAV PRICE
Description	Last NAV Price
Format	Price (signed integer 64)
Length	8
Possible Values	From -2^63-1 to 2^63-1
Used In	BF Instrument Reference (1201)
User For	Cash

Last Trading Date

FIELD NAME	LAST TRADING DATE
Description	Date until which the instrument is tradable (in number of days since the 1st of January 1970).
Format	Date (unsigned integer 16)
Length	2
Possible Values	0..2^16-2 Null value: 2^16-1
Used In	Outright Standing Data (1014)
User For	Cash and Derivatives

Leg Buy or Sell

FIELD NAME	LEG BUY OR SELL
Description	Leg Side.
Format	Enumerated (character)
Length	1
Possible Values	B Buy S Sell
Used In	Strategy Standing Data (1012)
User For	Derivatives

Leg Last Traded Price

FIELD NAME	LEG LAST TRADED PRICE
Description	Indicates the price of the trade for the leg (to be calculated with the Price/Index Level Decimals).

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FIELD NAME	LEG LAST TRADED PRICE
Format	Price (signed integer 64)
Length	8
Possible Values	-2^63+1..2^63-1
Used In	LIS Package Structure (1016)
Used For	Derivatives

Leg Last Traded Quantity

FIELD NAME	LEG LAST TRADED QUANTITY
Description	Indicates the quantity of the trade for the leg (to be calculated with the Quantity Decimals).
Format	Price (unsigned integer 64)
Length	8
Possible Values	0..2^64-2
Used In	LIS Package Structure (1016)
Used For	Derivatives

Leg Price

FIELD NAME	LEG PRICE
Description	Price of corresponding strategy leg (to be calculated with the Price/Index Level Decimals).
Format	Price (signed integer 64)
Length	8
Possible Values	-2^63+1..2^63-1 Null value: -2^63
Used In	Strategy Standing Data (1012)
User For	Derivatives

Leg Ratio

FIELD NAME	LEG RATIO
Description	Ratio of lots for the leg. For contingent trades, the delta. ■ For Contracts (Future or Option), it is the leg ratio, with the maximum value being 99999. If the value submitted by a customer is higher, it will be changed by the system to the maximum value (99999). ■ For Underlyings (Cash or Future), the delta is used with special rules: For the Underlying leg of volatility strategies, this should be the delta represented directly as an integer value of the percentage, without division or decimals (e.g.: a delta of 65% should be represented by 65), with the maximum value being 9999 (9999%). If the value submitted by a customer is higher, it will be changed by the system to the maximum value (9999). For Conversion Reversal Strategies (Type = 'R'), the delta is always set to 100.
Format	Quantity (unsigned integer 32)
Length	4
Possible Values	0..2^32-2 Null value: 2^32-1
Used In	Strategy Standing Data (1012) LIS Package Trade (1016)
User For	Derivatives

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Leg Symbol Index

FIELD NAME	LEG SYMBOL INDEX
Description	MDG proprietary identification code of the instrument leg for the strategy. This identifier is unique per triplet: MIC, ISIN and currency. Once the instrument is expired its number can be used for a new instrument.
Format	Numerical ID (unsigned integer 32)
Length	4
Possible Values	0..2^32-2 Null value: 2^32-1
Used In	Strategy Standing Data (1012) LIS Package Trade (1016)
User For	Derivatives

LEI Code

FIELD NAME	LEI CODE
Description	LEI (Legal Entity Identifier) Code
Format	Alphanumerical ID
Length	20
Used In	APA Quotes (1026)
User For	Cash and Derivatives

Liquid Instrument Indicator

FIELD NAME	LIQUID INSTRUMENT INDICATOR
Description	Indicates whether the instrument is liquid or not, as defined per EU and UK MiFID II. (0 = Illiquid ; 1 = Liquid)
Format	Boolean (unsigned integer 8)
Length	1
Possible Values	0..2^8-2 Null value: 2^8-1
Used In	Standing Data (1007)

Liquidation Level

FIELD NAME	LIQUIDATION LEVEL
Description	Index Level of reference at expiration settlement (to be calculated with the Price/Index Level Decimals).
Format	Price (signed integer 64)
Length	8
Possible Values	-2^63+1..2^63-1 Null value: -2^63
Used In	Index Summary (1011)
User For	Cash

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Liquidation Time

FIELD NAME	LIQUIDATION TIME
Description	Time of provisional expiration settlement index level (Time in number of nanoseconds since 01/01/1970 UTC).
Format	Epoch Time in Nanoseconds (unsigned integer 64) SBE: unsigned integer 64
Length	8
Possible Values	0..2^64-2 Null value: 2^64-1
Used In	Index Summary (1011)
User For	Cash

Long Instrument Name

FIELD NAME	LONG INSTRUMENT NAME
Description	Full Instrument Name, long format. Can be the concatenation of two fields: instrument name and its associated series.
Format	Text (character)
Length	250
Possible Values	(See field description)
Used In	BF Instrument Reference (1201)
User For	Cash

Long Issuer Name

FIELD NAME	LONG ISSUER NAME
Description	Indicates the name of the Legal Issuing Entity, long format. Can be the concatenation of two fields: Issuer Name and Co-issuer Name.
Format	Text (character)
Length	250
Possible Values	(See field description)
Used In	BF Instrument Reference (1201)
User For	Cash

Long Mnemonic

FIELD NAME	LONG ISSUER NAME
Description	Mnemonic code of the instrument. This field is not populated for every instrument.
Format	Alphanumerical ID (character)
Length	6
Used In	Standing Data (1007)
User For	Cash

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Long Trade Reference

FIELD NAME	LONG TRADE REFERENCE
Description	Reference of the trade reported to the Exchange. Unlike the field **Trade Reference** (length = 30 char.), the **Long Trade Reference** is EU and UK MiFID II compliant (length = 52 char. as requested by the ESMA/FCA). This field is used only for the Saturn APA Service.
Format	Alphanumerical ID (character)
Length	52
Used In	APA Full Trade Information (1028)
User For	Cash and Derivatives

Lot Multiplier

FIELD NAME	LOT MULTIPLIER
Description	Amount of underlying instrument per unit of a derivative contract (to be calculated with the Ratio / Multiplier Decimals). Due to corporate actions, the value may be different between value provided within this field in Contract Standing Data and Outright Standing Data. Value in Outright Standing Data reflects the adjustment due to the corporate action and should be used for that Outright instrument. Lot Multiplier field is used instead of Trading Unit, because Lot Multiplier supports decimals.
Format	Numerical (unsigned integer 64)
Length	8
Possible Values	0..2^64-2 Null value: 2^64-1
Used In	Contract Standing Data (1013) Outright Standing Data (1014)
User For	Derivatives

Lot Size

FIELD NAME	LOT SIZE
Description	For Cash and Derivatives, it defines a multiple of the tradable quantity.
Format	Quantity (unsigned integer 64)
Length	8
Possible Values	0..2^64-2 Null value: 2^64-1
Used In	Standing Data (1007) Outright Standing Data (1014) Contract Standing Data (1013)
User For	Cash and Derivatives

Low Level

FIELD NAME	LOW LEVEL
Description	Lowest index level (to be calculated with the Price/Index Level Decimals).
Format	Price (signed integer 64)
Length	8
Possible Values	-2^63+1..2^63-1 Null value: -2^63
Used In	Index Summary (1011)
User For	Cash

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Low Time

FIELD NAME	LOW TIME
Description	Time of provisional lowest index level (Time in number of nanoseconds since 01/01/1970 UTC).
Format	Epoch Time in Nanoseconds (unsigned integer 64) SBE: unsigned integer 64
Length	8
Possible Values	0..2^64-2 Null value: 2^64-1
Used In	Index Summary (1011)
User For	Cash

M

Main Depositary

FIELD NAME	MAIN DEPOSITARY
Description	Identifies the default (or main) depository organization of the instrument (between the possible 4 depositaries registered) used by priority for the settlement (for example: multi-listed instruments which have several depositories). For Cash Markets this data has to be treated in consideration of the data Depositary List used by the clearing house to determine the relevant system for settling trades. Valid values are the same as for "Depositary List". Valid values are: - '00001' – Euroclear France - '00002' – Euroclear Belgium - '00003' – Euroclear Nederland - '00004' – X/N National Bank of Belgium - '00005' – VIF (non-fungible Belgian instruments) - '00006' – Euroclear Bank - '00008' – Physical - '00010' – Interbolsa - '00000' – No depository organization - 'Nulls' – Not significant
Format	Alphanumerical ID (character)
Length	5
Used In	Standing Data (1007) Contract Standing Data (1013)
User For	Cash and Derivatives

Market Data Action Type

FIELD NAME	MARKET DATA ACTION TYPE
Description	Identifies if the order is a New Order, a Deletion, a Modification or a Retransmission.
Format	Enumerated (unsigned integer 8)
Length	1
Possible Values	1 New Order 2 Deletion of order identified by Previous Priority 3 Deletion of all orders for the given instrument (if side is not provided, it means both) 4 Modification of existing order Without Loss Of Priority 5 Retransmission of all orders for the given instrument 6 Modification of existing order With Loss Of Priority 7 RFQ Answer creation

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FIELD NAME	MARKET DATA ACTION TYPE
	8 RFQ Answer deletion Null value: 2^8-1
Used In	Order Update (1002) Long Order Update (1015)
User For	Cash

Market Data Change Type

FIELD NAME	MARKET DATA CHANGE TYPE
Description	Type of scheduled change.
Format	Enumerated (unsigned integer 8)
Length	1
Possible Values	0 Status Change(s) 1 Scheduled Event Notification 2 Status Change(s) and Scheduled Event Notification Null value: 2^8-1
Used In	Market Status Change (1005)
User For	Cash and Derivatives

Market Data Price Type

FIELD NAME	MARKET DATA PRICE TYPE
Description	Type of price update (note: 1 to 9 are settlement price type).
Format	Enumerated (unsigned integer 8)
Length	1
Possible Values	2 Official Daily (Derivatives Only) 4 Official Market Close (Derivatives Only) 6 Official Expiry (Derivatives Only) 7 Provisional Intraday (Derivatives Only) 8 Official Intraday (Derivatives Only) 9 Official YDSP (Derivatives Only) 10 Net Asset Value (+/-) for the instruments eligible to the NAV Trading Facility (Cash Only) 12 Adjusted Closing Price (Cash Only) 13 Subscription Price (Cash Only) 14 Indicative Matching Price (Cash and Derivatives) 19 Min Price Out of Session Trades (Cash Only) 20 Max Price Out of Session Trades (Cash Only) 21 Min Price Out of Session Block Trades (Cash Only) 22 Max Price Out of Session Block Trades (Cash Only) 23 Valuation Price (Cash Only) 24 Fund Subscription (Cash Only) 25 Fund Redemption (Cash Only) 26 Uncrossing Price (Cash and Derivatives) 27 Last Traded Price (Cash and Derivatives) 28 Alternative Indicative Price (AIP) (Cash Only) 30 Net Asset Value (NAV) (Cash Only) 31 External Reference Price (Cash Only) 33 Closing Price (Cash Only) Null value: 2^8-1
Used In	Price Update (1003)
User For	Cash and Derivatives

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Market Data Sequence Number

FIELD NAME	MARKET DATA SEQUENCE NUMBER
Description	Assigned by MDG for each message. Each channel has its own Market Data Sequence Number sequence. This sequence will always increment but not by 1 during the day, except for "Health Status" messages that will contain the Market Data Sequence Number of the last message (that is not a "Health Status" message) sent on the channel.
Format	Sequence (unsigned integer 64)
Length	8
Possible Values	From 0 to 2^64-2 Null value: 2^64-1
Used In	Start Of Day (1101) End Of Day (1102) Health Status (1103) Technical Notification (1106) Standing Data (1007) Contract Standing Data (1013) Outright Standing Data (1014) Strategy Standing Data (1012) Timetable (1006) Market Update (1001) Order Update (1002) Long Order Update (1015) Price Update (1003) Full Trade Information (1004) Market Status Change (1005) Statistics (1009) Real Time Index (1008) Index Summary (1011) LIS Package Trade (1016) BF Instrument Reference(1201) BF Instrument Suspension (1204) BF NAV (1203) BF Trade (1202) APA Standing Data (1027) APA Quotes (1026) APA Full Trade Information (1028)
User For	Cash and Derivatives

Market Data Update Type

FIELD NAME	MARKET DATA UPDATE TYPE
Description	Type of market data update.
Format	Enumerated (unsigned integer 8)
Length	1
Possible Values	1 Best Bid (Cash and Derivatives) 2 Best Offer (Cash and Derivatives) 3 New Bid (Cash and Derivatives) 4 New Offer (Cash and Derivatives) 5 Updated Bid (Cash and Derivatives) 6 Updated Offer (Cash and Derivatives) 7 Total Traded Volume (Derivatives Only) – Deprecated 8 Implied Bid (Derivatives Only) 9 Implied Offer(Derivatives Only) 10 Request for Quote (Cash and Derivatives) 11 Request for Quote Bid (Cash Only) 12 Request for Size (Cash Only)

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FIELD NAME	MARKET DATA UPDATE TYPE	
	13	Request for Quote Offer (Cash)
	14	High Dynamic Collar (Cash Only)
	15	Low Dynamic Collar (Cash Only)
	16	New Bid RLP (Retail Liquidity Provider) (Cash Only)
	17	New Offer RLP (Retail Liquidity Provider) (Cash Only)
	18	Updated Bid RLP Retail Liquidity Provider) (Cash Only)
	19	Updated Offer RLP (Retail Liquidity Provider) (Cash Only)
	24	Conventional Trade (Cash and Derivatives)
	25	Request for Cross (RFC) Queued (Derivatives Only)
	26	Request for Cross (RFC) (Derivatives Only)
	27	Large in Scale (LiS) Trade (Derivatives Only)
	28	Basis Trade (Derivatives Only)
	29	Large in Scale (LiS) Package Trade (Derivatives Only) – Deprecated
	30	Guaranteed Cross Trade (Cash and Derivatives)
	31	Against Actual Trade (Derivatives Only)
	32	Asset Allocation Trade (Derivatives Only)
	34	Exchange for Swap Trade (Derivatives Only)
	35	Dark Trade (Cash Only)
	36	Exchange for Physical Trade – Cash Leg (Cash Only) – Deprecated
	37	Strategy Leg Conventional Trade (Derivatives Only)
	38	Strategy Leg Large in Scale (LiS) Trade (Derivatives Only) – Deprecated
	39	Strategy Leg Basis Trade (Derivatives Only) – Deprecated
	40	Strategy Leg Guaranteed Cross Trade (Derivatives Only) – Deprecated
	41	Strategy Leg Against Actual Trade (Derivatives Only) – Deprecated
	42	Strategy Leg Asset Allocation Trade (Derivatives Only) – Deprecated
	44	Strategy Leg Exchange For Swap Trade (Derivatives Only) – Deprecated
	45	Strategy Leg Exchange For Physical Trade (Derivatives Only) – Deprecated
	46	BoB Trade (Cash Only)
	48	AtomX Trade (Derivatives Only) – Deprecated
	50	Trade Cancellation (Cash and Derivatives)
	51	Out of Market Trade (Cash Only)
	52	Delta Neutral Trade - Underlying Cash Leg (Cash Only)
	53	Delta Neutral Trade - Underlying Future Leg (Derivatives Only)
	54	Euronext Fund Service Trade (Cash Only)
	55	Secondary Listing Trade (Cash Only)
	56	Request for Cross Trade (Derivatives Only)
	57	Request for Cross Strategy Leg Trade (Derivatives Only)
	58	New Bid With Liquidity Provider (Cash Only)
	59	New Offer With Liquidity Provider (Cash Only)
	60	Updated Bid With Liquidity Provider (Cash Only)
	61	Updated Offer With Liquidity Provider (Cash Only)
	63	Low Static Collar
	64	High Static Collar
	65	Market VWAP Operation Trade
	66	Request for Size Bid(Cash Only)
	67	Request for Size Offer(Cash Only)
	70	Low LP Collar (Cash Only)
	71	High LP Collar (Cash Only)
	72	ETF-MTF NAV Trade (price in basis points) (Cash Only)
	73	ETF-MTF NAV Dark Trade (price in basis points) (Cash Only)
	74	New Bid on Wholesale RFC (Derivatives Only)
	75	New Offer on Wholesale RFC (Derivatives Only)
	76	Updated Bid on Wholesale RFC (Derivatives Only)
	77	Updated Offer on Wholesale RFC (Derivatives Only)
	78	Clear Wholesale RFC (Derivatives Only)
	79	Guaranteed Cross – Negotiated deal NLIQ (Liquid)
	80	Guaranteed Cross – Negotiated deal OILQ (illiquid)
	81	Large in Scale (LIS) Trade (Cash)
	82	Large in Scale (LiS) Trade in basis points (Derivatives Only)
	83	Large in Scale (LiS) Package Trade in basis points (Derivatives Only) – Deprecated

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FIELD NAME	MARKET DATA UPDATE TYPE
	84 Strategy Leg Large in Scale (LiS) Trade in basis points (Derivatives Only) – Deprecated 86 New Bid RFQ Answer 87 New Offer RFQ Answer 88 Updated Bid RFQ Answer 89 Updated Offer RFQ Answer 90 Bid Execution Summary 91 AQS Expansion Factor (Provided in Price field) 92 Collars Expansion Factor (Provided in Price field) 93 Collars Enabled 94 Collars Disabled 95 DCRP Inter-Month Spread 96 FSP Reference Price 97 Offer Execution Summary 98 FSP Triggered 99 MidPoint BBO 100 Conventional Trade - Provisional price 101 High Order Price Control Collar 102 Low Order Price Control Collar 104 Issuing or Tender Offer Trade (Cash Only) 105 RFQ Trade (Cash Only) 106 FLIP Spread 107 FLIP Reference Price 254 Clear Book (Cash and Derivatives) Null value: 2^8-1
Used In	Market Update (1001)
User For	Cash and Derivatives

Market Model

FIELD NAME	MARKET MODEL
Description	Market Model identifier.
Format	Enumerated (unsigned integer 8)
Length	1
Possible Values	1 Order Driven 2 Quote Driven 3 IPO 4 Primary Market 5 RFQ 6 Conditional Uncrossing Null value: 2^8-1
Used In	Standing Data (1007)
User For	Cash

Market Of Reference MIC

FIELD NAME	MARKET OF REFERENCE MIC
Description	Indicates the instrument Exchange of Reference by its MIC (Market Identification Code according to ISO 10383) (For Future Use).
Format	Alphanumerical ID (character)
Length	4
Conditions	For Declaration Entry (40) message, it is mandatory when Operation Type = '4' or '6'.
Used In	Full Trade Information (1004) Standing Data (1007)

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FIELD NAME	MARKET OF REFERENCE MIC
User For	Cash

Maturity Date

FIELD NAME	MATURITY DATE
Description	Maturity Date of the instrument (text formatted as YYYYMMDD). For contracts with one expiry per month the day component may be "00" (text formatted as YYYYMMDD). For repo (repurchase agreement) it represents the inclusive date until which a lending/borrowing contract can be traded.
Format	Text (character)
Length	8
Used In	Outright Standing Data (1014) Standing Data (1007) Strategy Standing Data (1012) BF Instrument Reference (1201) APA Standing Data (1027)
User For	Cash and Derivatives

Maximum Decimals In Quantity

FIELD NAME	MAXIMUM DECIMALS IN QUANTITY
Description	Maximum Decimals In Quantity was introduced for Euronext Fund Services Paris and indicates the maximum of relevant decimal number for trading.
Format	Numerical (unsigned integer 8)
Length	1
Possible Values	0..2^8-2 Null value: 2^8-1
Used In	Standing Data (1007)
User For	Cash

Max Order Amount Call

FIELD NAME	MAX ORDER AMOUNT CALL
Description	Maximum order amount allowed at order entry during a call phase (to be combined with Amount Decimals).
Format	Amount (unsigned integer 64)
Length	8
Possible Values	0..2^64-2
Used In	Standing Data (1007)
User For	Cash

Max Order Amount Continuous

FIELD NAME	MAX ORDER AMOUNT CONTINUOUS
Description	Maximum order amount allowed at order entry during a continuous phase (to be combined with Amount Decimals).
Format	Amount (unsigned integer 64)
Length	8
Possible Values	0..2^64-2

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FIELD NAME	MAX ORDER AMOUNT CONTINUOUS
Used In	Standing Data (1007)
User For	Cash

Max Order Quantity Call

FIELD NAME	MAX ORDER QUANTITY CALL
Description	Maximum order quantity allowed at order entry during a call phase (to be combined with Quantity Decimals).
Format	Quantity (unsigned integer 64)
Length	8
Possible Values	0..2^64-2
Used In	Standing Data (1007)
User For	Cash

Max Order Quantity Continuous

FIELD NAME	MAX ORDER QUANTITY CONTINUOUS
Description	Maximum order quantity allowed at order entry during a continuous phase (to be combined with Quantity Decimals).
Format	Quantity (unsigned integer 64)
Length	8
Possible Values	0..2^64-2
Used In	Standing Data (1007)
User For	Cash

Message Price Notation

FIELD NAME	MESSAGE PRICE NOTATION
Description	This field provides the type of price notation used per message. For TRF and MOC products the value "Price" is used for TAM trading mode, the values "Spread in basis points" and "Spread" are used for TAIC trading mode.
Format	Enumerated (unsigned integer 8)
Length	1
Possible Values	1 Price 2 Spread in basis points 3 Spread
Conditions	Currently this functionality is used only for TRF and MOC products. Note that for the TRF products the value "Spread" means "Spread in index point"
Used In	Full Trade Information (1004)
User For	Derivatives

MIC

FIELD NAME	MIC
Description	Identifies the market to which an instrument belongs by its MIC (Market Identification Code), segment MIC according to ISO 10383. Euronext owns the following MICs: - 'ALXA' – ALTERNEXT AMSTERDAM - 'ALXB' – EURONEXT GROWTH BRUSSELS

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FIELD NAME	MIC
	- 'ALXL' - EURONEXT GROWTH LISBON - 'ALXP' – EURONEXT GROWTH PARIS - 'ATFX' – ATFUND MTF - 'BGEM' - BORSA ITALIANA GLOBAL EQUITY MARKET - 'EMTF' – EURO MTF - 'ENXB' – EURONEXT - EASY NEXT - 'ENXL' – EURONEXT ACCESS LISBON - 'ETFP' – ELECTRONIC ETF, ETC/ETN AND OPEN-END FUNDS MARKET) - 'ETLX' - EUROTLX - 'EXGM'- EURONEXT GROWTH MILAN - 'MERK' – MERKUR MARKET - 'MIVX' - EURONEXT MIV MILAN - 'MFOX' - EURONEXT - MERCADO DE FUTUROS E OPÇÕES - 'MLXB' - EURONEXT ACCESS BRUSSELS - 'MOTX' – ELECTRONIC BOND MARKET - 'MTAA' - EURONEXT MILAN - 'MTAH' - EURONEXT MILAN – TRADING AFTER HOURS - 'TNLA' – EURONEXT - TRADED BUT NOT LISTED AMSTERDAM - 'TNLB' – EURONEXT – TRADING FACILITY BRUSSELS - 'SEDX' – ELECTRONIC SECURITISED DERIVATIVES MARKET (SEDEX) - 'VPXB' - EURONEXT - VENTES PUBLIQUES BRUSSELS - 'WQXL' – EURONEXT - MARKET WITHOUT QUOTATIONS LISBON - 'XAMS' – EURONEXT - EURONEXT AMSTERDAM - 'XDMI' – ITALIAN DERIVATIVES MARKET - 'XBRD' - EURONEXT - EURONEXT BRUSSELS - DERIVATIVES - 'XBRU' – EURONEXT - EURONEXT BRUSSELS - 'XESM' – DUBLIN EQUITIES EURONEXT GROWTH - 'XEUC' - EURONEXT COM, COMMODITIES FUTURES AND OPTIONS - 'XEUE' - EURONEXT EQF, EQUITIES AND INDICES DERIVATIVES - 'XEUI' - EURONEXT IRF, INTEREST RATE FUTURE AND OPTIONS - 'XEYE' – GLOBAL EXCHANGE MARKET - 'XLDN' – EURONEXT - EURONEXT LONDON - 'XLIS' – EURONEXT - EURONEXT LISBON - 'XLUX' – LUXEMBOURG STOCK EXCHANGE - 'XMAT' - EURONEXT PARIS MATIF - 'XMLI' – EURONEXT ACCESS PARIS - 'XMON' - EURONEXT PARIS MONEP - 'XMOT' - EXTRAMOT - 'XMSM' – EURONEXT DUBLIN - 'XOAS' – OSLO AXESS - 'XOAM' – NORDIC ALTERNATIVE BOND MARKET - 'XOBD' – OSLO BORS ASA – DERIVATIVES MARKET - 'XOSL' – OSLO BORS ASA - 'XOTH' - Others - This MIC is not registered. It is use for testing purpose in both p-EUA and Production. - 'XPAR' – EURONEXT - EURONEXT PARIS - 'XSPM' - EURONEXT STRUCTURED PRODUCTS MTF **Specific MIC for APA use only** - 'XOFF' – OTC- TRANSACTIONS – LISTED INSTRUMENTS - 'XXXX' – OTC TRANSACTION – UNLISTED INSTRUMENTS - 'AFSI' – AFS - OTF - INTEREST RATE DERIVATIVES - 'AFSO' – AFS - OTF - BONDS - 'AFSL' – AFS - OTF - STRUCTURED PRODUCTS - 'AFSX' – AFS - OTF - FX FORWARDS - 'SINT' – Systematic INTernaliser (This is a tag not in the ISO).
Format	Alphanumerical ID (character)
Length	4
Conditions	For MiFID Declaration Trade Entry (40) message, the Symbol Index or MIC - ISIN - Currency must be specified. If both Symbol Index and MIC - ISIN - Currency are populated, MIC - ISIN - Currency will be ignored and only the Symbol Index will be taken into consideration.

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FIELD NAME	MIC
Used In	Contract Standing Data (1013) Standing Data (1007) BF Instrument Reference (1201) APA Quotes (1026)
User For	Cash and Derivatives

MIC List

FIELD NAME	MIC LIST
Description	Identifies the Euronext markets on which an instrument is listed by its MIC (Market Identification Code). For an instrument listed on a single Euronext market, the listing MIC code is the same than "Market Identification Code (MIC) of the listed instrument" For an instrument listed on several Euronext Markets: - The first MIC is the same than the "Market Identification Code (MIC) of the listed instrument - The others MIC indicate the other listing places
Format	Alphanumerical ID (character)
Length	20
Used In	Standing Data (1007)

MIFID II Liquid Flag

FIELD NAME	MIFID II LIQUID FLAG
Description	Defines if a contract is to be considered as liquid under EU MIFID II and onshored UK Regulation.
Format	Boolean (unsigned integer 8)
Length	1
Possible Values	From 0 to 2^8-2
Used In	Contract Standing Data (1013)
User For	Derivatives

MiFID Clearing Flag

FIELD NAME	MIFID CLEARING FLAG
Description	Code to identify whether the transaction will be cleared. - 'true': Transaction to be cleared. - 'false': Transaction not to be cleared.
Format	Text (character)
Length	5
Used In	Full Trade Information (1004) APA Full Trade Information (1028)
User For	Derivatives

MiFID Currency

FIELD NAME	MIFID CURRENCY
Description	Currency in which the price is expressed (applicable if the price is expressed as monetary value) following ISO 4217 standard.
Format	Alphanumerical ID (character)

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FIELD NAME	MIFID CURRENCY
Length	3
Used In	Full Trade Information (1004) APA Full Trade Information (1028)
User For	Cash and Derivatives

MiFID Emission Allowance Type

FIELD NAME	MIFID EMISSION ALLOWANCE TYPE
Description	This field is only applicable for emission allowances. Possible values: - 'EUAE' – European Union Allowances (EUA) - 'CERE' - Certified Emission Reductions (CER) - 'ERUE' - Emission Reduction Units (ERU) - 'EUAA' - European Union Aviation Allowances (EUAA) - 'OTHR' – Other (for derivatives only)
Format	Text (character)
Length	4
Conditions	For MiFID Declaration Trade Entry (40) message, it is only applicable for APA (i.e. when ARM APA Indicator = '2' or '3'). For emission allowances and emission allowance derivatives only.
Used In	Full Trade Information (1004) APA Full Trade Information (1028)
User For	Derivatives

MiFID Execution ID

FIELD NAME	MIFID EXECUTION ID
Description	This field is relevant only for trades on Optiq Wholesales Facility. It is composed of contract symbol index and LIS Transaction ID enabling to map the transaction in **Full Trade Information** (1004) message with its structure at component level in **LIS Package Trade** (1016).
Format	Alphanumerical ID (character)
Length	52
Used In	Full Trade Information (1004) LIS Package Trade (1016)
User For	Derivatives

MiFID Instrument ID

FIELD NAME	MIFID INSTRUMENT ID
Description	Code used to identify the financial instrument. This code has to be processed with the MiFID Instrument ID Type.
Format	Alphanumerical ID (character)
Length	12
Used In	Full Trade Information (1004) APA Standing Data (1027) APA Quotes (1026) APA Full Trade Information (1028)
User For	Cash and Derivatives

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MiFID Instrument ID Type

FIELD NAME	MIFID INSTRUMENT ID TYPE
Description	Code type used to identify the financial instrument. Possible values: - 'ISIN' = ISIN code, where ISIN is available. - 'OTHR' = other identifier.
Format	Text (character)
Length	4
Used In	Full Trade Information (1004) APA Standing Data (1027) APA Quotes (1026) APA Full Trade Information (1028)
User For	Cash and Derivatives

MiFID Notional Amount

FIELD NAME	MIFID NOTIONAL AMOUNT
Description	Nominal amount or notional amount. For spread bets, the notional amount shall be the monetary value wagered per point movement in the underlying financial instrument. For credit default swaps, it shall be the notional amount for which the protection is acquired or disposed of. Possible values: - Maximum of 18 digits with a maximum of 5 decimals. Note: Decimal separator is '.' (full stop).
Format	Text (character)
Length	20
Conditions	For MiFID Declaration Trade Entry (40) message, it is mandatory for APA (i.e. when ARM APA Indicator = '2' or '3'). For all financial instruments except in the cases described under Article 11(1) letters (a) and (b) of ESMA and onshored UK Regulation RTS 2.
Used In	Full Trade Information (1004) APA Full Trade Information (1028)
User For	Cash and Derivatives

MiFID Price

FIELD NAME	MIFID PRICE
Description	Traded price of the transaction excluding, where applicable, commission and accrued interest. Where price is reported in monetary terms, it shall be provided in the major currency unit. Where price is currently not available but pending, the value should be 'PNDG'. Where price is not applicable the field shall not be populated. Possible values: - For price expressed as monetary value: maximum of 18 digits with a maximum of 13 decimals. - For price expressed as percentage or yield: maximum of 11 digits with a maximum of 10 decimals. - For not available price (only for derivatives): 'PNDG'. Note 1: Decimal separator is '.' (full stop). Note 2: Negative numbers are prefixed with '-' (minus). Note 3: Where applicable, values shall be rounded and not truncated.
Format	Text (character)
Length	20
Used In	Full Trade Information (1004) APA Quotes (1026)

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FIELD NAME	MIFID PRICE
	APA Full Trade Information (1028)
User For	Cash and Derivatives

MiFID Price Notation

FIELD NAME	MIFID PRICE NOTATION
Description	Indication as to whether the price is expressed in monetary value, in percentage or in yield. Possible values: 'MONE' – Monetary value 'PERC' – Percentage 'YIEL' – Yield 'BAPO' – Basis points.
Format	Text (character)
Length	4
Conditions	For MiFID Declaration Trade Entry (40) message, it is mandatory for APA (i.e. when ARM APA Indicator = '2' or '3').
Used In	Full Trade Information (1004) BF Instrument Reference (1201) BF Trade (1202) APA Full Trade Information (1028)
User For	Cash and Derivatives

MiFID Qty in Measurement Unit Notation

FIELD NAME	MIFID QTY IN MEASUREMENT UNIT NOTATION
Description	Indication of measurement units in which the quantity in measurement unit is expressed. Possible values: 'TOCD' – tons of carbon dioxide equivalent Or {ALPHANUM-25} otherwise.
Format	Text (character)
Length	25
Conditions	For MiFID Declaration Trade Entry (40) message, it is only applicable for APA (i.e. when ARM APA Indicator = '2' or '3'). For commodity derivatives, emission allowance derivatives and emission allowances except in the cases described under Article 11(1) letters (a) and (b) of ESMA and onshored UK Regulation RTS 2.
Used In	Full Trade Information (1004) APA Full Trade Information (1028)
User For	Cash and Derivatives

MiFID Quantity

FIELD NAME	MIFID QUANTITY
Description	Number of units of the financial instrument. The nominal or monetary value of the financial instrument. Possible values: - For quantity expressed as number of units: maximum of 18 digits with a maximum of 17 decimals. - For quantity expressed as monetary or nominal value: maximum of 18 digits with a maximum of 5 decimals. Note 1: Decimal separator is '.' (full stop).
Format	Text (character)
Length	20

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FIELD NAME	MIFID QUANTITY
Used In	Full Trade Information (1004) APA Quotes (1026) APA Full Trade Information (1028)
User For	Cash and Derivatives

MiFID Quantity Measurement Unit

FIELD NAME	MIFID QUANTITY MEASUREMENT UNIT
Description	The equivalent amount of commodity or emission allowance traded expressed in measurement unit Possible values: - For quantity expressed as number of units: maximum of 18 digits with a maximum of 17 decimals. Note: Decimal separator is '.' (full stop).
Format	Text (character)
Length	20
Conditions	For MiFID Declaration Trade Entry (40) message, it is only applicable for APA (i.e. when ARM APA Indicator = '2' or '3'). For commodity derivatives, emission allowance derivatives and emission allowances except in the cases described under Article 11(1) letters (a) and (b) of ESMA and onshored UK Regulation RTS 2.
Used In	Full Trade Information (1004) APA Full Trade Information (1028)
User For	Cash and Derivatives

MiFID Transaction ID

FIELD NAME	MIFID TRANSACTION ID
Description	MiFID Transaction Identification Code is a unique reported trade identifier. It is composed of: - Euronext APA MIC (4 char): ‘’XAPA’’; - Euronext venue (Y) or not (N)(1 char) = ‘’N’’; - Transaction Identifier (30 char) = ‘’00040822757031060533990000065 3’’; - Trading Date (8 Char AAAAMMJJ) = ‘’20180220’’. The above example will give us this MiFID Transaction Id (padded with ‘\0’): “XAPAN00040822757031060533990000065320180220”
Format	Alphanumerical ID (character)
Length	52
Possible Values	(See field description)
Used In	BF NAV (1203) BF Trade (1202) APA Full Trade Information (1028)
User For	Cash and Derivatives

Minimum Amount

FIELD NAME	MINIMUM AMOUNT
Description	Minimum amount a bond can be bought. To be interpreted in conjunction with Price/Index Level Decimals.
Format	Price (signed integer 64)
Length	8
Possible Values	From -2^63-1 to 2^63-1
Used In	BF Instrument Reference 1201)
User For	Cash

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MM Protections

FIELD NAME	MM PROTECTIONS
Description	Indicates allowed MM Protection type on the contract.(0: Disabled ; 1: Enabled)
Format	Bitmap (unsigned integer 8)
Length	1
Possible Values	0 Delta 1 Volume Null value: 2^8-1 Default value: 0
Used In	Contract Standing Data (1013)
User For	Derivatives

MMT Agency Cross Trade Indicator

FIELD NAME	MMT AGENCY CROSS TRADE INDICATOR
Description	Defines the agency cross trade indicator following MMT level 3.3. Possible values: - 'ACTX': Agency Cross Trade - '-': No Agency Cross Trade
Format	Text (character)
Length	4
Used In	Full Trade Information (1004) BF Trade (1202)
User For	Cash and Derivatives

MMT Algorithmic Indicator

FIELD NAME	MMT ALGORITHMIC INDICATOR
Description	Defines the algorithmic indicator following MMT level 3.9. Possible values: - 'ALGO': Algorithmic Trade - '-': No Algorithmic Trade
Format	Text (character)
Length	4
Used In	Full Trade Information (1004)
User For	Cash

MMT Benchmark Indicator

FIELD NAME	MMT BENCHMARK INDICATOR
Description	Defines the benchmark indicator or the reference price indicator following MMT level 3.5. Possible values: - 'BENC': Benchmark Trade - 'RFPT': Reference Price Trade - '-': No Benchmark or Reference Price Trade
Format	Text (character)

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FIELD NAME	MMT BENCHMARK INDICATOR
Length	4
Used In	Full Trade Information (1004) BF Trade (1202)
User For	Cash and Derivatives

MMT Contribution to Price

FIELD NAME	MMT CONTRIBUTION TO PRICE
Description	Defines the contribution to price or the price discovery process following MMT level 3.8. Possible values: - 'P': Plain-Vanilla Trade - 'NPFT': Non-Price Forming Trade (formerly known as the Technical Trade) - 'TNCP': Trade not Contributing to the Price Discovery Process
Format	Text (character)
Length	4
Used In	Full Trade Information (1004)
User For	Cash and Derivatives

MMT Duplicative Indicator

FIELD NAME	MMT DUPLICATIVE INDICATOR
Description	Defines the duplicative indicator following MMT level 5. Possible values: - 'DUPL': Duplicative Trade Report (reported to more than one APA) - '-': Unique Trade Report
Format	Text (character)
Length	4
Used In	Full Trade Information (1004)
User For	Cash

MMT Market Mechanism

FIELD NAME	MMT MARKET MECHANISM
Description	Defines the fundamental functional market mechanism that has facilitated the trade following MMT level 1.
Format	Enumerated (unsigned integer 8)
Length	1
Possible Values	1 Central Limit Order Book 2 Quote Driven Market 3 Dark Order Book 4 Off Book (including Voice or Messaging Trading) 5 Periodic Auction (= Uncrossing) 6 Request for Quotes Null value: 2^8-1
Used In	Full Trade Information (1004)
User For	Cash and Derivatives

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MMT Modification Indicator

FIELD NAME	MMT MODIFICATION INDICATOR
Description	Defines the modification indicator following MMT level 3.4. Possible values: - 'CANC': Trade Cancellation - 'AMND': Trade Amendment - '-': New Trade
Format	Text (character)
Length	4
Used In	Full Trade Information (1004) BF Trade (1202)
User For	Cash and Derivatives

MMT Negotiation Indicator

FIELD NAME	MMT NEGOTIATION INDICATOR
Description	Defines the negotiation indicator or pre-trade transparency waiver following MMT level 3.2. Possible values: - 'N': Negotiated Trade - 'NLIQ': Negotiated Trade in Liquid Financial Instruments - 'OILQ': Negotiated Trade in Illiquid Financial Instruments - 'PRIC': Negotiated Trade Subject to Conditions Other Than The Current Market Price - 'ILQD': Pre-Trade Transparency Waiver for illiquid instrument on an Side - 'SIZE': Pre-Trade Transparency Waiver for above standard market size on an SI - '-': No Negotiated Trade
Format	Text (character)
Length	4
Used In	Full Trade Information (1004)
User For	Cash

MMT Off Book Automated Indicator

FIELD NAME	MMT OFF BOOK AUTOMATED INDICATOR
Description	Defines the off book automated indicator following MMT level 3.7.
Format	Enumerated (character)
Length	1
Possible Values	M Off Book Non-Automated Q Off Book Automated - (Hyphen) Unspecified or does not apply
Used In	Full Trade Information (1004)
User For	Cash and Derivatives

MMT Post Trade Deferral

FIELD NAME	MMT POST TRADE DEFERRAL
Description	Defines the post trade deferral or enrichment type following MMT level 4.2. Possible values for the original trade: - 'LMTF': Limited Details Trade

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FIELD NAME	MMT POST TRADE DEFERRAL
	- 'DATF': Daily Aggregated Trade - 'VOLO': Volume Omission Trade - 'FWAF': Four Weeks Aggregation Trade - 'IDAF': Indefinite Aggregation Trade - 'VOLW': Volume Omission Trade, Eligible for Subsequent Enrichment in Aggregated Form Possible values for the subsequent enrichment trade: - 'FULF': Full Details of Earlier "Limited Details Trade (LMTF)" - 'FULA': Full Details of Earlier "Daily Aggregated Trade (DATF)" - 'FULV': Full Details of Earlier "Volume Omission Trade (VOLO)" - 'FULJ': Full Details of Earlier "Four Weeks Aggregation Trade (FWAF)" - 'COAF': Full Details in Aggregated Form of Earlier "Volume Omission Trade, Eligible for Subsequent Enrichment in Aggregated Form (VOLW)" Possible values if neither apply: - '-': Not Applicable / No Relevant Deferral or Enrichment Type
Format	Text (character)
Length	4
Used In	Full Trade Information (1004)
User For	Cash and Derivatives

MMT Publication Mode

FIELD NAME	MMT PUBLICATION MODE
Description	Defines the publication mode or post-trade deferral reason following MMT level 4.1. Possible values: - '-': Immediate Publication - '1': Non-Immediate Publication - 'LRGS': Non-Immediate Publication: Deferral for "Large in Scale" - 'ILQD': Non-Immediate Publication: Deferral for "Illiquid Instrument" - 'SIZE': Non-Immediate Publication: Deferral for "Size Specific"
Format	Text (character)
Length	4
Used In	Full Trade Information (1004)
User For	Cash and Derivatives

MMT Special Dividend Indicator

FIELD NAME	MMT SPECIAL DIVIDEND INDICATOR
Description	Defines the special dividend indicator following MMT level 3.6. Possible values: - 'SDIV': Special Dividend Trade - '-': No Special Dividend Trade
Format	Text (character)
Length	4
Used In	Full Trade Information (1004) BF Trade (1202)
User For	Cash

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MMT Trading Mode

FIELD NAME	MMT TRADING MODE
Description	Differentiates transactions by defining the trading mode under which the trade was executed following MMT level 2.
Format	Enumerated (character)
Length	1
Possible Values	1 Undefined Auction (= Uncrossing) 2 Continuous Trading 3 At Market Close Trading 4 Out of Main Session Trading 5 Trade Reporting (On Exchange) 6 Trade Reporting (Off Exchange) 7 Trade Reporting (Systematic Internaliser) I Scheduled Intraday Auction (= Uncrossing) K Scheduled Closing Auction (= Uncrossing) O Scheduled Opening Auction (= Uncrossing) U Unscheduled Auction (= Uncrossing)
Used In	Full Trade Information (1004) BF Trade (1202)
User For	Cash and Derivatives

MMT Transaction Category

FIELD NAME	MMT TRANSACTION CATEGORY
Description	Defines the transaction category following MMT level 3.1. Possible values: - 'D': Dark Trade - 'RPRI': Trade that has Received Price Improvement - 'TPAC': Package Trade (excluding Exchange for Physicals) - 'XFPH': Exchange for Physicals Trade - '-': None apply (a standard trade for the Market Mechanism and Trading Mode)
Format	Text (character)
Length	4
Used In	Full Trade Information (1004)
User For	Cash and Derivatives

Mnemonic

FIELD NAME	MNEMONIC
Description	Mnemonic code of the instrument. This field is not populated for every instrument.
Format	Alphanumerical ID (character)
Length	5
Used In	Standing Data (1007)
User For	Cash

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Mother Stock ISIN

FIELD NAME	MOTHER STOCK ISIN
Description	ISIN Code of the index underlying of the TRF contract, or the underlying stock of a Single Stock Dividend Future Contract
Format	Text (character)
Length	12
Used In	Contract Standing Data (1013)
User For	Derivatives

N

NAV Bid Price

FIELD NAME	NAV BID PRICE
Description	Net Asset Value bid price.
Format	Price (signed integer 64)
Length	8
Possible Values	From -2^63-1 to 2^63-1
Used In	BF NAV (1203)
User For	Cash

NAV Offer Price

FIELD NAME	NAV OFFER PRICE
Description	Net Asset Value offer price.
Format	Price (signed integer 64)
Length	8
Possible Values	From -2^63-1 to 2^63-1
Used In	BF NAV (1203)
User For	Cash

NAV Price

FIELD NAME	NAV PRICE
Description	NAV Price
Format	Price (signed integer 64)
Length	8
Possible Values	From -2^63-1 to 2^63-1
Used In	BF NAV (1203)
User For	Cash

Next Meeting

FIELD NAME	NEXT MEETING
Description	Date of next general meeting, or any free-formatted information related to next meeting.
Format	Text (character)

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FIELD NAME	NEXT MEETING
Length	8
Possible Values	(See field description)
Used In	BF Instrument Reference (1201)
User For	Cash

Nominal Currency

FIELD NAME	NOMINAL CURRENCY
Description	Code of the nominal currency (ISO 4217-3A).
Format	Alphanumerical ID (character)
Length	3
Used In	Standing Data (1007)
User For	Cash

Notional Amount Traded

FIELD NAME	NOTIONAL AMOUNT TRADED
Description	Whole amount of the trade.
Format	Amount (signed integer 64)
Length	8
Possible Values	From -2^63-1 to 2^63-1
Used In	BF Trade (1202)
User For	Cash

Notional Currency

FIELD NAME	NOTIONAL CURRENCY
Description	Currency in which the notional is denominated following ISO 4217 standard.
Format	Alphanumerical ID (character)
Length	3
Conditions	For MiFID Declaration Trade Entry (40) message, it is mandatory for APA (i.e. when ARM APA Indicator = '2' or '3'). For all financial instruments except in the cases described under Article 11(1) letters (a) and (b) of ESMA and onshored UK Regulation RTS 2.
Used In	Full Trade Information (1004) APA Standing Data (1027)
User For	Cash

Number Instrument Circulating

FIELD NAME	NUMBER INSTRUMENT CIRCULATING
Description	For stocks: this is the total number of shares issued by the company. For Fix Income: this is the number of Fix Income still to be repaid.
Format	Quantity (unsigned integer 64)
Length	8
Possible Values	0..2^64-2 Null value: 2^64-1

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FIELD NAME	NUMBER INSTRUMENT CIRCULATING
Used In	Standing Data (1007)
User For	Cash

Number Of Orders

FIELD NAME	NUMBER OF ORDERS
Description	Number of orders at the current price limit.
Format	Numerical (unsigned integer 16)
Length	2
Possible Values	0..2^16-2 Null value: 2^16-1
Used In	Market Update (1001)
User For	Cash and Derivatives

Number Of Traded Instruments in Index

FIELD NAME	NUMBER OF TRADED INSTRUMENTS IN INDEX
Description	Number of traded instruments in the index.
Format	Quantity (unsigned integer 16)
Length	2
Possible Values	0..2^16-2 Null value: 2^16-1
Used In	Real Time Index (1008)
User For	Cash

O

Offer Px

FIELD NAME	OFFER PRICE
Description	Quote offer price, (To be calculated with Price/Index Level Decimals).
Format	Quote offer price (to be calculated with Price/Index Level Decimals).
Length	8
Possible Values	From -2^63-1 to 2^63-1
Used In	BF Trade (1202)
User For	Cash and Derivatives

Opened/Closed Fund

FIELD NAME	OPENED/CLOSED FUND
Description	Indicates whether the fund is open or closed.
Format	Enumerated (character)
Length	1
Possible Values	O Open C Closed
Used In	BF Instrument Reference (1201)
User For	Cash

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Opening Level

FIELD NAME	OPENING LEVEL
Description	Official Opening Index Level. This level corresponds to the Index Level Type 1 of the Real Time Index (1008) of the corresponding index (to be calculated with the Price/Index Level Decimals).
Format	Price (signed integer 64)
Length	8
Possible Values	-2^63+1..2^63-1 Null value: -2^63
Used In	Index Summary (1011)
User For	Cash

Opening Time

FIELD NAME	OPENING TIME
Description	Time of Official Opening level (Time in number of nanoseconds since 01/01/1970 UTC).
Format	Epoch Time in Nanoseconds (unsigned integer 64) SBE: unsigned integer 64
Length	8
Possible Values	0..2^64-2 Null value: 2^64-1
Used In	Index Summary (1011)
User For	Cash

Optiq Segment

FIELD NAME	OPTIQ SEGMENT
Description	An Optiq segment is a universe of instruments sharing common trading properties. Instruments have the flexibility to be moved from one partition to another within an Optiq segment.
Format	Enumerated (unsigned integer 8)
Length	1
Possible Values	1 Equities 2 Funds 3 Fixed Income 4 Warrants and Certificates 5 Bourse de Luxembourg 6 Financial Options 7 Financial Futures 8 Commodity Derivatives 9 Indices 10 Trade Reporting and Publication 14 Block 11 Index Derivatives 12 Equity Derivatives 15 Forex 16 ISE Bonds and Funds Feed Null value: 2^8-1
Used In	Contract Standing Data (1013) Standing Data (1007) BF Instrument Reference (1201)
User For	Cash and Derivatives

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Option Type

FIELD NAME	OPTION TYPE
Description	Type of Option
Format	Enumerated (unsigned integer 8)
Length	1
Possible Values	1 Call 2 Put 3 Other
Used In	APA Standing Data (1027)
User For	Derivatives

Order Entry Qualifier

FIELD NAME	ORDER ENTRY QUALIFIER
Description	Field indicating the state of the Order Entry for the current market state.
Format	Enumerated (unsigned integer 8)
Length	1
Possible Values	0 Order Entry/Cancel/Modify Disabled 1 Order Entry/Cancel/Modify Enabled 2 Cancel and Modify Only (Derivatives Only) 3 Cancel Only Null value: 2^8-1
Used In	Timetable (1006) Market Status Change (1005)
User For	Cash and Derivatives

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).
Format	Price (signed integer 64)
Length	8
Possible Values	-2^63+1..2^63-1 Null value: -2^63
Conditions	Negative values authorized on ETF Access when the order is sent on the NAV trading Order Book (EMM = 8).
Used In	Order Update (1002) Long Order Update (1015)
User For	Cash and Derivatives

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.

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FIELD NAME	ORDER PRIORITY
	Order Priority should then allow clients to reconcile their orders between private order entry and market data feed. Used in conjunction with Previous Priority, for market data only.
Format	Numerical ID (unsigned integer 64)
Length	8
Possible Values	0..2^64-2 Null value: 2^64-1
Used In	Order Update (1002) Long Order Update (1015)
User For	Cash

Order Quantity

FIELD NAME	ORDER QUANTITY
Description	Total order quantity, per quantity unit.(To be calculated with Quantity Decimals).
Format	Quantity (unsigned integer 64)
Length	8
Possible Values	0..2^64-2 Null value: 2^64-1
Used In	Order Update (1002) Long Order Update (1015)
User For	Cash and Derivatives

Order Side

FIELD NAME	ORDER SIDE
Description	Indicates the side of the order. Please note that the value Cross is used only for the Order Entry, it will never be populated in the Market Data feed.
Format	Enumerated (unsigned integer 8)
Length	1
Possible Values	1 Buy 2 Sell 3 Cross Null value: 2^8-1
Conditions	The value Cross is only used in the NewOrder (01) message. 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". For RFQ Notification (35) message Order Side may not be provided if the RFQ issuer did not specified the side in its request.
Used In	Order Update (1002) Long Order Update (1015)
User For	Cash OEG: Cash and Derivatives

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.
Format	Enumerated (unsigned integer 8)

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FIELD NAME	ORDER TYPE
Length	1
Possible Values	1 Market 2 Limit 3 Stop-market or Stop-market-on-quote 4 Stop-limit or Stop-limit-on-quote 5 Primary Peg 6 Market to limit 7 Market Peg 8 Mid-Point Peg 9 Average Price 10 Iceberg 11 Market On close (MOC) Null value: 2^8-1
Conditions	Value '9' is used only for RFQ validation on ETF Access platform. 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	Order Update (1002) Long Order Update (1015)
User For	Cash OEG: Cash and Derivatives

Order Type Rules

FIELD NAME	ORDER TYPE RULES - DEPRECATED
Description	*Order types supported by the matching engine.* *- bit in position 0 – Market: Market orders are available for this instrument (0: No ; 1: Yes)* *- bit in position 1 – Limit: Limit orders are available for this instrument (0: No ; 1: Yes)* *- bit in position 2 - Stop / Stop Loss: Stop and stop loss orders are available for this instrument (0: No ; 1: Yes) - Only for OEG* *- bit in position 3 - Stop Limit: Stop limit orders are available for this instrument (0: No ; 1: Yes) - Only for OEG* *- bit in position 4 - Market on Open (MOO): Market on open orders are available for this instrument (0: No ; 1: Yes)* *- bit in position 5 - Trade at Settlement: Trade at settlement are available for this instrument (0: No ; 1: Yes)-->*
Format	*Bitmap (unsigned integer 16)*
Length	*2*
Possible Values	*0 Market* *1 Limit* *2 Stop / Stop Loss* *3 Stop Limit* *4 Market on Open (MOO)* *5 Trade at Settlement* *Null value: 2^16-1*
Used In	*Contract Standing Data (1013)*
User For	*Derivatives*

Original Report Timestamp

FIELD NAME	ORIGINAL REPORT TIMESTAMP
Description	SBE additional information: (Time in number of nanoseconds since 01/01/1970 UTC).
Format	Epoch Time in Nanoseconds (unsigned integer 64) SBE: unsigned integer 64

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FIELD NAME	ORIGINAL REPORT TIMESTAMP
Length	8
Possible Values	0..2^64-2 Null value: 2^64-1
Used In	Full Trade Information (1004) APA Full Trade Information (1028)
User For	Cash and Derivatives

P

Packet Flags

FIELD NAME	PACKET FLAGS
Description	Used to flag information (Little-Endian): - Bit 0: Compression - 0 = body of the packet not compressed (the body is the packet without the packet header) - 1 = body of the packet compressed - Bit 1 to 3: will be set to 0 every morning and incremented for each restart of MDG in the same day (wrapping to 0 if the field overflows) - Bit 4 to 6: used if the Packet Sequence Number (PSN) goes over (2^32)-1. They are PSN high weight bits. - Bit 7: is set to 1 when in the packet there is a Start Of Snapshot (2101) message, 0 otherwise. - Bit 8: is set to 1 when in the packet there is an End Of Snapshot (2102) message, 0 otherwise. - Bit 9: is set to 1 when in the packet there is a Health Status (1103) message, Start Of Day (1101) message or End Of Day (1102) message, 0 otherwise. - Bit 10 to 15: for future use.
Format	Numerical (unsigned integer 16)
Length	2
Possible Values	0..2^16-2 Null value: 2^16-1
Used In	Market Data Packet Header
User For	Cash and Derivatives

Packet Sequence Number

FIELD NAME	PACKET SEQUENCE NUMBER
Description	Each channel has its own PSN sequence. Starting from 1 at every MDG start and increasing by step of 1. In case of overflow (over 4.2 billons) Packet Flags will increase for bits 4-6. With this mechanism the PSN has 35 bits available.
Format	Numerical ID (unsigned integer 32)
Length	4
Possible Values	0..2^32-2 Null value: 2^32-1
Used In	Market Data Packet Header
User For	Cash and Derivatives

Packet Time

FIELD NAME	PACKET TIME
Description	Time when the packet is pushed to the clients (Time in number of nanoseconds since 01/01/1970 UTC).
Format	Epoch Time in Nanoseconds (unsigned integer 64)

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FIELD NAME	PACKET TIME
	SBE: unsigned integer 64
Length	8
Possible Values	0..2^64-2 Null value: 2^64-1
Used In	Market Data Packet Header
User For	Cash and Derivatives

Par Value

FIELD NAME	PAR VALUE
Description	Par Value (also called Nominal value) for Instrument. For Fixed Income it represents the par amount to be repaid at maturity (not including interest revenue) (to be calculated with the Amount Decimals).
Format	Amount (unsigned integer 64)
Length	8
Possible Values	0..2^64-2 Null value: 2^64-1
Used In	Standing Data (1007)
User For	Cash

Partition ID

FIELD NAME	PARTITION ID
Description	Identifies uniquely an Optiq partition across all the Exchange partitions.
Format	Numerical ID (unsigned integer 16)
Length	2
Possible Values	0..2^16-2 Null value: 2^16-1
Used In	Contract Standing Data (1013) Standing Data (1007)
User For	Cash and Derivatives

Pattern ID

FIELD NAME	PATTERN ID
Description	Numerical Pattern identifier available as a characteristic of an instrument in Standing Data file and message, and used in the MDG timetable message. Cash Markets only.
Format	Numerical ID (unsigned integer 16)
Length	2
Possible Values	0..2^16-2 Null value: 2^16-1
Used In	Contract Standing Data (1013) Standing Data (1007) Timetable (1006)
User For	Cash

Payment Frequency

FIELD NAME	PAYMENT FREQUENCY
Description	Frequency of payment.

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FIELD NAME	PAYMENT FREQUENCY
Format	Enumerated (character)
Length	1
Possible Values	1 Annual 2 Semi-Annual 3 Quarterly 4 Monthly 5 Bi-Monthly 6 Daily 7 Migration-NA 8 Other 9 No Coupon 10 At Maturity 11 Triannual 12 Capitalization 13 IMM Dates 14 Bimestrial 15 Weekly
Used In	BF Instrument Reference (1201)
User For	Cash

Peg Offset

Description	(Future Use) Tick offset for a pegged order. Used to indicate the signed tick added to the peg reference for a pegged order.
Format	Numerical ID (signed integer 8)
Length	1
Possible Values	From -127 to 127 Null value: -128 Default value: -128
Used In	Order Update (1002) Long Order Update (1015)
User For	Cash

Percentage of Capitalization

Description	Percentage of capitalization for the active instruments in the index (to be calculated with the Ratio / Multiplier Decimals).
Format	Numerical (unsigned integer 64)
Length	8
Possible Values	0..2^64-2 Null value: 2^64-1
Used In	Real Time Index (1008)
User For	Cash

Percentage Var from Prev Close

Description	Percentage of variation for last price (or index) versus previous closing price (or closing reference price) (to be calculated with the Ratio / Multiplier Decimals).
Format	Signed Numerical (signed integer 64)

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Length	8
Possible Values	-2^63+1..2^63-1 Null value: -2^63
Used In	Index Summary (1011) Real Time Index (1008)
User For	Cash and Derivatives

Phase Id

Description	Indicates the phase of the instrument.
Format	Enumerated (unsigned integer 8)
Length	1
Possible Values	1 Inaccessible 2 Closed 3 Call 4 Uncrossing 5 Continuous 7 Continuous Uncrossing (Warrants and Certificates Only) Null value: 2^8-1
Used In	Timetable (1006)
User For	Cash and Derivatives

Phase Qualifier

Description	Indicates the Phase Qualifier. - bit in position 0 – No Qualifier: indicates that no phase qualifier are applicable (0: No ; 1: Yes) - Deprecated - bit in position 1 – Call BBO Only (Cash Only): indicates a call on BBO only phase (0: No ; 1: Yes) - bit in position 2 – Trading At Last (Cash Only): indicates a trading at last phase (TaL) phase (0: No ; 1: Yes) - bit in position 3 – Random Uncrossing : indicates a random uncrossing phase (0: No ; 1: Yes) - bit in position 6 – Stressed Market Conditions: indicates stressed market conditions (0:No ; 1: Yes) - bit in position 7 – Exceptional Market Conditions: indicates exceptional market conditions (0: No ; 1: Yes) - bit in position 9 – Quoting Period: indicates a Call phase during which only a specific Trading Firm can send its order(s) to the Trading System (0: No ; 1: Yes) - bit in position 10 – Indicates the Execution Prevention Across All Firms (0: No ; 1: Yes)
Format	Bitmap (unsigned integer 16)
Length	2
Possible Values	0 No Qualifier 1 Call BBO Only (Cash Only) 2 Trading At Last (Cash Only) 3 Random Uncrossing 6 Stressed Market Conditions 7 Exceptional Market Conditions 9 Quoting Period 10 Execution Prevention Across All Firms Null value: 2^16-1
Conditions	Bit 6, Bit 7 and Bit 10 are only used in Market Status Change (1005).
Used In	Timetable (1006) Market Status Change (1005)
User For	Cash and Derivatives

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Phase Time

Description	Time of Phase start
Format	Integer Time in hhmmss (unsigned integer 64)
Length	8
Possible Values	0..2^64-2 Null value: 2^64-1
Used In	Timetable (1006)
User For	Cash and Derivatives

Pool Factor

FIELD NAME	POOL FACTOR
Description	Allows to calculate how much of the original loans have yet to be repaid.
Format	Numerical ID
Length	4
Possible Values	0..2^32-2
Used In	Standing Data (1007)
User For	Cash

Previous Priority

FIELD NAME	PREVIOUS PRIORITY
Description	Previous Priority is populated only when there is a "Modification of existing order With Loss Of Priority" or order deletions. Then clients have to remove from their market sheet the order identified with the field "Previous Priority" and add a new order with the field "Order Priority" newly provided. Used in conjunction with Order Priority.
Format	Numerical ID (unsigned integer 64)
Length	8
Possible Values	0..2^64-2 Null value: 2^64-1
Used In	Order Update (1002)
User For	Cash

Price

FIELD NAME	PRICE
Description	Price per unit of quantity (to be calculated with the Price/Index Level Decimals).
Format	Price (signed integer 64)
Length	8
Possible Values	-2^63+1..2^63-1 Null value: -2^63
Used In	Market Update (1001) Price Update (1003) BF Trade (1201)
User For	Cash and Derivatives

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Price / Index Level Decimals

FIELD NAME	PRICE / INDEX LEVEL DECIMALS
Description	Indicates the number of decimals for each Price / Index Level related to this Symbol Index
Format	Decimal Places (unsigned integer 8)
Length	1
Possible Values	0..2^8-2 Null value: 2^8-1
Used In	Contract Standing Data (1013) Standing Data (1007) BF Instrument Reference (1201)
User For	Cash and Derivatives

Price Multiplier

FIELD NAME	PRICE MULTIPLIER
Description	Number of units of the financial instrument that are contained in a trading lot. Price multiplier coefficient for instrument unit price.
Format	Numerical (unsigned integer 32)
Length	4
Possible Values	0..2^32-2 Null value: 2^32-1
Used In	Full Trade Information (1004) APA Standing Data (1027) APA Full Trade Information (1028)
User For	Cash

Price Multiplier Decimals

FIELD NAME	PRICE MULTIPLIER DECIMALS
Description	Number of decimals for the field Price Multiplier.
Format	Numerical (unsigned integer 8)
Length	1
Possible Values	0..2^8-2 Null value: 2^8-1
Conditions	For Declaration Entry (40) message, it is mandatory when Price Multiplier is provided.
Used In	Full Trade Information (1004) APA Standing Data (1027) APA Full Trade Information (1028)
User For	Cash

Pricing Algorithm

FIELD NAME	PRICING ALGORITHM
Description	This field provides the defined pricing algorithm value for a given contract. It is used to identify Total Return Future (TRF) contracts and Market On Close (MOC) contracts. For other contract types the value is set to Standard.
Format	Enumerated (unsigned integer 8)
Length	1
Possible Values	0 Standard

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FIELD NAME	PRICING ALGORITHM
	1 Total Return Future 2 Market On Close
Used In	Contract Standing Data (1013)
User For	Derivatives

Price Limits

FIELD NAME	PRICE LIMITS[1]
Description	Indicates the Price Limits mode
Format	Enumerated (unsigned integer 8)
Length	1
Possible Values	1 Price Limits Enabled - Normal (Derivatives Only) 2 Price Limits Enabled - Wide (Derivatives Only) 3 Price Limits Enabled - Widest (Derivatives Only) 4 Price Limits Disabled (Derivatives Only)
Used In	Market Status Change (1005)
User For	Derivatives

[1] - Field "Price Limits" is deprecated.

Price Qualifier

FIELD NAME	PRICE QUALIFIER
Description	Represents a qualifier of the type of update being communicated to the market.
Format	Enumerated (unsigned integer 8)
Length	1
Possible Values	1 Last Adjusted Closing Price (Cash Only) 2 Last Traded Price (Cash Only) 3 Volume Weighted Average Price (Cash Only) 4 Closing Uncrossing Price (Cash Only) 5 Valuation Price (Cash Only) 6 Average of BBO (Cash Only) 7 Average of Best Bid (Cash Only) 8 Updated by Market Operations (Cash Only) 9 Closing Price of Reference Market (Cash Only) Null value: 2^8-1
Used In	Price Update (1003)
User For	Cash

Product Code

FIELD NAME	PRODUCT CODE
Description	Physical alphanumerical product code.
Format	Alphanumerical ID (character)
Length	4
Used In	Contract Standing Data (1013)
User For	Derivatives

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Publication Date Time

FIELD NAME	PUBLICATION DATE TIME
Description	Date and time when the transaction was published by a trading venue or Approved Publication Arrangement (APA). Date and time in the following format: YYYY-MM-DDThh:mm:ss.ddddddZ. Where: - 'YYYY' is the year. - 'MM' is the month. - 'DD' is the day. - 'T' constant 'T' letter used as separator between YYYY-MM-DD and hh:mm:ss.ddddddZ. - 'hh' is the hour. - 'mm' is the minute. - 'ss.dddddd' is the second and its fraction of a second. - 'Z' constant 'Z' letter that stands for UTC time.
Format	Text (character)
Length	27
Used In	Full Trade Information (1004) APA Full Trade Information (1028)
User For	Cash and Derivatives

Q

Quantity

FIELD NAME	QUANTITY
Description	Number of traded or ordered units (to be calculated with Quantity Decimals).
Format	Quantity (unsigned integer 64)
Length	8
Possible Values	0..2^64-2 Null value: 2^64-1
Conditions	For Declaration Entry (40) message, it must always be provided when Operation Type = '1', '4', '5' or '7'. For a trade/declaration on Dutch Funds if expressed as an amount (Operation Type = '6'), this field should not be provided.
Used In	Market Update (1001) Price Update (1003) BF Trade (1202)
User For	Cash and Derivatives

Quantity Decimals

FIELD NAME	QUANTITY DECIMALS
Description	Indicates the number of decimals for each Quantity related to this Symbol Index
Format	Decimal Places (unsigned integer 8)
Length	1
Possible Values	0..2^8-2 Null value: 2^8-1
Used In	Contract Standing Data (1013) Standing Data (1007) BF Instrument Reference (1201)
User For	Cash and Derivatives

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Quantity Notation

FIELD NAME	QUANTITY NOTATION
Description	Indication of the type of measurement (e.g. number of units, nominal, monetary value, etc.) in which the transaction is expressed. Possible values: "UNT" - Units "FMT" - Facial Amount "-" - Not Applicable
Format	Text (character)
Length	3
Used In	Standing Data (1007) BF Trade (1202)
User For	Cash

Quote Spread Multiplier

FIELD NAME	QUOTE SPREAD MULTIPLIER[1]
Description	Indicates the Quote Spread Multiplier
Format	Enumerated (unsigned integer 8)
Length	1
Possible Values	1 Quote Spread Multiplier 1 (Derivatives Only) 2 Quote Spread Multiplier 2 (Derivatives Only) 3 Quote Spread Multiplier 3 (Derivatives Only)
Used In	Market Status Change (1005)
User For	Derivatives

[1] - Field "Quote Spread Multiplier" is deprecated.

Quote Update Type

FIELD NAME	QUOTE UPDATE TYPE
Description	Type of quote update
Format	Enumerated
Length	1
Possible Values	1 Best Bid (Cash and Derivatives) 2 Best Offer (Cash and Derivatives) 5 Cancel Bid (Cash and Derivatives) 6 Cancel Offer (Cash and Derivatives)
Used In	APA Quotes (1026)
User For	Cash and Derivatives

R

Ratio / Multiplier Decimals

FIELD NAME	RATIO / MULTIPLIER DECIMALS
Description	Indicates the number of decimals for each Ratio / Multiplier related to this Symbol Index
Format	Decimal Places (unsigned integer 8)
Length	1

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FIELD NAME	RATIO / MULTIPLIER DECIMALS
Possible Values	0..2^8-2 Null value: 2^8-1
Used In	Contract Standing Data (1013) Standing Data (1007) BF Instrument Reference (1201)
User For	Cash and Derivatives

Rebroadcast Indicator

FIELD NAME	REBROADCAST INDICATOR
Description	Indicates if this message is resent or new (1 if resent, 0 otherwise). For a snapshot, this field will always be set to '1'.
Format	Numerical ID (unsigned integer 8)
Length	1
Possible Values	0..2^8-2 Null value: 2^8-1
Used In	Technical Notification (1106) Timetable (1006) Standing Data (1007) Contract Standing Data (1013) Outright Standing Data (1014) Strategy Standing Data (1012) Market Update (1001) Order Update (1002) Long Order Update (1015) Price Update (1003) Full Trade Information (1004) Market Status Change (1005) Statistics (1009) Real Time Index (1008) Index Summary (1011) LIS Package Trade (1016) BF Instrument Reference (1201) BF Instrument Suspension (1204) BF NAV (1203) BF Trade (1202) APA Standing Data (1027) APA Quotes (1026) APA Full Trade Information (1028)
User For	Cash and Derivatives

Reference Price Origin

FIELD NAME	REFERENCE PRICE ORIGIN
Description	For Derivatives, it is the rules to obtain the DCRP. Derivatives authorized values are : 4,5,6,7.
Format	Enumerated (unsigned integer 8)
Length	1
Possible Values	1 Internal 2 External 3 External BBO 4 Opening Call Price 5 Mid-BBO or Fair Value 6 Fair Value 7 Future Market Price

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FIELD NAME	REFERENCE PRICE ORIGIN
	Null value: 2^8-1
Used In	Contract Standing Data (1013)

Reference Spread Table ID

FIELD NAME	REFERENCE SPREAD TABLE ID
Description	ID of the Reference Spread Table.
Format	Numerical ID (unsigned integer 16)
Length	2
Possible Values	0..2^16-2 Null value: 2^16-1
Used In	Contract Standing Data (1013)
User For	Derivatives

Repo Indicator

FIELD NAME	REPO INDICATOR
Description	Indicates whether the instrument listed underlies any loan contracts, meaning it has been admitted to the Deferred Settlement system and/or to the lending market.
Format	Enumerated (unsigned integer 8)
Length	1
Possible Values	0 Instrument neither eligible for the SRD, nor eligible for the Loan and Lending Market 1 Instrument eligible for the SRD and for the Loan and Lending Market 2 Instrument eligible for the SRD long only 3 Instrument eligible for the Loan and Lending Market and for the SRD long only 4 Easy-to-borrow Instrument eligible for the SRD and the for Loan and Lending Market 5 Instrument eligible for the Loan and Lending Market 8 Non significant Null value: 2^8-1
Used In	Standing Data (1007)
User For	Cash

Repo Settlement Date

FIELD NAME	REPO SETTLEMENT DATE
Description	Date when the Repo-Seller gets the assets back from the Repo-Buyer. Used in case of a Repo (Repurchase Agreement) trade. (number of days since the 1st of January 1970).
Format	Date (unsigned integer 16)
Length	2
Possible Values	0..2^16-2 Null value: 2^16-1
Used In	Full Trade Information (1004)

Retransmission End Time

FIELD NAME	RETRANSMISSION END TIME
Description	Indicates when the retransmission ends. For trade retransmission, all the trades previously received by the clients that have an "Event time" strictly higher than this field are valid (Time in number of nanoseconds since 01/01/1970 UTC).

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FIELD NAME	RETRANSMISSION END TIME
Format	Epoch Time in Nanoseconds (unsigned integer 64) SBE: unsigned integer 64
Length	8
Possible Values	0..2^64-2 Null value: 2^64-1
Used In	Technical Notification (1106)
User For	Cash and Derivatives

Retransmission Start Time

FIELD NAME	RETRANSMISSION START TIME
Description	Indicates when the retransmission starts. For trade retransmission, all the trades previously received by the clients that have an "Event time" strictly lower than this field are valid (Time in number of nanoseconds since 01/01/1970 UTC).
Format	Epoch Time in Nanoseconds (unsigned integer 64) SBE: unsigned integer 64
Length	8
Possible Values	0..2^64-2 Null value: 2^64-1
Used In	Technical Notification (1106)
User For	Cash and Derivatives

S

Scheduled Event

FIELD NAME	SCHEDULED EVENT
Description	Type of Scheduled Event. Notifies an event that will occur at the Scheduled Event Time.
Format	Enumerated (unsigned integer 8)
Length	1
Possible Values	0 Cancel Previously Scheduled Event(Cash and Derivatives) 1 Reopening (Cash Only) 3 Resumption of trading (Cash Only) 4 Closed (Derivatives Only) 5 Expiry (Derivatives Only) 6 Wholesale Large in Scale (LiS) trades open extension (Derivatives Only) 7 Wholesale Basis trades open extension (Derivatives Only) 8 Wholesale Against Actuals trades open extension (Derivatives Only) 9 Wholesale Large in Scale (LiS) Package trades open extension (Derivatives Only) 10 Wholesale Exchange For Swaps trades open extension (Derivatives Only) 11 Wholesale Trades Open Extension (Derivatives Only) 12 Suspension (Cash Only) 13 Collars Normal 14 Collars Wide 15 Pre-Expiry 16 Closing Price Null value: 2^8-1
Used In	Timetable (1006) Market Status Change (1005)
User For	Cash and Derivatives

Scheduled Event Time

FIELD NAME	SCHEDULED EVENT TIME
Description	Scheduled Time for the event to happen (time in number of nanoseconds since 01/01/1970 UTC).
Format	Epoch Time in Nanoseconds (unsigned integer 64) SBE: unsigned integer 64
Length	8
Possible Values	0..2^64-2 Null value: 2^64-1
Used In	Market Status Change (1005)
User For	Cash and Derivatives

Schema ID

FIELD NAME	SCHEMA ID
Description	Identifier of the message schema that contains the template. Used to differentiate Exchange Specifications.
Format	Numerical ID (unsigned integer 16)
Length	2
Possible Values	0..2^16-2 Null value: 2^16-1
Used In	SBE Header
User For	Cash and Derivatives

Schema Version

FIELD NAME	SCHEMA VERSION
Description	Version of the message schema in which the message is defined. Used to add messages and/or modify some others.
Format	Numerical ID (unsigned integer 16)
Length	2
Possible Values	0..2^16-2 Null value: 2^16-1
Used In	SBE Header
User For	Cash and Derivatives

Security Condition

FIELD NAME	SECURITY CONDITION
Description	Security status.
Format	Enumerated (character)
Length	2
Possible Values	O Normal D Ex-Dividend C Ex-Cap R Ex-Rights E Ex-Entitlement S Dealings temporarily suspended N Not Listed
Used In	BF Instrument Reference (1201) BF Instrument Suspension (1204)

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FIELD NAME	SECURITY CONDITION
User For	Cash

SEDOL Code

FIELD NAME	SEDOL CODE
Description	Alphanumerical identifier of an instrument on the ISE Bonds and Funds segment. Legacy instrument identifier provided by compatibility. Symbol Index should be used instead.
Format	Alphanumerical ID (character)
Length	7
Possible Values	(See field description)
Used In	BF Instrument Reference (1201)
User For	Cash

Session

FIELD NAME	SESSION
Description	Current market session in Market Status Change (1005) message. Session of the trading phase in Timetable (1006) message. Sessions represent the following: - Session 1 Normal Trading Hours (Cash) - Session 2 Normal Trading Hours (Derivatives for future use) - Session 3 Extended Trading Hours (for Index Derivatives segment, correspond to the extension 17.30 CET - 22.00 CET for future use – for Structured Products segment, correspond to the first extension 18.30 CET - 20.00 CET) - Session 4 Second Extended Trading Hours (for Structured Products segment, corresponds to the second extension 20.00 CET to 22.00 CET). Other sessions are not used.
Format	Enumerated (unsigned integer 8)
Length	1
Possible Values	0 Session 0 1 Session 1 2 Session 2 3 Session 3 4 Session 4 5 Session 5 6 Session 6 7 Session 7 8 Session 8 9 Session 9 Null value: 2^8-1
Used In	Timetable (1006) Market Status Change (1005)
User For	Cash and Derivatives

Session Trading Day

FIELD NAME	SESSION TRADING DAY
Description	Date of the current trading session (in number of days since the 1st of January 1970).
Format	Date (unsigned integer 16) SBE: unsigned integer 16
Length	2
Possible Values	0..2^16-2

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FIELD NAME	SESSION TRADING DAY
	Null value: 2^16-1
Used In	Start Of Day (1101) End Of Day (1102)
User For	Cash and Derivatives

Settlement Date

FIELD NAME	SETTLEMENT DATE
Description	Date when a trade is final, and the buyer must make payment to the seller while the seller delivers the assets to the buyer. (number of days since the 1st of January 1970).
Format	Date (unsigned integer 16)
Length	2
Possible Values	0..2^16-2 Null value: 2^16-1
Used In	Full Trade Information (1004)

Settlement Delay

Description	Gives the number of trading days that represents the period between the trade date and the settlement date (delivery and payment) for an instrument to be cleared and settled. This is generally a standard period for Euronext Cash markets. Permitted Values - From 0 to 30 (Standard values) - X: This value is assigned for a lot of products and internal management rules shared by Euronext and LCH-Clearnet (D+2). - Z: This value is assigned for Lending/Borrowing instruments. This value is especially interpreted to manage the associated management rules (D+3).
Format	Alphanumerical ID (character)
Length	2
Used In	Standing Data (1007)
User For	Cash

Settlement Method

Description	Settlement method “C” Cash Settlement “P” Physical Settlement "O" Optional Blank/null for exchanges “C”, “G”, “D”, “H” containing Underlying instruments
Format	Alphanumerical ID (character)
Length	1
Used In	Contract Standing Data (1013) APA Standing Data (1027)
User For	Derivatives

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Settlement Tick Size

FIELD NAME	SETTLEMENT TICK SIZE
Description	Default Tick Size value applicable for all Settlement Prices. It's calculated using the PriceDecimals.
Format	Price (unsigned integer 64)
Length	8
Possible Values	0..2^64-2 Null value: 2^64-1
Used In	Contract Standing Data (1013)
User For	Derivatives

Share / Amount in Issue

FIELD NAME	SHARE / AMOUNT IN ISSUE
Description	Total amount issued for the whole fixed income instrument. To be interpreted in conjunction with Price/Index Level Decimals.
Format	Price (signed integer 64)
Length	8
Possible Values	From -2^63-1 to 2^63-1
Used In	BF Instrument Reference (1201)
User For	Cash

Snapshot Time

FIELD NAME	SNAPSHOT TIME
Description	Indicates the time when snapshot generation has respectively started/ended in the Start Of Snapshot/End Of Snapshot message (Time in number of nanoseconds since 01/01/1970 UTC).
Format	Epoch Time in Nanoseconds (unsigned integer 64) SBE: unsigned integer 64
Length	8
Possible Values	0..2^64-2 Null value: 2^64-1
Used In	End Of Snapshot (2102) Start Of Snapshot (2101)
User For	Cash and Derivatives

Start Time Vwap

FIELD NAME	START TIME VWAP
Description	Start time for the Volume Weight Average price computation period
Format	Intraday Time in Seconds (unsigned integer 32)
Length	4
Possible Values	0..2^32-2 Null value: 2^32-1 Default value: 2^32-1
Conditions	For Declaration Entry (40) message, it is mandatory for declarations when Operation Type = '5'.
Used In	Full Trade Information (1004)
User For	Cash

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Stats Update Type

FIELD NAME	STATS UPDATE TYPE
Description	Indicates the type of published statistics update.
Format	Enumerated (unsigned integer 8)
Length	1
Possible Values	5 Daily High (Cash and Derivatives) 6 Daily Low (Cash and Derivatives) 7 Yearly High (Cash and Derivatives) 8 Yearly Low (Cash and Derivatives) 9 Lifetime High (Cash and Derivatives) 10 Lifetime Low (Cash and Derivatives) 14 Variation Last Price (Cash Only) 15 Open Price (Cash and Derivatives) 16 Trade Count (Cash and Derivatives) 17 Last Traded Price (Cash and Derivatives) 18 Percent Variation Previous Close (Cash and Derivatives) 19 Off Book Cumulative Quantity (Cash and Derivatives) 21 On Book Auction Cumulative Quantity (Cash) 22 On Book Continuous Cumulative Quantity (Cash) 23 On and Off Book Cumulative Quantity (Cash and Derivatives) Null value: 2^8-1
Used In	Statistics (1009)
User For	Cash and Derivatives

Stats Update Value

FIELD NAME	STATS UPDATE VALUE
Description	Indicates the value of the published statistics update. This field has to be calculated with a scale code field depending on the "Stats Update Type" as follow: - Price / Index Level Decimals for "Stats Update Type": "5 - Daily High", "6 - Daily Low", "7 - Yearly High", "8 - Yearly Low", "9 - Lifetime High", "10 - Lifetime Low", "15 - Open Price" and "17 - Last Trade Price" - Quantity Decimals for "Stats Update Type": "19 - Off Book Cumulative Quantity", "21 - On Book Auction Cumulative Quantity", "22 - On book Continuous Cumulative Quantity" and "23 - On and Off Book Cumulative Quantity" - Ratio / Multiplier Decimals for "Stats Update Type": "14 - Variation Last Price" and "18 - Percent Variation Previous Close" "16 - Trade Count" has no scale code.
Format	Signed Numerical (signed integer 64)
Length	8
Possible Values	-2^63+1..2^63-1 Null value: -2^63
Used In	Statistics (1009)
User For	Cash and Derivatives

Status Reason

FIELD NAME	STATUS REASON
Description	Provides the reason for Book State changes.
Format	Enumerated (unsigned integer 8)
Length	1
Possible Values	0 Scheduled 4 Collars Breach 7 Automatic Reopening 8 No Liquidity Provider (Cash Only)

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FIELD NAME	STATUS REASON
	11 Knock-In by Issuer (Cash Only) 12 Knock-Out by Exchange (Cash Only) 13 Knock-Out by Issuer (Cash Only) 15 Action by Market Operations (Cash and Derivatives) 16 Waiting for Tradable State (Derivatives Only) 20 New Listing (Cash Only) 21 Due to Underlying (Cash and Derivatives) 22 Outside of LP quotes (Cash Only) 23 Technical (BdL Only) 24 Due to leg (Derivatives Only) Null value: 2^8-1
Used In	Market Status Change (1005)
User For	Cash and Derivatives

Strategy Authorized

FIELD NAME	STRATEGY AUTHORIZED
Description	Provides strategy types authorized for contract. Bit 2, Bit 23, Bit 42 are not used and will always be set to 0.
Format	Bitmap (unsigned integer 64)
Length	8
Possible Values	0 Jelly Roll 1 Butterfly 2 Call or Put Cabinet - Deprecated 3 Spread 4 Calendar Spread 5 Diagonal Calendar Spread 6 Guts 7 Two by One Ratio Spread 8 Iron Butterfly 9 Combo 10 Strangle 11 Ladder 12 Strip 13 Straddle Calendar Spread 14 Pack 15 Diagonal Straddle Calendar Spread 16 Simple Inter Commodity Spread 17 Conversion / Reversal 18 Straddle 19 Volatility Trade 20 Condor 21 Box 22 Bundle 23 Reduced Tick Spread - Deprecated 24 Ladder versus Underlying 25 Butterfly versus Underlying 26 Call Spread versus Put versus Underlying 27 Call or Put Spread versus Underlying 28 Call or Put Calendar Spread versus Underlying 29 Call/Put Diagonal Calendar Spread versus Underlying 30 Guts versus Underlying 31 Two by One Call or Put Ratio Spread versus Underlying 32 Iron Butterfly versus Underlying 33 Combo versus Underlying 34 Strangle versus Underlying 35 Exchange for Physical

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FIELD NAME	STRATEGY AUTHORIZED
	36 Straddle Calendar Spread versus Underlying 37 Put Spread versus Call versus Underlying 38 Diagonal Straddle Calendar Spread versus Underlying 39 Synthetic 40 Straddle versus Underlying 41 Condor versus Underlying 42 Buy Write - Deprecated 43 Iron Condor versus Underlying 44 Iron Condor 45 Call Spread versus Sell a Put 46 Put Spread versus Sell a Call 47 Put Straddle versus Sell a Call or a Put Null value: 2^64-1
Used In	Contract Standing Data (1013)

Strategy Code

Description	Exchange-recognized strategy code
Format	Alphanumerical ID (character)
Length	1
Possible Values	A Jelly Roll B Butterfly C Call or Put Cabinet - Deprecated D Spread E Calendar Spread F Diagonal Calendar Spread G Guts H Two by One Ratio Spread I Iron Butterfly J Combo K Strangle L Ladder M Strip N Straddle Calendar Spread O Pack P Diagonal Straddle Calendar Spread Q Simple Inter Commodity Spread R Conversion / Reversal S Straddle V Volatility Trade W Condor X Box Y Bundle Z Reduced Tick Spread - Deprecated a Ladder versus Underlying b Butterfly versus Underlying c Call Spread versus Put versus Underlying d Call or Put Spread versus Underlying e Call or Put Calendar Spread versus Underlying f Call/Put Diagonal Calendar Spread versus Underlying g Guts versus Underlying h Two by One Call or Put Ratio Spread versus Underlying i Iron Butterfly versus Underlying j Combo versus Underlying k Strangle versus Underlying m Exchange for Physical

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	n Straddle Calendar Spread versus Underlying p Put Spread versus Call versus Underlying q Diagonal Straddle Calendar Spread versus Underlying r Synthetic s Straddle versus Underlying t Condor versus Underlying u Buy Write - Deprecated v Iron Condor versus Underlying w Iron Condor x Call Spread versus Sell a Put y Put Spread versus Sell a Call z Put Straddle versus Sell a Call or a Put
Used In	Strategy Standing Data (1012) LIS Package Trade (1016)
User For	Derivatives

Strike Currency

FIELD NAME	STRIKE CURRENCY
Description	Code of the strike currency (ISO 4217-3A).
Format	Alphanumerical ID (character)
Length	3
Used In	Standing Data (1007)
User For	Cash

Strike Currency Indicator

FIELD NAME	STRIKE CURRENCY INDICATOR
Description	Indicates whether the 'price expression' is in the Currency or in a ratio of this Currency. Use Currency Coefficient field to identify the ratio to apply. This is the case for strike instruments in pennies. The currency will be 'GBP', Strike Currency Indicator sets to '1' and Currency Coefficient set to '0.001'.
Format	Enumerated (unsigned integer 8)
Length	1
Possible Values	0 Change rate not applied to the strike price 1 Change rate applied to the strike price Null value: 2^8-1
Used In	Standing Data (1007)
User For	Cash

Strike Price

FIELD NAME	STRIKE PRICE
Description	The strike price of an option/warrant is the specified price at which the underlying can be bought (in the case of a call/right to buy) or sold (in case of a put/right to sell) by the holder (buyer) of the option/warrant contract, at the moment he exercises his right against a writer (seller) of the option/warrant. Only provided for warrants or other derivatives instruments. To be calculated with Strike Price Decimals for Cash instruments and Price/Index Level Decimals for Derivatives instruments.
Format	Price (signed integer 64)
Length	8
Possible Values	-2^63+1..2^63-1 Null value: -2^63

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FIELD NAME	STRIKE PRICE
Used In	Outright Standing Data (1014) Standing Data (1007) APA Standing Data (1027)
User For	Cash and Derivatives

Strike Price Decimals

FIELD NAME	STRIKE PRICE DECIMALS
Description	Indicates the number of decimals for Strike Price related to this Symbol Index
Format	Decimal Places (unsigned integer 8)
Length	1
Possible Values	0..2^8-2 Null value: 2^8-1
Used In	Standing Data (1007) APA Standing Data (1027)
User For	Cash

Strike Price Decimals Ratio

FIELD NAME	STRIKE PRICE DECIMALS RATIO
Description	In Outright section only, it is used to determine the number of decimals for the Strike Price in the Derivatives Instrument Trading Code (AMR code). Following a corporate event, the value may be updated.
Format	Numerical (unsigned integer 8)
Length	1
Possible Values	0..2^8-2 Null value: 2^8-1
Used In	Contract Standing Data (1013)
User For	Derivatives

Symbol Index

FIELD NAME	SYMBOL INDEX
Description	Exchange identification code of the instrument/contract. 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. Symbol Index is valid for the life of the instrument.
Format	Numerical ID (unsigned integer 32)
Length	4
Possible Values	0..2^32-2 Null value: 2^32-1
Conditions	For inbound messages, the Symbol Index must be specified. For second listing place trade, the Symbol Index and the MIC of secondary listing must be specified. 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. Field not populated in Reject (07) messages for rejection of strategy creation on derivatives markets. For all messages, with exception of MM sign-in and MM protection, this field represent the Symbol Index of the Instrument. For the MM sign-in and MM protection this field represents the Symbol Index of the Contract. For wholesale order this represents numerical leg instrument identifier (Security ID).
Used In	Standing Data (1007) Contract Standing Data (1013)

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FIELD NAME	SYMBOL INDEX
	Outright Standing Data (1014) Strategy Standing Data (1012) Timetable (1006) Market Update (1001) Order Update (1002) Long Order Update (1015) Price Update (1003) Full Trade Information (1004) Market Status Change (1005) Real Time Index (1008) Index Summary (1011) Statistics (1009) Technical Notification (1106) BF Instrument Reference (1201) BF Instrument Suspension (1204) BF NAV (1203) BF Trade (1202)
User For	Cash and Derivatives

T

Tax Code

FIELD NAME	TAX CODE
Description	Tax deduction code to which the instrument belongs.
Format	Enumerated (unsigned integer 8)
Length	1
Possible Values	0 Not eligible to PEA 3 Eligible to PEA 9 Not Applicable Null value: 2^8-1
Used In	Standing Data (1007)
User For	Cash

Tax Description Attaching to a Dividend

FIELD NAME	TAX DESCRIPTION ATTACHING TO A DIVIDEND
Description	Gives precisions about tax attaching to a dividend.
Format	Enumerated (character)
Length	1
Possible Values	D Deduced at Source
Used In	BF Instrument Reference (1201)
User For	Cash

Technical Notification Type

FIELD NAME	TECHNICAL NOTIFICATION TYPE
Description	Indicates the technical notification sent.
Format	Enumerated (unsigned integer 8)
Length	1

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FIELD NAME	TECHNICAL NOTIFICATION TYPE
Possible Values	1 Instrument Book Retransmission End 10 Trade Retransmission Start 11 Trade Retransmission End Null value: 2^8-1
Used In	Technical Notification (1106)
User For	Cash and Derivatives

Template ID

FIELD NAME	TEMPLATE ID
Description	Identifier of the message template. This is the message type of the Market Data messages.
Format	Numerical ID (unsigned integer 16)
Length	2
Possible Values	0..2^16-2 Null value: 2^16-1
Used In	SBE Header
User For	Cash and Derivatives

Threshold LIS Post Trade 120mn

FIELD NAME	THRESHOLD LIS POST TRADE 120MN
Description	Defines the amount of an order to benefit from the LIS Trade Deferred publication to 120 min (to be calculated with the Amount Decimals).
Format	Amount (unsigned integer 64)
Length	8
Possible Values	0..2^64-2 Null value: 2^64-1
Used In	Standing Data (1007)
User For	Cash

Threshold LIS Post Trade 60mn

FIELD NAME	THRESHOLD LIS POST TRADE 60MN
Description	Defines the amount of an order to benefit from the LIS Trade Deferred publication to 60 min (to be calculated with the Amount Decimals).
Format	Amount (unsigned integer 64)
Length	8
Possible Values	0..2^64-2 Null value: 2^64-1
Used In	Standing Data (1007)
User For	Cash

Threshold LIS Post Trade EOD

FIELD NAME	THRESHOLD LIS POST TRADE EOD
Description	Defines the amount of an order to benefit from the LIS Trade Deferred publication to EOD (to be calculated with the Amount Decimals).
Format	Amount (unsigned integer 64)
Length	8

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FIELD NAME	THRESHOLD LIS POST TRADE EOD
Possible Values	0..2^64-2 Null value: 2^64-1
Used In	Standing Data (1007)
User For	Cash

Tick Size Index ID

FIELD NAME	TICK SIZE INDEX ID
Description	ID of the tick size table available in the Tick Table file.
Format	Numerical ID (unsigned integer 16)
Length	2
Possible Values	0..2^16-2 Null value: 2^16-1
Used In	Standing Data (1007) Contract Standing Data (1013)
User For	Cash and Derivatives

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 Access 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 Access platform. (0: No; 1: Yes) ■ bit in position 7 - Deferred Publication: indicates whether the trade publication is deferred or immediate. (0: Immediate Publication; 1: Deferred Publication) 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.
Format	Bitmap (unsigned integer 8)
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 6 NAV Trade expressed in price currency 7 Deferred Publication Null value: 2^8-1
Conditions	Values 5 and 6 will be used only for the NAV trading on the ETF Access platform.

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FIELD NAME	TRADE QUALIFIER
Used In	Full Trade Information (1004)
User For	Cash and Derivatives

Trade Reference

FIELD NAME	TRADE REFERENCE
Description	Reference of the trade reported to the Exchange.
Format	Alphanumerical ID (character)
Length	30
Used In	Full Trade Information (1004) APA Full Trade Information (1028)
User For	Cash and Derivatives

Trade Type

FIELD NAME	TRADE TYPE
Description	Type of trade.
Format	Enumerated (unsigned integer 8)
Length	1
Possible Values	1 Conventional Trade (Cash and Derivatives) 2 Large in Scale (LiS) Trade (Derivatives Only) 4 Large in Scale (LiS) Package Trade 5 Guaranteed Cross Trade (Cash and Derivatives) 6 Against Actual Trade (Derivatives Only) 9 Exchange for Swap Trade (Derivatives Only) 11 Strategy Leg Conventional Trade (Derivatives Only) 20 BoB Trade (Cash Only) 24 Trade Cancellation (Cash and Derivatives) 25 Out of Market Trade (Cash Only) 26 Delta Neutral Trade - Underlying Cash Leg (Cash Only) 27 Market VWAP Operation Trade (Cash Only) 28 Euronext Fund Service Trade (Cash Only) 29 Secondary Listing Trade (Cash Only) 30 Request for Cross Trade (Derivatives Only) 31 Request for cross strategy Leg Trade (Derivatives Only) 32 Trade Publication (Cash and Derivatives) 33 Dark Trade (Cash Only) 34 Delta Neutral Trade - Underlying Future Leg (Derivatives Only) 36 Total Traded Volume (For future use) 39 Guaranteed Cross – Negotiated deal NLIQ (Liquid) 40 Guaranteed Cross – Negotiated deal OILQ (illiquid) 41 Large in Scale (LIS) Trade (Cash) 42 Large in Scale (LiS) Trade in basis points (Derivatives Only) 43 Large in Scale (LiS) Package Trade in basis points (Derivatives Only) 46 Non-Standard Settlement 47 Repurchase Agreement – Repo (OBOE only) 48 Exchange Granted Trade (OBOE only) 49 Other (OBOE only) 50 Odd Lot 100 Conventional Trade - Provisional price 101 Large in Scale (LiS) Trade - Provisional price 102 Large in Scale (LiS) Package Trade - Provisional price 103 Issuing or Tender Offer Trade (Cash Only) 104 RFQ Trade (Cash)

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FIELD NAME	TRADE TYPE
	Null value: 2^8-1
Conditions	In OEG, for the Fill (04) message, only the following values are used: '1', '5', '20' , '33', '39', '40' and '41'; for consistency purposes other values are also listed here, however they are only used in market data
Used In	Full Trade Information (1004) APA Full Trade Information (1028)
User For	Cash and Derivatives

Trade Unique Identifier

FIELD NAME	TRADE UNIQUE IDENTIFIER
Description	Alphanumerical code unique, consistent and persistent per ISO10383 segment MIC and per trading day assigned by the trading venue to a transaction. Trade Unique Identifier (TUI) is a field aimed at identifying an individual transaction and used as Trading Venue Transaction Identification Code (TVTIC). This is a unique transaction identification code generated by trading venues and disseminated to both the buying and the selling parties, in accordance with Article 12 of the Commission Delegated Regulation (EU) 2017/580 Regulatory Technical Standards (RTS).
Format	Alphanumerical ID (character)
Length	16
Used In	Full Trade Information (1004) APA Full Trade Information (1028)
Used For	Cash and Derivatives
Conditions	Always filled except for Derivatives Wholesales Cross on a Strategy as Full Trade Information message is sent for the whole package.

Trading Currency

FIELD NAME	TRADING CURRENCY
Description	Code of the currency (ISO 4217-3A).
Format	Alphanumerical ID (character)
Length	3
Used In	Standing Data (1007) Contract Standing Data (1013) BF Trade (1202)
User For	Cash and Derivatives

Trading Currency Indicator

FIELD NAME	TRADING CURRENCY INDICATOR
Description	Indicates whether the 'price expression' is in the Currency or in a ratio of this Currency. Use Currency Coefficient field to identify the ratio to apply. This is the case for instruments traded in pennies. The currency will be 'GBP', Trading Currency Indicator sets to '1' and Currency Coefficient set to '0.001'.
Format	Enumerated (unsigned integer 8)
Length	1
Possible Values	0 Change rate not applied to the traded price 1 Change rate applied to the traded price Null value: 2^8-1
Used In	Standing Data (1007)
User For	Cash

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Trading Date Time

FIELD NAME	TRADING DATE TIME
Description	Date and time when the transaction was executed. Date and time in the following format: YYYY-MM-DDThh:mm:ss.ddddddZ. Where: - 'YYYY' is the year. - 'MM' is the month. - 'DD' is the day. - 'T' constant 'T' letter used as separator between YYYY-MM-DD and hh:mm:ss.ddddddZ. - 'hh' is the hour. - 'mm' is the minute. - 'ss.dddddd' is the second and its fraction of a second. - 'Z' constant 'Z' letter that stands for UTC time.
Format	Text (character)
Length	27
Conditions	It indicates the original execution date for a reporting/publication entered.
Used In	Full Trade Information (1004) APA Full Trade Information (1028)
User For	Cash and Derivatives

Trading Period

FIELD NAME	TRADING PERIOD
Description	Provides the current trading period.
Format	Enumerated (unsigned integer 8)
Length	1
Possible Values	1 Opening (Cash and Derivatives) 2 Standard (Cash and Derivatives) 3 Closing (Cash and Derivatives) Null value: 2^8-1
Used In	Timetable (1006) Market Status Change (1005)
User For	Cash and Derivatives

Trading Policy

FIELD NAME	TRADING POLICY
Description	Trading Policy enabling to allocate a given incoming volume to orders.
Format	Enumerated (unsigned integer 8)
Length	1
Possible Values	1 Price Explicit Time 2 Price Pro Rata Null value: 2^8-1
Used In	Contract Standing Data (1013)
User For	Derivatives

Trading Side

FIELD NAME	TRADING SIDE
Description	Indicates the Trading Side.

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FIELD NAME	TRADING SIDE
Format	Enumerated (unsigned integer 8)
Length	1
Possible Values	1 Bid Only (Cash Only) 2 Offer Only (Cash Only) 3 PAKO (Cash Only) 4 Both Sides (Cash Only) Null value: 2^8-1
Used In	Market Status Change (1005)
User For	Cash

Trading Unit

FIELD NAME	TRADING UNIT
Description	Amount of underlying instrument per unit of a derivative contract (to be calculated with the Quantity Decimals). Due to corporate actions, the value may be different between value provided within this field in Contract Standing Data and Outright Standing Data. Value in Outright Standing Data reflects the adjustment due to the corporate action and should be used for that Outright instrument. Trading Unit field does not support decimals and so Lot Multiplier field is introduced to handle integer and decimals. Lot Multiplier field should be used instead of Trading Unit. Trading Unit field is, therefore, populated only for Euronext legacy contracts and instruments.
Format	Quantity (unsigned integer 64)
Length	8
Possible Values	0..2^64-2 Null value: 2^64-1
Used In	Contract Standing Data (1013) Outright Standing Data (1014)
User For	Derivatives

Transaction Type

FIELD NAME	TRANSACTION TYPE
Description	Transaction type or publication type.
Format	Enumerated (unsigned integer 8)
Length	1
Possible Values	1 Plain Vanilla Trade 2 Dark Trade 3 Benchmark Trade 4 Technical Trade 5 Give-up/Give-in Trade 6 Ex/Cum dividend Trade 7 Trade With Condition 15 Summary Report Null value: 2^8-1
Used In	Full Trade Information (1004)
User For	Cash

Transparency Indicator

FIELD NAME	TRANSPARENCY INDICATOR
Description	Used to define the transparency of the trade.
Format	Enumerated (unsigned integer 8)
Length	1

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FIELD NAME	TRANSPARENCY INDICATOR
Possible Values	0 Lit/Regular Trade 1 Dark Trade and Immediate Publication 2 Dark Trade and Deferred Publication Null value: 2^8-1
Used In	Full Trade Information (1004)
User For	Cash

Type Of Corporate Event

FIELD NAME	TYPE OF CORPORATE EVENT
Description	Indicates the last type of corporate event that has occurred on an instrument, such as detachment of rights, or of coupons. The data item is automatically calculated by the adjustment application but in case of problem or error, the data item value could be modified manually, particularly for purging the order book in case of absence of corporate event. This data has to be treated in consideration of the date of the event included into the header of the message. Valid values are: "00" – No specific event "01" – Dividend payment in cash or in stocks "02" – Interest payment (Fix Income for which the price is not expressed in% of the nominal, only) "04" – Split "05" – Bonus (i.e. attribution) "06" – Subscription "07" – Share allocation "08" – Share swap "09" – Reverse split "10" – Merger "11" – Final Fix Income redemption "12" – Capital amortization "13" – Draw announcement (Belgian Fix Income only) "14" – Block trade of controlling interest "15" – Optional corporate events(dividend option) "16" – Complex corporate event "17" – Purge of the order book (purge is initiated manually in the absence of a corporate event, for example, following the modification of the variable tick of the listed instrument) "22" - Luxembourg Stock Exchange corporate event
Format	Alphanumerical ID (character)
Length	2
Used In	Standing Data (1007)
User For	Cash

Type Of Market Admission

FIELD NAME	TYPE OF MARKET ADMISSION
Description	Indicates the type of market to which an instrument has been listed.
Format	Enumerated (character)
Length	1
Possible Values	A Instruments traded on the primary market B Instruments traded on the secondary market C Instruments traded on the New Market D Non-regulated market / instruments traded on the free market ('Marche Libre') E Non-regulated market / Alternext F Non listed G Regulated Market / Non equities H Regulated Market / Equities / Segment A

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FIELD NAME	TYPE OF MARKET ADMISSION
	I Regulated Market / Equities / Segment B J Regulated Market / Equities / Segment C K Regulated Market / All securities / Special Segment L Regulated Market / Equities / Other instruments S OPCVM, SICOMI non listed (French Investment Funds) 6 Off Market 7 Gold, Currencies, and Indices 9 Foreign
Used In	Standing Data (1007)
User For	Cash

U

Underlying Derivatives Instrument Trading Code

FIELD NAME	UNDERLYING DERIVATIVES INSTRUMENT TRADING CODE
Description	Is the underlying of the Derivatives Instrument Trading Code.
Format	Alphanumerical ID (character)
Length	18
Used In	Outright Standing Data (1014)
User For	Derivatives

Underlying Expiry

FIELD NAME	UNDERLYING EXPIRY
Description	Expiry Date of the underlying (in number of days since the 1st of January 1970).
Format	Date (unsigned integer 32) SBE: unsigned integer 32
Length	4
Possible Values	0..2^32-2 Null value: 2^32-1
Used In	Contract Standing Data (1013)
User For	Derivatives

Underlying ISIN Code

FIELD NAME	UNDERLYING ISIN CODE
Description	Underlying ISIN. For Repo: Underlying instrument (instrument used in the loan quotation system) for loan contracts on centralized lending market. For Warrant: Gives the trading code of the underlying listed instrument of a warrant.
Format	Alphanumerical ID (character)
Length	12
Used In	Contract Standing Data (1013) Standing Data (1007) APA Standing Data (1027)
User For	Cash and Derivatives

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Underlying Index Name

FIELD NAME	UNDERLYING INDEX NAME
Description	Underlying Index Name
Format	Text (character)
Length	25
Used In	APA Standing Data (1027)
User For	Cash and Derivatives

Underlying Index Term

FIELD NAME	UNDERLYING INDEX TERM
Description	Term of the Underlying Index
Format	Text (character) {INTEGER-3}+'DAYS' – days {INTEGER-3}+'WEEK' – weeks {INTEGER-3}+'MNTH' – months {INTEGER-3}+'YEAR' – years
Length	8
Used In	APA Standing Data (1027)
User For	Cash Derivatives

Underlying MIC

FIELD NAME	UNDERLYING MIC
Description	Identifies the market to which an instrument' underlying belongs by its MIC (Market Identification Code), according to ISO 10383. Refer to MIC field to have all the authorized values.
Format	Alphanumerical ID (character)
Length	4
Used In	Contract Standing Data (1013) Standing Data (1007)

Underlying Subtype

FIELD NAME	UNDERLYING SUBTYPE
Description	Defined the underlying sub-type associated to the underlying type. Underlying Type "Stock" accepts following Underlying Subtypes: Basket, Dividend, ETF and Share Underlying Type "Index" accepts: Dividend Index, Equity Index, TRF Index and Volatility Index Underlying Type "Future" accepts: Future on Commodities Underlying Type "Exchange rate" accepts: FX Cross Rates (FXCR), FX Emerging Markets (FXEM) and FX Majors (FXMJ) Underlying Type "Commodity" accepts: Agricultural (AGRI), Environmental (ENVR), Freight (FRGT), Fertilizer (FRTL), Industrial products (INDP), Inflation (INFL), Multi Commodity Exotic (MCEX), Metals (METL), Energy (NRGY), Official economic statistics (OEST), Other C10 (OTHC), Other (OTHR), Paper (PAPR) and Polypropylene (POLY)
Format	Enumerated (unsigned integer 8)
Length	1
Possible Values	0 Basket 1 Dividend

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FIELD NAME	UNDERLYING SUBTYPE
	2 ETF 3 Share 4 Dividend Index 5 Equity Index 6 TRF Index 7 Volatility Index 8 Future On Commodities 9 FXCR - FX Cross Rates 10 FXEM - FX Emerging Markets 11 FXMJ - FX Majors 12 AGRI - Agricultural 13 ENVR - Environmental 14 FRGT - Freight 15 FRTL - Fertilizer 16 INDP - Industrial products 17 INFL - Inflation 18 MCEX - Multi Commodity Exotic 19 METL - Metals 20 NRGY - Energy 21 OEST - Official economic statistics 22 OTHC - Other C10 23 OTHR - Other 24 PAPR - Paper 25 POLY - Polypropylene Null value: 2^8-1
Used In	Contract Standing Data (1013)
User For	Derivatives

Underlying Symbol Index

FIELD NAME	UNDERLYING SYMBOL INDEX
Description	Identifies the Symbol Index of the underlying of the instrument.
Format	Numerical ID (unsigned integer 32)
Length	4
Possible Values	0..2^32-2 Null value: 2^32-1
Used In	Contract Standing Data (1013) Outright Standing Data (1014)
User For	Derivatives

Underlying Type

FIELD NAME	UNDERLYING TYPE
Description	Defines the instrument type of the underlying.
Format	Enumerated (character)
Length	1
Possible Values	A Basket with Commodity B Basket C Commodity D Depositary Receipt F Future G Currency Leveraged Index H Other I Index

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FIELD NAME	UNDERLYING TYPE
	J Bonds K Stock Dividend L Leveraged Index N Interest Rate O Other Derivative P Commodity Index Q Commodity Leveraged Index R Right S Stock T Credit U Fund V Currency W Stock Warrant X Exchange Rate Z Security Leveraged Index
Used In	Contract Standing Data (1013)
User For	Derivatives

V

Venue

FIELD NAME	VENUE
Description	Identification of the venue where the transaction was executed using the ISO 10383 segment MIC for transactions executed on a trading venue. Otherwise the BIC is sent following ISO 9362. For Approved Publication Arrangement (APA), possible values are: - 'XOFF' – OTC- TRANSACTIONS – LISTED INSTRUMENTS - 'XXXX' – OTC TRANSACTION – UNLISTED INSTRUMENTS - 'AFSI' – AFS - OTF - INTEREST RATE DERIVATIVES - 'AFSO' – AFS - OTF - BONDS - 'AFSL' – AFS - OTF - STRUCTURED PRODUCTS - 'AFSX' – AFS - OTF - FX FORWARDS - 'SINT' – Systematic INTernaliser (This is a tag not in the ISO).
Format	Alphanumerical ID (character)
Length	11
Used In	Full Trade Information (1004) APA Full Trade Information (1028)

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APPENDIX A: TRADE TYPE ASSOCIATED WITH EMM

	1 = Cash and Derivative Central Order Book (COB)	2 = NAV Trading Facility	4 = Derivative Wholesales	5 = Cash On Exchange Off book	6 = Euronext off-exchange trade reports	7 = Derivative On Exchange Off book	8 = ETF MTF - NAV Central Order Book	99 = Not Applicable (For indices and iNAV)
	On-Exchange On-Book	On-Exchange Off-Book	On-Exchange Off-Book	On-Exchange Off-Book	NA	On-Exchange Off-Book	On-Exchange On-Book	NA
Conventional Trade (Cash and Derivatives)	✓			✓				
Large in Scale (LiS) Trade (Derivatives Only)			✓					
Basis Trade (Derivatives Only)								
Large in Scale (LiS) Package Trade			✓	✓				
Guaranteed Cross Trade (Cash and Derivatives)								
Against Actual Trade (Derivatives Only)			✓					
Asset Allocation Trade (Derivatives Only)								
Exchange for Swap Trade (Derivatives Only)			✓					
Exchange for Physical Trade - Cash Leg (Cash Only)								
Strategy Leg Conventional Trade (Derivatives Only)	✓							
Strategy Leg Large in Scale (LiS) Trade (Derivatives Only)								
Strategy Leg Basis Trade (Derivatives Only)								
Strategy Leg Guaranteed Cross Trade (Derivatives Only)								
Strategy Leg Against Actual Trade (Derivatives Only)								
Strategy Leg Asset Allocation Trade (Derivatives Only)								
Strategy Leg Exchange For Swap Trade (Derivatives Only)								
Strategy Leg Exchange For Physical Trade (Derivatives Only)								
BoB Trade (Cash Only)	✓							
AtomX Trade (Derivatives Only)								
Trade Cancellation (Cash and Derivatives)	✓	✓	✓	✓		✓	✓	
Out of Market Trade (Cash Only)				✓				
Delta Neutral Trade - Underlying Cash Leg (Cash Only)			✓	✓		✓		
Market VWAP Operation Trade (Cash Only)				✓				
Euronext Fund Service Trade (Cash Only)		✓						
Secondary Listing Trade (Cash Only)								
Request for Cross Trade (Derivatives Only)						✓		
Request for cross strategy Leg Trade (Derivatives Only)						✓		
Trade Publication (Cash Only)								
Dark Trade (Cash Only)	✓							
Delta Neutral Trade - Underlying Future Leg (Derivatives Only)			✓			✓		
ETF-MTF NAV Trade (price in basis points) (Cash Only)							✓	
ETF-MTF NAV Dark Trade (price in basis points) (Cash Only)							✓	
Guaranteed Cross - Negotiated deal NLIQ (Liquid)	✓						✓	
Guaranteed Cross - Negotiated deal OILQ (illiquid)	✓						✓	
Large in Scale (LiS) Trade (Cash Only)								
Non-Standard Settlement				✓				
Repurchase Agreement – Repo				✓				
Exchange Granted Trade				✓				

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Other				✓				
Odd Lot				✓				
Large in Scale (LiS) Trade Provisional Price (Derivatives Only)			✓					
Large in Scale (LiS) Package Trade Provisional Price (Derivatives Only)			✓					

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APPENDIX B: MMT FLAGS RULES

LEVEL 1: MMT MARKET MECHANISM

Field	Value	Equities	Funds	Fixed Income	Warrants and	Commodity Derivatives	Trade Reporting	Index Derivatives	Equity Derivatives	Financial Derivatives	Presence	Rules
MMT Market Mechanism	Central Limit Order Book	✓	✓	✓	✓	✓	×	✓	✓	✓	*Opt*	Field EMM equals to 1 – Cash and Derivative Central Order Book (COB) OR Field EMM equals to 8 – ETF MTF - NAV Central Order Book
	Quote Driven Market	×	×	×	×	×	×	×	×	×		Not applicable
	Dark Order Book	✓	✓	×	×	×	×	×	×	×		Field Trade Type equals to 33 – Dark Trade
	Off Book (including Voice or Messaging Trading)	✓	×	✓	✓	✓	✓	✓	✓	✓		Field EMM equals to 2 – NAV Trading Facility OR Field EMM equals to 4 – Derivative Wholesales except for Request for Cross Trades OR Field EMM equals to 5 – Cash On Exchange Off book OR Field EMM equals to 6 – Euronext off-exchange trade reports
	Periodic Auction	×	×	×	×	✓	✓	✓	✓	✓		Field EMM equals to 7 – Derivative On Exchange Off book
	Request for Quotes	×	×	×	×	×	×	×	×	×		Not applicable

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LEVEL 2: MMT TRADING MODE

Field	Value	Equities	Funds	Fixed Income	Warrants and	Commodity Derivatives	Trade Reporting	Index Derivatives	Equity Derivatives	Financial Derivatives	Presence	Rules
MMT Trading Mode	Scheduled Opening Auction	✓	✓	✓	✓	✓	×	✓	✓	✓	*Opt*	**In Market Status Change message** Field Book State equals to 4 = Uncrossing AND Field Trading Period equals to 1 = Opening AND Field Status Reason equals to 0 = Scheduled AND Field EMM <> 7 (Derivative On Exchange Off book) or <> 4 (Derivative Wholesales)
	Scheduled Closing Auction	✓	✓	✓	✓	✓	×	✓	✓	✓		**In Market Status Change message** Field Book State equals to 4 = Uncrossing AND Field Trading Period equals to 3 = Closing AND Field Status Reason equals to 0 = Scheduled AND Field EMM <> 7 (Derivative On Exchange Off book) or <> 4 (Derivative Wholesales)
	Scheduled Intraday Auction	✓	✓	✓	✓	✓	×	✓	✓	✓		**In Market Status Change message** Field Book State equals to 4 = Uncrossing AND Field Trading Period equals to 2 = Standard AND Field Status Reason equals to 0 = Scheduled AND Field EMM <> 7 (Derivative On Exchange Off book) or <> 4 (Derivative Wholesales)
	Unscheduled Auction	×	×	×	×	×	×	×	×	×		Not Applicable
	Continuous Trading	✓	✓	✓	✓	✓	×	✓	✓	✓		**In Market Status Change message** Field Book State equals to 5 = Continuous AND Field EMM <> 7 (Derivative On Exchange Off book) or <> 4 (Derivative Wholesales)
	At Market Close Trading	✓	✓	✓	✓	×	×	×	×	×		**In Market Status Change message** Field Phase Qualifier equals to 2 = Trading At Last
	Out of Main Session Trading	×	×	×	×	×	×	×	×	×		Not Applicable
	Trade Reporting (On Exchange)	✓	✓	✓	✓	✓	×	✓	✓	✓		Field EMM equals to 5 - Cash On Exchange Off book OR Field EMM equals to 4 – Derivative Wholesales

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	Trade Reporting (Off Exchange)	×	×	×	×	×	✓	×	×	×	Field EMM equals to 6 – Euronext off-exchange trade reports
	Trade Reporting (Systematic Internaliser)	×	×	×	×	×	×	×	×	×	Not Applicable
	Undefined Auction	×	×	×	×	✓	×	✓	✓	✓	Field EMM equals to 7 – Derivative On Exchange Off book

LEVEL 3: MMT TRANSACTION CATEGORY

Field	Value	Equities	Funds	Fixed Income	Warrants and Certificates	Commodity Derivatives	Trade Reporting and	Index Derivatives	Equity Derivatives	Financial Derivatives	Presence	Rules
MMTTransactionCategory	Dark Trade	✓	✓	×	×	×	×	×	×	×	*Opt*	Field Trade Type equals to 33 – Dark Trade
	Trade that has Received Price Improvement	×	×	×	×	×	✓	×	×	×		Price has to be between Best bid and Best offer
	Package Trade (excluding Exchange for Physicals)	×	×	×	×	✓	✓	✓	✓	✓		Field Trade Type equals to 26 – Delta Neutral Trade - Underlying Cash Leg OR Field Trade Type equals to 11 – Strategy Leg Conventional Trade (Derivatives Only) OR Field Trade Type equals to 12 = Strategy Leg Large in Scale (LiS) Trade (Derivatives Only)
	Exchange for Physical Trade	×	×	×	×	×	×	×	×	×		Not Applicable
	None apply (a standard trade for the Market Mechanism and Trading Mode)	✓	✓	✓	✓	✓	✓	✓	✓	✓		All other cases

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APPENDIX C: REVISION HISTORY

CHANGE SUMMARY

VERSION NO.	DATE	AUTHOR	CHANGE DESCRIPTION
2.0.0	16 Oct 2017	IT Solutions	First version for phase 2
2.1.0	16 Feb 2018	IT Solutions	Specification changes: - All references to Bourse de Luxembourg (BdL) removed - Section 3.2.1 Clear The Book: Société Générale SI update types removed from the list of resent limits. - Section 3.8 System Failure: precisions added on Market Data Sequence Number in case of MDG restart. - Section 6.10 … Manage BBO and Implied Prices: Section split, and details provided on how to manage BBO and Implied prices. (This is for derivatives and only indicative) - Appendix C - MMT Flag Rules: for MMT Market Mechanism, the value Periodic Auction can also be triggered with Market Data Update Type: 57 = Request for Cross Strategy Leg Trade (Derivatives Only) - Section How To … Determine Round Lot with Quantity Notation: Section added to provide details on this mechanism Message changes: - In Market Update (1001): Details on Wholesales Request For Cross (RFC) added including cross in Best Bid and Offer columns in Market Data Update Types table. (This is for derivatives and only indicative) - Full Trade Information (1004): Fields "Market Of Reference MIC" and "MiFID Emission Allowance Type" have been deprecated Field changes: - All optional bitmap fields have been set to mandatory (since no null value possible for bitmap), fields are: "Available Wholesale Trade Type", "Trade Qualifier", "Phase Qualifier" and "Order Type Rules" - 3 New possible values in "Market Data Update Type" and "Trade Type": "Guaranteed Cross – Negotiated deal NLIQ (Liquid)", "Guaranteed Cross – Negotiated deal OILQ (illiquid)" and "Large in Scale (LIS) Trade (Cash)" - Lot Size: field description improved. - Tick Value: description improved to specify it has to be used with field "Tick Value Decimals" Specification changes: - Appendix B: Trade type Associated with EMM: Trade types added in version 2.1.0 added in this section Field changes: - Scheduled Event Time: description updated to precise time format specificities on cash - Phase Qualifier: bit in 1st position is deprecated since the target behavior for "no qualifier" is having all bits set to 0. Until the bit is fully removed both behavior (all bits set to 0 and 1st bit ("No qualifier") set to 1) are accepted
2.1.2	13 Jul 2018	IT Solutions	- **Scheduled Event Time** field description updated - New ICBCode field added to the section 7.2.1 Standing Data (1007)
2.1.3	30 Aug 2018	IT Solutions	APPENDIX C : MMT Flag Rules : - MMT Trading Mode rules updated for Trade Reporting (On Exchange)

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VERSION NO.	DATE	AUTHOR	CHANGE DESCRIPTION
2.1.4	13 Sep 2018	IT Solutions	Section 5.6.2 Automated Market Reference (AMR): - New paragraph about AMR & MAX STRIKE PRICE LIMIT added Section 8. Field Description: - **Strike Price** field description updated : the field is to be calculated with **Price/Index Level Decimals**
2.1.5	8 Oct 2018	IT Solutions	General : • **SBE Template Version** added to the front page and to the Document History Section 8. Field Description: • 3 values added to the **Market Data Update Type** field: - 82 = Large in Scale (LiS) Trade in basis points (Derivatives Only) - 83 = Large in Scale (LiS) Package Trade in basis points (Derivatives Only) - 84 = Strategy Leg Large in Scale (LiS) Trade in basis points (Derivatives Only) • 2 values removed from the **Market Data Update Type** field: - 252 = Static Collar Reference Price (Cash and Derivatives) - 253 = Dynamic Collar Reference Price (Cash and Derivatives) • Order Type Rules field: the values bit in position 2 - Stop / Stop Loss and bit in position 3 - Stop Limit are only for OEG • **Phase Qualifier** field: value **0 – No Qualifier** is now deprecated • **Scheduled Event** field: value **12 – Suspension** is not used in MDG • **Strike Price** field: the decimals field to be used for Cash instruments is **Strike Price Decimals** instead of Price/Index Level Decimals • 3 values added to the **Trade Type** field: - 42 = Large in Scale (LiS) Trade in basis points (Derivatives Only) - 43 = Large in Scale (LiS) Package Trade in basis points (Derivatives Only) - 44 = Strategy Leg Large in Scale (LiS) Trade in basis points (Derivatives Only)
2.3.0	20 Nov 2018	IT Solutions	■ Market Data Update Type : new values for RFQ (86..89). ■ Market Data Action Type : new values for RFQ (7, 8). ■ Trade Qualifier: new value 7 (Deferred Publication), marked values 5 & 6 for future use) ■ Standing Data (1007) new fields ThresholdLISPostTrade60mn, ThresholdLISPostTrade120mn and ThresholdLISPostTradeEOD related to Dark facilities. ■ Full Trade Information (1004): added a repeating section header at the end of the message, not used. ■ The description of the following application messages were amended due to ETF-MTF support: • Market Update (1001) • Statistics (1009) ■ EMM: added '9' Listed not Traded. ■ Renamed any reference to 'Luxembourg Stock Exchange' into 'Bourse de Luxembourg' (fields MIC, Optiq® Segment and Status Reason). ■ MICList is now Cash only, whilst Liquid Instrument Indicator is now Cash and Derivatives. ■ Pricing Algorithm: added value 'MOC' – Market On Close. ■ Modified the description of fields Trade Qualifier, Trade Type and Order Type Rules.

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VERSION NO.	DATE	AUTHOR	CHANGE DESCRIPTION
			▪ Fixed description of Leg Price. ▪ Fixed Typos. ▪ New template version: 107.
2.4.0	20 Nov 2018	IT Solutions	▪ OptiqSegment: new value 14 (Block) ▪ MIC: new value (-'XSMP'- EURONEXT BLOCK) ▪ MarketModel: new value 6 (Conditional Uncrossing) ▪ Added section 2.3.3.5 Real Time Channels for Block ▪ Added section 2.3.3.10 Snapshot Channels for Block ▪ New template version: 110
3.0.0	30 Apr 2019	IT Solutions	▪ Major update for the migration of the Derivatives Markets to Optiq. The following sections have been updated: ▪ Section 0 **Market Data Channels** | Section 0 **Market Data Messages per Channel** | Section 1.1.1.1 **Real Time Channels for Equities, Fixed Income and Funds Central Order Book** | Section 1.1.1.2 **Real Time Channels for Equities Best of Book** | Section 1.1.1.3 **Real Time Channels for Equities Derivatives, Indices Derivatives, Financial Derivatives, Commodities, Warrants and Certificates** | Section 1.1.1.9 **Snapshot Channels for Equities, Fixed Income and Funds Central Order Book** | Section 0 **Snapshot Channels for Equities Best of Book** | Section 1.1.1.10 **Snapshot for Equities Derivatives, Indices Derivatives, Financial Derivatives, Commodities, Warrants and Certificates** | Section 0 **Book Retransmission** | Section 0 **Clear the Book** | Section 0 **Morning Book Retransmission** | Section 0 **Intraday Book Retransmission** | Section 0 **Snapshots** | Section 0 **Shaping** | Section 0 **Trade Retransmission** | Section 0 **Production Timetable** | Section 0 **Technical Format Fields** | Section 0 **Date and Time Conventions** | Section 0 **Instrument Ticks** | Section 0 **Symbol Index** | Section 0 **Standing Data (1007)** | Section 0 **Contract Standing Data (1013)** | Section 0 **Outright Standing Data (1014)** | Section 0 **Strategy Standing Data (1012)** | Section 0 **Timetable (1006)** | Section 0 **Market Update (1001)** | Section 0 **Price Update (1003)** | Section 0 **Full Trade Information (1004)** | Section 0 **Market Status Change (1005)** | Section 0 **Statistics (1009)** | Section 0 **Real Time Index (1008)** | Section 0 **Field Description** ▪ The following sections have been added: ▪ Section 0 **Multicast Group Unjoining** ▪ Section 0 Trading Day Schedule: Timetable Mechanism ▪ Section 0 Derive Implied Prices Volume from the Aggregated BBO ▪ Section 0 **Determine the option underlying expiry** ▪ Section 6.16 Use an Execution Summary Message ▪ Section 0 Determine the Statistics On and Off-Book for an Instruments (COB, Wholesales & RFC)
3.1.0	6 Sep 2019	IT Solutions - WMA	Changes made in this version of the document, release with SBE template 204, are: ▪ Split section 1.1.1.10 "Snapshot Channels for Equities Derivatives, Indices Derivatives, Financial Derivatives, Commodities, Warrants and Certificates" into 2, to separate Warrants and Certificates ▪ In section 0 "Symbol Index" removed details of Symbol Index ranges ▪ Added section 0 "…DETERMINE THE TVTIC" ▪ In section 0 "Market Update (1001)" updated market data update type table with new values ▪ In section 0 "Full Trade Information (1004)" updated description message ▪ Formatting / spelling / grammar updates of descriptions throughout the document ▪ The following changes were made in the existing messages as part of SBE 203:

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VERSION NO.	DATE	AUTHOR	CHANGE DESCRIPTION
			▪ **Full Trade Information** (1004): In the block removed field *Strategy Code*; In the block added fields *Evaluated Price* and *Message Price Notation* ▪ **Contract Standing Data** (1013): In the block added fields *MIFID II Liquid Flag* (already in SBE Template), *Pricing Algorithm* ▪ **Outright Standing Data** (1014): In the block deprecated field *Lot Size* ▪ The following changes were made in the existing messages as part of SBE 204: ▪ **Outright Standing Data** (1014): In the block added field *Trading Unit* ▪ Field Descriptions updated with SBE templates 201 through 203: ▪ Added new fields as part of SBE 203: Evaluated Price; Message Price Notation; MIFID II Liquid Flag; Pricing Algorithm; a) Enriched values for fields as follows: As part of SBE 117: *Market Data Update Type* – added values 99 = MidPoint BBO; *Optiq Segment* – added value 15 = Forex; As part of SBE 201: *Contract Type* – added value U = Underlying, *Derivatives Instrument Type* – added value 4 = Underlying (Not used for Euronext Markets); *Instrument State* – added values 18 = Reserved due to Leg & 19 = Suspended due to Leg; As part of SBE 203: *EMM* – added value 15 = Delta Neutral Contingency leg; *Market Data Update Type* – added values 100 = Conventional Trade - Provisional price; *Trade Type* – added values 100 = Conventional Trade - Provisional price, 101 = Large in Scale (LiS) Trade - Provisional price, 102 = Large in Scale (LiS) Package Trade - Provisional price; ▪ Deprecated or Removed values as follows: ▪ As part of SBE 202: for field *Trade Type*: removed wrongly introduced in SBE 201 value Trade Reversal ▪ As part of SBE 203: for field *Strategy Code*: C = Call or Put Cabinet; Z = Reduced Tick Spread; u = Buy Write; ▪ Enriched conditions and descriptions of fields Collar Max Unhalt Nb; Collar Unhalt Delay; Dynamic Collar Logic; MIFID Execution ID; Leg Ratio; Trading Unit ▪ Throughout the document – added clarification of existing concepts, fixed formatting, spelling and grammar; added clarification on what is covered by the On-exchange Off-book (OEOB) market mechanism ▪
3.2.0	14 Feb 2020	IT Solutions – IZE	1) Add new Exchange code values to be used for Oslo Market Place: ▪ L : Oslo Cash Underlying ▪ N: Oslo Index Derivatives ▪ O: Oslo Equity Derivatives 2) SBE template 217 version added to the front page and to the document history. 3) Update the Packet Sequence Number (PSN) description
4.0.0	26 Feb 2020	IT Solutions – FBO	1) SBE template version added to the front page and to the document history 2) Add ISE Bunds & Funds support with4 new messages: ▪ BF Instrument Reference (1201) ▪ BF Trade (1202) ▪ BF NAV (1203) ▪ BF Instrument Suspension (1204) 3) Add the Optiq segment ISE B&F 4) Add new section for IBF channels : 2.1.3.6 Real Time Channels for IBF 5) Add two new MDG Set of Channels ID to be used for Oslo Market:

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VERSION NO.	DATE	AUTHOR	CHANGE DESCRIPTION
			▪ For Equities Asset Class and Country Norway, the MDG set of Channels ID is: 10 ▪ For Fixed Income Asset Class and Country Norway, the MDG set of Channels ID is: 12 ▪ Add **Norway** as Country Split for following asset classes: Indices, Equity-Derivatives and Index-Derivatives. In this case, existing MDG set of Channels ID will be used for Norway. 6) **Specification Improvements** : ▪ MDG packet Sequence Number (PSN) description has been updated to indicate that the first PSN is 1 instead of 0. ▪ Update the length of repeating groups to 1 instead of 2 for following messages (1001/ 1002/ 1003/ 1005/ 1006/ 1007/ 1009/ 1012/ 1013/ 1014/ 1016). ▪ Following Request For Cross Market Data Update Types; 25, 26, 56 and 57 are valid for any Derivatives segment and not only Commodities segment. Footnote is removed in the table of Market Data Update Type per segment section 7.3.1 ▪ Set the values 29 (Large in Scale (LiS) Package Trade (Derivatives Only) and 7 (Total Traded Volume) as deprecated in both Market Data Update type table in section 7.3.1 and Market Data Update Type field definition. ▪ Update description in section 7.3.1 to explain that implied volume is not taken into account in the Bid/Offer updates. ▪ Reference is added for Price / Index Level Decimals field in all the document. ▪ Add fields Price Limits and Quote Spread Multiplier as deprecated in message 1005 and fields description. ▪ Remove Lot Size in description of section 6.15 (Determine Round Lot With Quantity Notation). ▪ Update the definition of *Full Order Book Market Update channel* and *Full Order Book Order Update channel* in section 0.
4.0.1	11 Mar 2020	IT Solutions – IZE	**General Improvement:** ▪ Section "Document Target" renamed to "Document Audience". ▪ "Financial Derivatives" is set to out of scope in Scope section (Page 2). ▪ In "Associated Documents" section, Euronext Cash and Derivatives - File Specifications and Euronext Optiq Market Data Gateway Production Environment document's versions updated. ▪ Support contact is updated. ▪ In "Further Information" section the Euronext Portal link is updated. ▪ The "SBE templates and specifications per Optiq segment" table is updated by adding **Irish Bonds and Funds** segment. ▪ Name of the column "Latest" is updated to "Latest Supported" in table "SBE templates and specifications per Optiq segment". ▪ Update "Types of data" in section "Market Data Channels" by renaming channel to pack and adding new pack for **Irish Bonds and Funds** named "**IBFR**" description. ▪ For Scalability (page 11) add 10Gbits for Unshaped channels to highlight that the unshaped is only available under 10Gbits. ▪ Add Segment in column named "Asset Class" because what is described can be either an asset class or segment. ▪ Update the name of segment to "**Irish Bonds and Funds**" in table in page 12. ▪ Remove *Book Retransmission* section 3.2.1 and update the *Book Retransmission* section 0, to have definition in one place in the document. ▪ Update the description of Instrument Identifiers section 0 ▪ Update the **Long Issuer Name and Long Instrument Name** fields length to 250 in BF Instrument Reference message 1201. ▪ Update Nav Price field as Mandatory in message BF NAV 1203. **Luxembourg Stock Exchange MDG Specification document merge :**

VERSION NO.	DATE	AUTHOR	CHANGE DESCRIPTION
			▪ "Luxembourg Stock Exchange" Optiq segment is added in templates and versions table available in section "Further Information". ▪ Add in "Types of data" in pack REFT , index messages are included in the pack only for LuxSE. ▪ Add **Luxembourg Stock Exchange** Asset Class in table page 12. ▪ Add new sections: 1.1.1.8 Real Time Channels for Cash LuxSE and 2.1.3.17 Snapshot Channels for Cash LuxSE. ▪ Add new section for Euronext Cash LuxSE 3.10.2 under Production Timetable. **Euronext APA (Approved Publication Arrangement) and Euronext Synapse Specification document merge:** ▪ "Trade Reporting and Publication" added as in scope in "Scope" section ▪ "Trade Reporting and Publication" Optiq segment is added in table templates and versions table available in section "Further Information" . ▪ Add APA Pack "APRT" as Type of data under "Market Data Channels" section. ▪ Add segment **Trade Reporting and Publication** segment in table in page 12. ▪ Add APA messages in section Market Data Messages per Channel (APA Standing Data / APA Full Trade Information / APA Quotes). ▪ Add new sections: 2.1.3.7 Real Time Channels for APA and 2.1.3.16 Snapshot Channels for APA. ▪ Add new section 3.10.3 Euronext APA and Synapse ▪ Add new section "MiFID Instrument ID" which is used as Instrument identifier for APA. ▪ Update the section 6.1.1 Trade Cancellation to highlight the case of APA as a note. ▪ Add Quote Cancellation section. ▪ Add another example for APA under section 6.3 Determine The Message Type. ▪ Add note for APA under section 6.8 Look For Trade. ▪ Add new sections for APA messages : 7.2.6 , 7.3.5 and 7.3.6. ▪ Add APA messages in section 7.4 Snapshot Messages. ▪ Add following fields definition as they are used in APA messages: (Efficient MMT Agency Cross Trade Indicator, Efficient MMT Algorithmic Indicator, Efficient MMT Benchmark Indicator, Efficient MMT Contribution to Price, Efficient MMT Duplicative Indicator, Efficient MMT Market Mechanism, Efficient MMT Modification Indicator, Efficient MMT Negotiation Indicator, Efficient MMT Off Book Automated Indicator, Efficient MMT Post Trade Deferral, Efficient MMT Publication Mode, Efficient MMT Special Dividend Indicator, Efficient MMT Trading Mode, Efficient MMT Transaction Category, Option Type, Quote Update Type and Underlying Index Name).
4.0.2	30 Mar 2020	IT Solutions – IZE	**Document Improvements** ▪ Remove Further Information section and replace it by the content of section "Scope" and section "Associated Documents". ▪ Add new table of Optiq segment /SBE template versions in "Scope" section. ▪ Update the presentation of "Associated Document" section ▪ In Production Timetable section 0 remove section Euronext Luxembourg because it has the same timetable definition as provided in section Cash and Derivatives Markets. ▪ In statistics (1009) section 0 add clarification about the high and low statistics calculation for strategy trades. ▪ In Market Data Update Type field following values are removed because they are not used: 74 New Bid on Wholesale RFC (Derivatives Only) 75 New Offer on Wholesale RFC (Derivatives Only) 76 Updated_Bid_on_Wholesale_RFC 77 Updated_Offer_on_Wholesale_RFC 78 Clear Wholesale RFC (Derivatives Only)

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VERSION NO.	DATE	AUTHOR	CHANGE DESCRIPTION
			OSLO Migration updates ▪ Section 0 name is updated and an explanation added to say that this section is defined only for APA and Synapse facilities. ▪ Add Oslo Market MICs in MIC field possible values: - 'XOSL' – OSLO BORS ASA - 'MERK' – MERKUR MARKET - 'XOAS' – OSLO AXESS - 'XOAM' – NORDIC ALTERNATIVE BOND MARKET **Euronext APA and Synapse Merge Updates** ▪ Section 0 name is updated and an explanation added to say that this section is defined only for APA and Synapse facilities. ▪ Add Glossary in section 0 to give definition of Euronext APA and Euronext Synapse. ▪ Quote Update Type field values updated ▪ Add APA specific MICs in **MIC** and **Venue** fields possible values: - 'XOFF' – OTC- TRANSACTIONS – LISTED INSTRUMENTS - 'XXXX' – OTC TRANSACTION – UNLISTED INSTRUMENTS - 'AFSI' – AFS - OTF - INTEREST RATE DERIVATIVES - 'AFSO' – AFS - OTF - BONDS - 'AFSL' – AFS - OTF - STRUCTURED PRODUCTS - 'AFSX' – AFS - OTF - FX FORWARDS - 'SINT' – Systematic INTernaliser (This is a tag not in the ISO).
4.1.0	7 May 2020	IT Solutions - WMA	▪ The following changes have been made to this version of the document: ▪ In Messages: - **BF Instrument Reference (1201):** *Minimum Amount* and *Interest Payment Date* changed from Mandatory to Optional; - **BF Trade (1202):** Bid/Offer Date Time changed from Mandatory to Optional; - **BF NAV (1203):** *NAV Price* changed from Mandatory to Optional.
4.2.0	4 Jun 2020	IT Solutions - FBO	Integration of Oslo Fixed Incomes: ▪ New values for Trade Type: ▪ 46 Non-Standard Settlement ▪ 47 Repurchase Agreement – Repo (OBOE only) ▪ 48 Exchange Granted Trade (OBOE only) ▪ 49 Other (OBOE only) ▪ 50 Odd Lot ▪ New value for Instrument Expression Unit: ▪ 7 Yield ▪ New fields Settlement Date and Repo Settlement Date in FullTradeInfo (1004) message. ▪ New field Non Anonymous in Standing Data (1007) ▪ New Long Order Update (1015) message for FXI non-anonymous information. ▪ Revisited note on TVTIC determination in section 0 How to …Determine the TVTIC. ▪ Added links to this section from the Full Trade Information (1004) and APA Full Trade information (1028) message descriptions. ▪ Replaced section numbers in history with references fields.
4.2.1	30 Jun 2020	IT Solutions - WMA	The following section has been updated: ▪ In Standing Data (1007): Renamed "Non Anonymous" field into "Anonymous" to stick with SBE 302 templates ▪ In Field Description: Updated description for Field "Anonymous"

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VERSION NO.	DATE	AUTHOR	CHANGE DESCRIPTION
4.2.2	28 Jul 2020	IT Market Services - WMA	Following sections have been updated: ■ In …Use an Execution Summary Message: Execution Summary message is enlarged to cash segments (Warrants & Block excluded) ■ In Market Update (1001): Execution Summary is now sent for FXI, ETF and EQU ; Add a section for details on execution summary message ■ In Depositary List: Enriched values for field *Depositary List* ■ Hotfix: In Market Update (1001), Market Data Update Type 37 and 53 are used by Derivatives segments (Delta-Neutral)
4.3.0	10 Aug 2020	IT Market Services – WMA	Following sections have been updated: ■ In LIS Package Structure (1016): Added *Leg Last Traded Price, Leg Last Traded Quantity* in Package Components section. ■ In Field Description: Added *Leg Last Traded Price*, *Leg Last Traded Quantity*; Enriched description of field *Session*
4.3.1	20 Sep 2020	IT Market Services – WMA	■ The following changes have been made to this version of the document: ■ In Book Retransmission, adding of Long Order Update message (for Fixed Income segment) ■ In Standing Data (1007), field Anonymous is moved into EMM Pattern section as described in SBE Template ■ In Market Status Change (1005): Clarification of the message sending rules and of the use of session for Structured Products. ■ In Full Trade Information (1004), SettlementDate and RepoSettlementDate are optional ■ In Field Description: ■ MarketDataUpdateType: adding back values to reflect SBE Template even if it is not used (added in grey) ■ Session: explain the meaning of the different value ■ MIC: adding of 'XOBD' ■ Adding of Appendix Trade type Associated with EMM and Appendix MMT Flags Rules
4.4.0	2 Nov 2020	IT Market Services – WMA	■ Introduction of SBE 304 – no impacts
4.5.0	4 Jan 2021	IT Market Services	■ Introduction of SBE 305 – no impacts
4.6.0	8 Feb 2021	IT Market Services - WMA	■ Introduction of SBE 306 ■ The following changes have been made to this version of the document: ■ In Field Description: - Enriched values for field as follows: Phase Qualifier with new bits '6' (Stressed Market Conditions) and '7' (Exceptional Market Conditions).
4.6.1	2 Jul 2021	IT Market Services - WMA	■ The following changes have been made to this version of the document: ■ In …Determine The TVTIC: - Section updated
4.7.0	8 Jul 2021	IT Market Services – SNM / KZ	■ Introduction of SBE 307 – no impacts ■ The following changes have been made to this version of the document: ■ In Statistics (1009): updated the stats update type table ■ Addition of a new MDG Set of Channels ID to be used for Fastmatch (Forex: 34)
4.10.0	6 Oct 2021	IT Market Services – FLO	■ Introduction of SBE 310 ■ The following changes have been made to this version of the document:

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VERSION NO.	DATE	AUTHOR	CHANGE DESCRIPTION
			▪ In 7.3.14 Real Time Index (1008): clarification on Options Liquidation Index (Level 7) for AEX Index definition: It is the average of the index level calculated every 1 minute between 15:30 (CET) and 16:00 (CET). ▪ In 7.3.6 APA Quotes (1026): Added APA Origin field, which determines if Quote was submitted by a UK entity or not. ▪ In 7.3.7 APA Full Trade Information (1028): Added APA Origin field, which determines if APA transaction was submitted by a UK entity or not. ▪ In 1.1 Introduction : Added a reference on UK DRSP regulatory framework governing. ▪
4.11.0	24 Nov 2021	IT Market Services – WMA	▪ Introduction of SBE 311 – no impacts
4.12.0	24 Dec 2021	IT Market Services – MMO/WMA	▪ Introduction of SBE 312 ▪ The following changes have been made to this version of the document : ▪ In 1.1 Introduction : Added a reference on UK onshored regulation. ▪ In 1.2 EU and UK MiFID II : Added a reference on UK onshored regulation. ▪ In 1.3 Glossary : Added a reference on UK onshored regulation. ▪ In 2.1.1 Market Data Channels : Added a reference on UK onshored regulation. ▪ In 2.1.3 Market Data Messages per Channel : Added a reference on UK onshored regulation. ▪ In 5.2 Date and Time Conventions : Added a reference on UK onshored regulation. ▪ In 5.4 Price, Quantity, Ratio and Amount Formats : Added a reference on UK onshored regulation. ▪ In 5.7 Instrument Identifiers : Added a reference on UK onshored regulation. ▪ In 6.19 …Determine The TVTIC : Added a reference on UK onshored regulation. ▪ In 7.2.2 Standing Data (1007) : Added a reference on UK onshored regulation. ▪ In 7.2.3 Contract Standing Data (1013) : Added a reference on UK onshored regulation. ▪ In 7.3.5 Full Trade Information (1004) : Added a reference on UK onshored regulation. ▪ In 7.3.7 APA Full Trade Information (1028) : Added a reference on UK onshored regulation. ▪ In 8. Field Description : Added a reference on UK onshored regulation.
4.13.0	1 Mar 2022	IT Market Services – FNS	▪ Introduction of SBE 313 ▪ The following changes have been made to this version of the document : ▪ Addition of Section 1.6 Future Use ▪ In 6.14 Determine Closing Price: Added the explanation on how closing will be computed following the new functionality. ▪ In Price Update (1003): Addition of *Price Qualifier* field. ▪ Add new value "16 = Closing Price" to Scheduled Event field ▪ Add new value "33 = Closing Price" to Market Data Price Type field
4.13.1	19 Apr 2022	IT Market Services – FNS	▪ The following changes have been made to this version of the document : ▪ Adjustment of the descriptions provided within Sections 7.3.14 Real Time Index (1008) and 7.3.15 Index Summary (1011) to accommodate End of Day Innovative Indices

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5.16.0	31 May 2022	IT Market Services – WMA	■ Introduction of SBE 316. ■ The following changes have been made to this version of the document: ■ In ...Determine the TVTIC: ■ Section updated ■ In Standing Data (1007): ■ Field added: *Long Mnemonic* ■ In Market Update (1001): - Market Data Update Types section updated, addition of values "101" (High Order Price Control Collar), "102" (Low Order Price Control Collar), "103" (Order Price Control Collar Reference Price) ■ In Full Trade Information (1004): - Description updated - Field added: *Trade Unique Identifier* ■ In APA Full Trade Information (1028): ■ Description updated ■ Field added: *Trade Unique Identifier* ■ In Real Time Index (1008): - Description updated ■ In Index Summary (1011): - Description updated ■ In Field Description: - Description updated: Bit "3" (Random Uncrossing) in field *Phase Qualifier* is now applicable for both Cash and Derivatives - Field added: *Trade Unique Identifier* - Value added in field *Exercise Style*: "5" (Periodic) - Values added in field *Market Data Update Type*: "101" (High Order Price Control Collar), "102" (Low Order Price Control Collar), "103" (Order Price Control Collar Reference Price) - Values added in field *Underlying Type* for compatibility purposes but not used in MDG messages: "A" (Basket with Commodity), "B" (Basket), "D" (Depositary), G" (Currency Leveraged Index), "H" (Other), "J" (Bonds), "K" (Stock Dividend), "L" (Leveraged Index), "N" (Interest Rate), "O" (Other Derivative), "P" (Commodity Index), "Q" (Commodity Leveraged Index), "R" (Right), "T" (Credit), "U" (Fund), "V" (Currency), "W" (Stock Warrant), "Z" (Security Leveraged Index)
5.17.0	1 Aug 2022	IT Market Services – WMA	■ Introduction of SBE 317. ■ The following changes have been made to this version of the document: ■ In Market Data Channels: ■ Section updated: 19 (Italy TAH) and 33 (Block) were wrongly added in Equities segment. ■ In Snapshot Channels for Equities, Fixed Income and Funds Central Order Book: ■ Standing Data (1007) message not broadcasted in the REFT Snapshot lines. ■ In Market Update (1001): - 'X' denotes values removed: Market Update values 103, 252 and 253 were never sent in MDG ■ In TradeUniqueIdentifier: ■ Details added for conditions of the field
5.18.0	15 Sep 2022	IT Market Services – FSE – WMA	Introduction of SBE 318. The following changes have been made to this version of the document: In Standing Data (1007):

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			▪ Fields added: *Max Order Amount Call*, *Max Order Amount Continuous*, *Max Order Quantity Call*, *Max Order Quantity Continuous*, *Pool Factor* In Field Description: ▪ Fields added: *Max Order Amount Call, Max Order Amount Continuous, Max Order Quantity Call, Max Order Quantity Continuous, Pool Factor* ▪ Description updated for *Price Qualifier*: "For future use" is removed
5.18.1	11 Oct 2022	NMA	The following changes have been made to this version of the document: In Market Status Change (1005): - Table updated: In Continuous Phase the combination Book State 'Continuous' with Phase Qualifier 'Random Uncrossing" was missing
5.19.0	24 Oct 2022	IMI - WMA	Introduction of SBE 319. The following changes have been made to this version of the document: In Market Update (1001): - Values removed (internal use only) from the table: '252' (Static Collar Reference Price), '253' (Dynamic Collar Reference Price) and '103' (Order Price Control Collar Reference Price) In Price Update (1003): - Field PriceQualifier: 'For Future use' is removed In Market Status Change (1005): - Table updated In Field Description: - Value added for field *MIC*: 'MTAH' (Euronext Milan – Trading After Hours) - Value added for field *PriceQualifier* '9' (Closing Price of Reference Market) - Value added for field *MarketDataUpdateType*: '104' (Issuing or Tender Offer Trade) - Value added for field *PhaseQualifier*: '9' (Quoting Period) - Value added for field *TradeType*: '103' (Issuing or Tender Offer Trade) - Fields MaxOrderQuantityCall and MaxOrderQuantityContinuous: type is Quantity instead of Amount
5.20.0	28 Oct 2022	FLO - WMA	Introduction of SBE 320. The following changes have been made to this version of the document: ▪ In Standing Data (1007): ▪ Repeating group header ***EMMPattenRep*** value range is corrected to 0.. 2^8-2 In Field Description: - Value removed for field *MarketDataUpdateType*: '103' (Order Price Control Collar Reference Price) – Internal use only - Value added for field *MarketDataUpdateType*: '105' (RFQ Trade) - Value added for field *MIC*: 'ATFX' (ATFUND MTF) - Value added for field *TradeType*: '104' (RFQ Trade)
5.23.0	7 Mar 2023	WMA	Introduction of SBE 323. The following changes have been made to this version of the document: ▪ In Market Data Messages per Channel: Standing Data (1007) is never sent in Snapshot ▪ In Market Update (1001):

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			■ Value 95 (DCRP Inter-Month Spread) was missing in the table In Field Description: - Field MIC: Values 'ETFP', 'ETLX', 'MOTX', 'SEDX' and 'XMOT' are added - Field InstrumentUnitExpression: Value '4' (Percentage Mixed) is added - Field OptionType: Value '3' (Other) is added - Field PaymentFrequency: Values '9' (No Coupon), '10' (At Maturity), '11' (Triannual), '12' (Capitalization), '13' (IMM Dates), '14' (Bimestrial), '15' (Weekly) are added ■ Field PhaseQualifier: Bit 10 (Execution Prevention Across All Firms) is added
5.28.0	31 Jul 2023	WMA	Introduction of SBE 328. The following changes have been made to this version of the document: ■ In Contract Standing Data (1013): ♦ Field is added: Lot Multiplier ♦ Fields description is updated: Trading Unit and Strike Price Decimals Ratio ■ In Outright Standing Data (1014): ♦ Fields are added: Lot Multiplier and Expiration Date ♦ Field description is updated: Trading Unit ■ In Automated Market Reference (AMR): New logic for AMR computation ■ In Market Data Channels: Addition of MDG Set of Channels IDs for Italy ■ In Market Status Change (1005): Example is updated with the combination Trading Period = Closing in Continuous Phase ■ In Field Description: ♦ Fields are added: Lot Multiplier, Expiration Date, ♦ Values are added for field Exchange Code: Italian exchange codes (E, I and U) ♦ Description is updated for field MIC, Trading Unit and Strike Price Decimals Ratio
5.28.1	15 Sep 2023	WMA	The following changes have been made to this version of the document: ■ In Market Update (1001): ♦ *Market Data Update Type* '104' (Issuing or Tender Offer Trade) is sent in FBOU and FBMU channels for Fixed Income segment
5.29.0	23 Oct 2023	WMA	Introduction of SBE 329. The following changes have been made to this version of the document: ■ In Real Time Channels for Equities Derivatives, Indices Derivatives, Commodities, Warrants and Certificates: Added a clarification on 1Gbps channel which is compressed and conflated for Derivatives Segments (Warrants and Certificates is excluded) ■ In Standing Data (1007): InstrumentUnitExpression in main section was deprecated, InstrumentUnitExpression in EMMPatternRep section should be used instead. ■ In Market Update (1001): - "106" (FLIP Spread) and "107" (FLIP Reference Price) are sent on Derivatives Segments - "101" (High Order Price Control Collar) and "102" (Low Order Price Control Collar) are sent on Warrants & Certificates. ■ In Market Status Change (1005): Message is sent for Reservation due to Static Collars or for Reservation due to Future Limit Interruption Protection (FLIP).

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			■ In Statistics (1009): Added clarification on column "Val." for Valuation Price. ■ In Field Description: ♦ Value added in *InstrumentState* field: "21" (Reserved Future Limit Interruption Protection)
5.31.0	1 Dec 2023	NTDP	The following changes have been made to this version of the document: ■ In Market Update (1001) – update the Execution Summary subsection to detail that Dark trades are not included in the Execution Summary message ■ In Standing Data (1007) – DarkMinimumQuantity field in main section was deprecated ■ In Field Description: ♦ Field "Dark Minimum Quantity" was deprecated – not expected any longer nor applicable for the Dark functionality

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