

# Turquoise

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## TQ301 – Native Trading Gateway

Issue 3.10.1

10 July 2020





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## 1.0 Introduction

Turquoise offers a native low latency trading interface to provide Participants with a protocol optimised to meet the needs of trading strategies where speed is a primary consideration. The protocol uses the minimum number of attributes and a binary format to ensure that messaging is as efficient as possible.

The native protocol provides the ability to submit, replace, cancel and mass cancel orders on Turquoise. This specification describes a conceptual overview of the protocol as well as providing technical guidance on adopting the native protocol to connect to Turquoise.

The interface is a point-to-point service based on the TCP/IP standard. For consistency FIX message identifiers are used on the native Interface. However, the format and content of the messages are different.

### 1.1 Purpose

The purpose of this document is to provide a technical description of the Native trading interface available at Turquoise for:

Turquoise Global Holdings Limited (TGHL, also known as Turquoise UK); and  
Turquoise Global Europe B.V. (TGHE, also known as Turquoise Europe)

### 1.2 Readership

This document outlines how to connect to the Native trading gateway and the detailed message types and fields used.

When read in conjunction with the other technical specifications, it is intended that these documents provide all of the details directly connected Turquoise Participants require to develop to the trading services.

This document is particularly relevant to technical staff within the MTF's member firms.

### 1.3 Document Series

This document is part of series of technical documents providing a holistic view of the full trading and information services available which can be found on the Turquoise website here ['Document Library'](#).

#### Interfaces and information dissemination

For further information regarding Turquoise connectivity, trading and subscription to market data, please refer to the following documentation:

- TQ102 – Connectivity Guide
- TQ103 – Trading Technical Parameters
- TQ–01 - Trading Gateway (FIX 5.0) Specification
- TQ–02 - Post Trade Gateway (FIX 5.0) Specification
- TQ203 – Drop Copy Gateway (FIX 5.0) Specification
- **TQ301 – Trading Gateway (Native) Specification (this document)**
- TQ501 – Guide to Reference Data Services

- TQ502 – Guide to Purchase and Sales File

### **Certification and Testing Services**

For further information regarding Certification of Participant's software and ongoing testing obligations with Turquoise, please refer to the following documentation:

- TQ601 – Guide to Certification
- TQ602 – Certification Report
- TQ603 – Guide to Testing Services

### **LSEG Group Ticker Plant**

For further information regarding subscription to Turquoise market data from the Group Ticker Plant (GTP), please refer to the following documentation which can be found on the GTP website here '[GTP Documentation Library](#)':

- GTP001 – Product Guide
- GTP002 – Technical Guide
- GTP003 – Statistics Guide
- GTP004 – Parameters Guide
- GTP005 – Testing Service Guide
- GTP006 – External Source Guide
- GTP008 – Market Attributes Guide

## **1.4 Document History**

This document has been through the follow iterations:

<b>Issue</b>	<b>Date</b>	<b>Description</b>
R1 1.0	17 March 2010	First issue of this document published.
R1 1.1	27 April 2010	Second issue of this document published for Release 1 of the Turquoise test platform.
R2 1.0	24 May 2010	First issue of CDS release 2 document published.
R2 1.1	25 June 2010	Order Mass Cancel Request message length corrected.

R2.1 1.0	09 July 2010	<p>Added/updated on Liquidity Pools, Mass Cancellation, Security Identification, Amending an Order, Client Order ID, Trade Match ID and Application ID in Service Description section.</p> <p>Updated description of AppID and Client Order ID in Message Formats section.</p> <p>Updated description and offset of Order ID field Message Formats section.</p> <p>Removed TotalAffected Orders field in Order Mass Cancel Report.</p> <p>Changed data type of all quantity fields from Float to Int32.</p>
R2.1 1.2	14 July 2010	<p>Updated description to Order Types section.</p> <p>Updated description for ExpireDateTime, DisplayQty, TargetBook, CommonSymbol and Trade Liquidity Indicator.</p>
R2.1 1.3	9 August 2010	<p>Updated description for Order Ownership section.</p> <p>Updated description for Client Order ID section.</p> <p>Updated description of Pegged in Order Type section.</p> <p>Updated description of Amending an Order section.</p> <p>Participant name replaced with CompID.</p> <p>Updated description for Mass Cancellation on Disconnect section.</p> <p>Updated description for TransactTime in Timestamps and Dates section.</p> <p>Updated description for Order ID in Execution Report.</p> <p>Updated description for Limit Price field in Order Cancel/Replace Request.</p> <p>Updated description for TradeMatchID in Execution Report.</p> <p>Addition of Appendix A.</p>

R2.1 1.4	16 August 2010	<p>Added Client Order ID to Reject message.</p> <p>Added 9990 Reject code.</p> <p>Updated description for Message Rate Throttling to reflect use of Reject message.</p> <p>Addition of value to ResponseType in Missed Message Request Ack.</p> <p>Addition of Client Order ID to Reject Message.</p> <p>Updated description for Order Qty.</p> <p>Total order quantity. The intended Order Qty has to be inserted here, as this is a mandatory field.</p> <p>Updated description for TargetBook.</p> <p>Updated description of Transact Time.</p>
1.5	17 December 2010	<p>Order Qty updated for Order Cancel/Replace Request.</p> <p>Order throttling behaviour clarified.</p>
1.6	18 February 2011	<p>Updated description for Iceberg order type.</p> <p>Added value 0 for AppID in Business Reject message.</p> <p>Updated description for ExpireDateTime in New Order and Order Cancel/Replace Request messages.</p>
1.7	31 March 2011	<p>Updated document for Sponsored Access. Section 2.4.1 – Order Ownership.</p> <p>Section 2.4.11 – Redrafted.</p> <p>Created section 3.8 – Mass Cancellation on Disconnect of Member Firm for Sponsored Participant.</p> <p>Created section 3.9 – Mass Cancellation on Suspension of a Sponsored Participant.</p> <p>Updated sections 7.3.5, 7.3.6, 7.3.7, 7.4.5, 7.4.6, 7.4.7, 7.5.1.</p> <p>Section 7.3.9 added.</p> <p>Updated section –.1 - Appendix A with new error codes for Sponsored Access.</p>

1.8	24 May 2011	Updated section 2.4.4 to clarify restriction added in respect to amending orders which are hidden, visible and Iceberg orders.  Updated section 7.1.1 with System Status message.
1.9	6 July 2011	Addition of 2 new error messages in section 8.1 Error & Reject Messages.
2.0	31 October 2011	Support for clearing interoperability.
2.1	4 January 2012	Section 7.4.5 – Added Capacity field.  Appendix A - Added reject codes 121901 & 121903.
2.2	27 April 2012	Section 2.2 – Change to matching priority in <b>Turquoise Plato™</b> Order Book.  Section 2.3.1 – Updated details of minimum fill functionality and continuous only orders.  Section 2.4.4 – added attributes of an order that can be amended.  Added Section 4.4 – Dormant Account Policy.  Sections 7.4.1, 7.4.2 – New Exec Instruction enum added.  Appendix A – Added reject code 121908.
2.3	31 August 2012	Section 2.3.1 – Added details of Passive Only Order type.  Section 2.4.4 – Added Passive Only Order to amendable attributes.  Section 7.4.1, 7.4.2 – Added PassiveOnlyOrder field.  Section 7.4.5 – Added TradeLiquidityIndicator enum of 'C' for <b>Turquoise Plato Uncross™</b> , added PriceDifferential field.  Appendix A - Added reject codes 111906, 111908, 111912, 121201, 121202.
2.4	3 October 2012	Section 7.4.1 – Clarified PassiveOnlyOrder only support for Turquoise Integrated Order Book.  Section 7.4.5 – Removed references to 'Dark' Order types.
2.5	25 October 2012	Section 6 – Clarified customer processing logic for Data Types.
2.6	13 February 2013	Contact details updated.
2.7	20 September 2013	The following sections have been updated; 2.3.1; 2.3.2; 2.3.3; 2.4.2; 2.4.4; 2.4.6; 2.4.7; 2.4.14; 2.4.15; 2.8; 4.1; 6.0; 7.4.1; 7.4.2; 7.4.5; 7.4.6; 8.1.



2.8	24 October 2013	<p>The document has been updated to reflect:</p> <p>Call Market will <u>not</u> be available in Production, but will be available in CDS for testing purposes.</p> <p>GFA and GTT TIF definition has been updated to reflect the non-availability of the Call Market indicator in Production.</p> <p>Rebranding of the Turquoise random periodic uncrossing to <b>Turquoise Plato Uncross™</b>,</p>
3.0	20 October 2014	<p>The document has been updated to reflect changes required for <b>Turquoise Plato Block Discovery™</b>.</p> <p>Call Market will be available in Production.</p> <p>GFA and GTT TIF definition has been updated to reflect the availability of the Call Market indicator in Production.</p> <p>Addition of <b>Turquoise Plato Block Discovery™</b> messages. The following sections have been updated; 2.2; 2.3.1; 2.3.2; 2.4.6; 2.4.15; 7.1.2.2; 7.4.1 and 7.4.5.</p>
3.1	24 October 2014	<p>Changed ITCH to MITCH.</p>
3.2	08 April 2016	<p>This document has been updated to reflect changes for Millennium 8.6 upgrade.</p> <p><u>Change Highlights:</u></p> <ul style="list-style-type: none"> <li>• TradeMatchId – changing from base 62 to base 36.</li> <li>• Symbol field – changing from 6 to 8 characters. Message length changes for New Order, Order Cancel/Replace Request, Order Cancel Request, Order Mass Cancel Request, Execution Report messages.</li> <li>• New order type introduced <b>Turquoise Plato Uncross™</b> then Continuous.</li> <li>• Clarification around order amendment behaviour.</li> </ul> <p>The following sections have been changed: 2.3.1, 2.3.2, 2.4.1, 2.4.2, 2.4.3, 2.4.6, 2.4.10, 7.4.1, 7.4.2, 7.4.3, 7.4.4, 7.4.5, 8.1.</p> <p>See TQ700 – Release 8.6 Message Guidelines for full details on all changes.</p>

3.3	11 April 2016	<p>This following sections have been updated to aid clarity and/or reflect changes for the Millennium 9.0 upgrade:</p> <p>2.2 – Added a reference to the new ‘<b>Turquoise Plato™</b> Dark Lit Sweep’ functionality.</p> <p>2.3.1 – Clarified behaviour of the Pegged order type. Removed the Midpoint Pegged (Dark) order type as its behaviour is identical to the Pegged order type. Clarified Minimum Fill behaviour.</p> <p>2.3.2 – Clarified the behaviour of submitting GFA/GTT orders between a Call Market and <b>Turquoise Plato Uncross™</b>.</p> <p>2.4.2 – Clarified Mass Cancellation behaviour.</p> <p>2.4.3 – Clarified Amending an Order behaviour .</p> <p>2.4.9, 7–45 - Clarified that we use a G offset for encoding and decoding base 36 values.</p> <p>2.5 – Added ‘3’ (<b>Turquoise Plato™</b> Dark Lit Sweep) as a new TargetBook.</p> <p>3.5 – Clarified Connectivity Policy.</p> <p>3.6 – Clarified Message throttling behaviour.</p> <p>–.1 - Clarified connection behaviour when additional messages are sent prior to the exchange of Logons. Clarified secondary logon behaviour. Clarified rapid login/logout safety mechanism.</p> <p>4.2.2 – Clarified Heartbeats behaviour.</p> <p>5.2 – Clarified Missed Message Request behaviour.</p> <p>7.4.1 – Added a new e–um - ‘3 <b>Turquoise Plato™</b> Dark Lit Sweep’ in the Target Book field to supp’rt ‘Dark-Lit S’EEP’. Clarified Order Sub Type and Minimum Quantity Behaviour.</p> <p>7.4.2 – Replaced the TIF field with a Reserved Field and clarified Exec Instruction description. Clarified Minimum Quantity Behaviour. The system will now reject an Expire Date Time field amendment for any orders other than GTD or GTT.</p> <p>7.4.1, 7.4.2, 7.4.3 7.4.4 – Client Order ID is now mandatory.</p> <p>7.4.5 – Clarified Order Reject Code description. TargetBook field behaviour changed as a result of the new ‘<b>Turquoise Plato™</b> Dark Lit Sweep’ functionality. Replaced both the Container and PriceDifferential Fields with a Reserved Fields. Clarified Minimum Quantity Behaviour.</p> <p>7.5.1 – Clarified App ID behaviour.</p> <p>8.0 – Clarified Turquoise availability times.</p> <p>9.1 – Removed Appendix A ‘ Error and Reject messages’.</p>
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3.4	26 October 2016	<p>Updated <b>Turquoise</b> to <b>Turquoise Plato™</b> where appropriate for <b>Turquoise Plato™</b> Order Book and <b>Turquoise Plato™</b> Block Discovery services, and updated Turquoise to Turquoise where appropriate.</p> <p>This following sections have been updated to aid clarity and/or reflect changes for the Millennium 9.1 upgrade:</p> <p>5.2 – Clarified Missed Message Request behaviour.</p> <p>7.4.1 – Clarified Expire Date Time behaviour.</p> <p>7.4.1,7.4.2, 7.4.3, 7.4.4, 7.4.5 – Clarified that TargetBook field is UInt8 data type not Int8.</p> <p>7.4.2 – Clarified Expire Date/Time field behaviour.</p> <p>7.4.3 – Increased the length of the Reserved field from 9 to 10 bytes.</p>
3.5	07 April 2017	<p>The following sections have been amended to aid clarity and also to reflect the changes introduced in the Millennium 9.2 (MiFID II compliant) upgrade:</p> <p>2.3.4, 2.10.1, 7.4.1, 7.–5 - Clarified Order Capacities.</p> <p>2.–.1 - Clarified Order Cancellation by Market Operations behaviour.</p> <p>2.10.2 – Added details on Order Record Keeping Information.</p> <p>4.1 – Clarified Establishing a connection behaviour.</p> <p>5.3 – Clarified Terminating a session behaviour.</p> <p>7.4.1 - Extended the length of the New Order message by adding the following new fields: 'Client ID', 'Investment Decision Maker', 'Executing Trader', 'FXMiFIDFlags' and 'PartyRoleQualifiers'.</p> <p>7.4.5 – Reserved Field at offset 87 is now the 'Waiver Flags' field.</p>
3.5.1	27 June 2017	<p>The following sections have been amended to aid clarity:</p> <p>5.3 – Clarified Terminating the Recovery Connection behaviour</p> <p>7.4.5 – Clarified Counterparty behaviour</p>
3.5.2	14 July 2017	<p>The following sections have been amended to aid clarity:</p> <p>2.10.1, 7.4.1, 7.4.5 – Corrected enum values for the Capacity field</p>

3.5.3	22 August 2017	<p>The following sections have been amended to aid clarity:</p> <p>2.4.6 – Clarified Client Order ID behaviour</p> <p>Updated all references of <b>Turquoise®</b> to Turquoise.</p>
3.5.4	8 September 2017	<p>The following sections have been amended to aid clarity:</p> <p>2.–.5 - Reference to order being amended by Market Operations has been removed</p> <p>2.1–.2 - PartyRoleQualifier is removed for Client ID =1 (AGGR), 2 (PNAL), 0 (None) since it is not required</p>
3.5.5	13 September 2017	<p>The following sections have been amended:</p> <p>1.3 Document Series – reformat section &amp; add GTP references.</p> <p>2.2 Liquidity Pools – reformat and apply consistent use of the term <b>Orders</b>, and improve descriptions for <b>Turquoise Plato™</b> and <b>Turquoise Plato Block Discovery™</b>.</p> <p>2.3.1 Order Types – improve descriptions.</p> <p>2.3.3 Time In Force – improve descriptions.</p> <p>7.4.5 Execution Report – added a footnote to state that the Counterparty field value of EMCF represents EuroCCP.</p> <p>Throughout the document replaced the following terms (note that these updates are not marked with change bars):</p> <ul style="list-style-type: none"> <li>• “Lit Book” with “Turquoise Integrated Order Book”</li> <li>• “Call market” with “Start of the order submission interval”</li> <li>• “TQ Dark Book” with “<b>Turquoise Plato™</b> Order Book”</li> <li>• “Block Discovery” with “<b>Turquoise Plato Block Discovery™</b>”</li> <li>• “Dark Order” with “Hidden Order”</li> </ul>

3.5.5.A	25 September 2017	<p>Added changes related to the introduction of the <b>Turquoise Lit Auctions™</b> Order Book: -</p> <p>2.2 Liquidity Pool – Added <b>Turquoise Lit Auctions™</b> overview</p> <p>2.3.1 Order Types – Added order type applicability for <b>Turquoise Lit Auctions™</b></p> <p>2.4.3 Amending an Order - clarified that GTT orders / expiration time, and iceberg are not applicable for <b>Turquoise Lit Auctions™</b></p> <p>2.4.5 Execution Reports – added <b>Turquoise Lit Auctions™</b> GFA expiry event</p> <p>2.5 Security Identification – added target book 4 for <b>Turquoise Lit Auctions™</b></p> <p>2.9 Information for billing – added target book 4 for <b>Turquoise Lit Auctions™</b></p> <p>7.4.1 New Order – clarified that limit price is optional for a pegged order in <b>Turquoise Lit Auctions™</b> order book, that only order sub types 0 and 5 are accepted, that Exec Instruction is ignored, that passive only orders are not applicable, and added target book 4.</p> <p>7.4.2 Order Cancel/Replace Request - clarified that for the <b>Turquoise Lit Auctions™</b> order book, Exec Instruction is ignored, and added target book 4.</p> <p>7.4.3 Order Cancel Request – added target book 4 for <b>Turquoise Lit Auctions™</b></p> <p>7.4.4 Order Mass Cancel Request - added target book 4 for <b>Turquoise Lit Auctions™</b></p> <p>7.4.5 Execution Report – Add Trade Liquidity Indicator C applicability and target book 4 for <b>Turquoise Lit Auctions™</b></p>
3.5.6.A	01 December 2017	<p>The following sections have been amended to clarify that MES is ignored for <b>Turquoise Lit Auctions™</b> Order Book since it is not supported.</p> <p>2.3.1 Order Types</p> <p>7.4.1 New Order</p> <p>7.4.2. Order Cancel/Replace Request</p>

3.6	16 January 2018	<p>Minimum Quantity (MES) is introduced for <b>Turquoise Lit Auctions™</b> The following sections updated:</p> <p>2.3.1 Order Types</p> <p>7.4.1 New Order</p> <p>7.4.2 Order Cancel/Replace Request</p> <p>The reference to pre MIFDII order capacities in 'Capacity' field have been removed in the sections below:</p> <p>7.4.1 New Order</p> <p>7.4.5 Execution Report</p> <p>7.4.1 New Order- Added clarification that Passive Only Order field is ignored for <b>Turquoise Lit Auctions™</b> Order</p> <p>7.4.1 New Order – FXMiFIDFlags field is renamed to MiFIDFlags</p> <p>2.3.1 Order ty–es - Minimum Order Value for <b>Turquoise Lit Auctions™</b> added</p>
3.6.1	19 March 2018	<p>Minimum Order Value of EUR2,000 is removed for <b>Turquoise Lit Auctions™</b> Order Book. The below section was updated accordingly;</p> <p>2.3.1 Order Types</p>
3.6.2	13 July 2018	<p>7.4.5 Detailed description of CounterParty given with the change in value 'EMCF' to 'ECCP'.</p>
3.6.3	31 August 2018	<p>7.4.5 Addition of new CCP 'LCH SA'</p>
3.6.4	22 May 2019	<p>Rebrand of Turquoise Integrated Order Book to <b>Turquoise Lit™</b> Order Book.</p> <p>From this version onwards the changes will be highlighted in red instead of using the side bars.</p> <p>1.3 - Reference to TQ401 – MITCH Level-2 Market Data Specification was removed</p> <p>2.4.9, 7.4.5 – MITCH Trade Match ID/Order ID is replaced with GTP Trade ID/Order ID.</p> <p>Added reference to Partition 4 in Sections 7.3.5, 7.3.9, 7.4.5, 7.4.6, 7.4.7, 7.5.1</p>
3.7	24 October 2019	<p>7.4.5 'LastMarket' field is added</p> <p>7.4.5 New Reserved field is added</p> <p>7.4.5 – Type Of Trade = 2 for trades in <b>Turquoise Plato Lit Auctions™</b> Order Book.</p> <p>Various sections updated to reflect the rebrand of the <b>Turquoise Lit Auctions™</b> Order Book to the <b>Turquoise Plato Lit Auctions™</b> Order Book.</p>

3.8	18 November 2019	<p>2.2 (ii) – The reference to Price Collars was removed “the book can be uncrossed within the Reference Price Collar (PBBO)”.</p> <p>2.2 (ii), 2.3.3, 2.4.5 (xii) – the reference to GFA TIF for Turquoise Plato Lit Auctions™ book is removed</p>
3.9	15 January 2020	<p>9.1 Added the conversion logic from decimal number Native/GTP TVTIC to FIX TVTIC in Appendix A.</p> <p>Following sections have been amended with the introduction of the <b>Turquoise NYLON™</b> Cash Order Book:</p> <p>2.2 Liquidity pools</p> <p>2.3.1 Order Types</p> <p>2.4.3 Amending an Order</p> <p>2.4.5 Execution Reports</p> <p>2.5. Security Identification</p> <p>2.9 Information for Billing</p> <p>7.4.1 New Order</p> <p>7.4.2 Order Cancel/Replace Request</p> <p>7.4.3 Order Cancel Request</p> <p>7.4.4 Order Mass Cancel Request</p> <p>7.4.5 Execution Report</p>
3.10	18 March 2020	<p>2.2 Updated the description of Liquidity pools to reflect Closing Price matching during Trade At Last (TAL) matching phase in <b>Turquoise Plato™</b> Order Book.</p> <p>2.3.1 Limit, Market and Pegged Order type definition of <b>Turquoise Plato™</b> Order Book changed. GFA order enabling in <b>Turquoise Plato Lit Auctions™</b> Order Book.</p> <p>2.4.5 Expiry conditions of GFA orders in <b>Turquoise Plato Lit Auctions™</b> Order Book.</p> <p>7.4.5 Execution Report - Repurposed 1 byte of a 24-byte reserved field for a new field ‘Peg Price Type’ to indicate Trade At Last (TAL) executions in the <b>Turquoise Plato™</b> Order Book.</p> <p>7.4.1, 7.4.2, 7.4.3, 7.4.4 Added clarification to existing behaviour of Client Order ID, that only the first 16 bytes are sent to the CCP.</p>
3.10.1	10 July 2020	<p>Brexit related changes (subject to Brexit Go-live):</p> <p>1.1 – Clarified that the document is applicable to Turquoise UK and Turquoise Europe</p> <p>7.4.1, 7.4.2, 7.4.3, 7.4.4, 7.4.5 – Target Book – clarified which liquidity pool is used by TGHM members (TRQX, TRQM, TRQA) or TGHE members (TQEX, TQEM, TQEA)</p> <p>7.4.5 – LastMarket – Segment MICs for Turquoise Europe are added</p>

In subsequent issues where amendments have been made to the previous version, these changes will be highlighted in red.

## 1.5 Enquiries

Please contact either the Technical Account Management Team or your Technical Account Manager if you have any questions about the Millennium Exchange services outlined in this document: Client Technology Services (UK) can be contacted at:

- Telephone: +44 (0)20 7797 3939
- Email: londontam@lseg.com

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## 2.0 Service Description

### 2.1 System Architecture

The Native Trading Gateway consists of two channels. A Real-Time Channel which provides the main order management functionality and a Recovery Channel that allows Participants to retrieve missed messages due to disconnection from the Real Time Channel.

### 2.2 Liquidity Pools

Turquoise supports the following liquidity pools for Participants to execute their orders:

- Turquoise Lit™** Order Book – The Turquoise **Turquoise Lit™** Order Book will execute orders in a continuous price-time method with large in scale hidden orders getting the lowest priority. Participants have the option to specifying the minimum fill size per order for non-persistent orders only. The Turquoise **Turquoise Lit™** Order Book is also referred to as the 'Lit' Order Book.
- Turquoise Plato Lit Auctions™** Order Book – The **Turquoise Plato Lit Auctions™** Order Book will execute orders in frequent transparent auctions with a volume maximising price algorithm. Participants can only use DAY or GFA time in force, either as simple limit orders or as orders pegged to the **Primary market Midpoint Price (PMP)** (with or without a limit price). **Where a pegged Order has a Limit Price which is not marketable at the PMP, it will rest passively at its Limit Price and will be executable.** There is no support for GTT/GTD orders, market orders or Minimum Quantity (MAQ/MES). Each auction lasts up to 100ms (made up from a 50ms fixed call period plus a 50ms randomised uncross period). Auctions are triggered whenever a crossed book occurs where the PBBO is well formed. Once the Auction price has been determined, Orders in the **Turquoise Plato Lit Auctions™** Order Book will be matched and prioritised on a Member then Time basis.
- Turquoise NYLON™** Cash Order Book – The **Turquoise NYLON™** Cash Order Book will execute Large in Scale (LIS) orders in scheduled auction events during the trading day. Participants can only use DAY or GFA time in force either as limit or market orders pegged to the PBBO midpoint (with or without a limit price). The orders are categorized into Qualified Orders (QO) and Non-Qualified Orders (NQO) with QO given higher priority in the book. Within the QO category and NQO category the orders are prioritized using 'Time'. The auction algorithm will attempt to match all QO first by considering contra-side QO and NQO honouring the MAQ of each order. If all QO cannot match, it will exclude all QO from that auction event and only consider NQO for uncrossing. A hill climber algorithm is used to find potential executions and all executions take place at the PBBO mid-point price.
- Turquoise Plato™** Order Book – The **Turquoise Plato™** Order Book accepts only hidden orders. **Matching can take place at Primary market Midpoint Price (PMP) during the regular trading hours of the Primary Market and during the Trade at Last (TAL) matching phase, at the Primary market Closing Price (PCP), after the Closing Price is disseminated by the Primary Market.** Orders will execute on entry and during **Turquoise Plato Uncross™** events which occur when there is a **Turquoise Plato Block Discovery™** match or at randomized time intervals, midpoint changes or when a firm amends order price, order size or MES. Participants have the option of specifying a minimum fill size per order. Orders



in the **Turquoise Plato™** Order Book will be matched and prioritised on a Size<sup>1</sup> then Time basis starting with the largest order on the buy side of the book. Optional Member Priority matching is available upon request.

- (v) **Turquoise Plato Block Discovery™** – **Turquoise Plato Block Discovery™** will perform the matching of BIs and eligible BDNs<sup>2</sup> periodically. BIs and BDNs in **Turquoise Plato Block Discovery™** will be matched and prioritised on a Size then Time basis starting with the largest BI/BDN on the buy side of the book. Optional Member Priority matching is available upon request. Upon identifying a match, **Turquoise Plato Block Discovery™** will match BIs and eligible BDNs in its book and send OSRs to relevant Participants. The Participants should then respond by submitting Orders to the **Turquoise Plato™** Order Book, to match in the **Turquoise Plato Uncross™**. **Matching will take place at Primary market Midpoint Price (PMP) during the regular trading hours of the Primary Market and during the Trade at Last (TAL) matching phase, at the Primary market Closing Price (PCP), after the Closing Price is disseminated by the Primary Market.**

Participants can submit Orders to the **Turquoise Lit™**, **Turquoise Plato™** or **Turquoise Plato Lit Auctions™** Order Book by explicitly specifying the order book in the TargetBook field. They can target both **Turquoise Lit™** and **Turquoise Plato™** Order Books by specifying '3' (**Turquoise Plato™** Dark Lit Sweep) in the TargetBook field. For more information about the **Turquoise Plato™** Dark Lit Sweep, please refer to the [Turquoise Trading Service Description](#) document.

## 2.3 Order Handling

### 2.3.1 Order Types

Participants may submit the order types outlined below via the [New Order](#) message.

Order Type	Description
Market	<p>Market orders will execute at the best available prices in the <b>Turquoise Lit™</b> Order Book and any remainder will be cancelled.</p> <p><b>Market orders in the Turquoise Plato™ Order Book during regular trading hours of the Primary Market, will execute at the Primary market Midpoint Price (PMP) or during the Trade at Last (TAL) matching phase will execute at the Primary market Closing Price (PCP), after the PCP is disseminated by the Primary Market.</b> Hidden or Iceberg Market orders are not permitted on the <b>Turquoise Lit™</b> Order Book.</p> <p>Market Orders are only permitted in the <b>Turquoise Plato Lit Auctions™</b> Order Book when Order Sub Type of “Pegged” is selected. Market Orders are not permitted in the <b>Turquoise Plato Lit Auctions™</b> when any other Order Sub Type is selected.</p> <p>Market orders in the <b>Turquoise NYLON™</b> Cash Order Book will execute at the PBBO midpoint.</p>

<sup>1</sup> Size is defined as the Order's original quantity. When the original order quantity is amended up, the Order's size priority may increase and when amended down, the Order's priority may decrease (depending upon other Orders resting in the Order book at the time).

<sup>2</sup> An eligible BDN has a remaining value equal to or greater than 25% of LIS.

Limit	<p>Limit orders will execute at or better than the specified price in the <b>Turquoise Lit™</b> Order Book.</p> <p>Limit orders in the <b>Turquoise Plato™</b> Order Book during regular trading hours of the Primary market, will execute at the Primary market Midpoint Price (PMP) or during the Trade at Last (TAL) matching phase will execute at the Primary market Closing Price (PCP), after the PCP is disseminated by the Primary Market, when the PMP or PCP is equal to or better than the Order's limit price.</p> <p>Limit orders will execute at or better than the specified price in the <b>Turquoise Plato Lit Auctions™</b> Order book.</p> <p>Limit orders will execute in the <b>Turquoise NYLON™</b> Cash Order Book at the PBBO midpoint only if the midpoint is equal to or better than the limit price. Visible and iceberg limit orders are not permitted in the <b>Turquoise NYLON™</b> Cash Order Book.</p>
Iceberg	<p>An order in the <b>Turquoise Lit™</b> Order Book that contains a disclosed quantity which will be the maximum quantity displayed on the order book and smaller than the total order quantity. Once the displayed quantity is reduced to zero, the display quantity can either be refreshed as an explicit quantity or, where enabled, Participants can elect to have their refreshed peak size randomised for their Order. Details of the randomisation range can be found in the <a href="#">Turquoise Trading Service Description</a>. Once the remaining size falls below the refresh size, the full remaining size will be used as the disclosed quantity. Iceberg orders cannot be un-priced and must have a minimum order value of EUR10,000.</p> <p>Iceberg orders are not permitted in the <b>Turquoise NYLON™</b> Cash Order Book.</p>
Hidden	<p>An order in the <b>Turquoise Lit™</b> Order Book that meets MiFID large in scale requirements that is not displayed in the order book. These orders will receive the lowest priority within a price point when executing in the <b>Turquoise Lit™</b> Order Book.</p> <p>All orders in the <b>Turquoise Plato™</b> Order Book and <b>Turquoise Plato Lit Auctions™</b> Order Book are hidden.</p>

Pegged

All orders in the **Turquoise Plato™** Order Book are pegged to the Mid-point of the **Primary market Midpoint Price (PMP)** during regular trading hours of the **Primary Market** or during the **Trade at Last (TAL)** matching phase to the **Primary Market Closing Price (PCP)**, after the PCP is disseminated by the **Primary Market**.. These Hidden Orders may be submitted as below:

OrderType	OrderSubType	Meaning
1 (Market)	0 (Order)	Pegged Market Order
1 (Market)	5 (Pegged)	
2 (Limit)	0 (Order)	Pegged Limit Order
2 (Limit)	5 (Pegged)	

Pegged orders are not applicable to the **Turquoise Lit™** Order Book.

All orders in the **Turquoise NYLON™** Cash Order Book are pegged to the Mid-point of the Primary Best Bid and Offer. These Hidden Orders must be submitted as below:

OrderType	OrderSubType	Meaning
1 (Market)	0 (Order)	Pegged Market Order
2 (Limit)	0 (Order)	Pegged Limit Order

'Pegged' Order Sub Type is not permitted in the **Turquoise NYLON™** Cash Order Book.

Orders in the **Turquoise Plato Lit Auctions™** Order Book may optionally be pegged to the midpoint of the Primary Best Bid and Offer. These Orders may be submitted as below:

OrderType	OrderSubType	Meaning
1 (Market)	5 (Pegged)	Pegged Market Order
2 (Limit)	5 (Pegged)	Pegged Limit Order*

\* GFA Orders will only be accepted if upon entry into the order book, the auction generates an Indicative Auction Price and Quantity greater than 0 (zero) or when there is an auction in progress which has an Indicative Auction Price and Quantity greater than 0 (zero), else the GFA Order will be expired immediately.

Minimum Fill	<p>In the <b>Turquoise Lit™</b> Order Book, MAQ (Minimum Acceptable Quantity) will be used. This means that a firm can execute against multiple counterparties if the order's MAQ requirement is satisfied. For the <b>Turquoise Lit™</b> Order Book this quantity is valid for non-persistent orders only.</p> <p>In the <b>Turquoise Plato™</b> Order Book, MES (Minimum Execution Size) will be used. This means that a firm will only execute against another order if that order alone meets the order's MES requirement. For the <b>Turquoise Plato™</b> Order Book this quantity is valid for both persistent and non-persistent orders.</p> <p>Firms can also specify whether they want the Minimum Fill to apply for the first execution only or to persist for the lifetime of the order. For further details, please refer to sections 9.2.1 and 9.6 of the <a href="#">Turquoise Trading Service Description</a>.</p> <p>Where MAQ/MES is greater than remaining Order Quantity, the MAQ/MES will be reduced to equal the remaining Order Quantity.</p> <p>A <b>Turquoise Plato™</b> Dark Lit Sweep Order which has a non-zero Minimum Fill value will therefore apply a MES to the <b>Turquoise Plato™</b> Order Book and a MAQ to the <b>Turquoise Lit™</b> Order Book (subject to persistence preference).</p> <p>In the <b>Turquoise Plato Lit Auctions™</b> Order Book, MES (Minimum Execution Size) will be used. A firm will only execute against another order if that order alone meets the order's MES requirement.</p> <p>In the <b>Turquoise NYLON™</b> Cash Order Book, MAQ (Minimum Acceptable Quantity) will be used. This means that a firm can execute against multiple counterparties if the order's MAQ requirement is satisfied.</p>
<b>Turquoise Plato Uncross™</b> Only	<p>These orders will only execute during a <b>Turquoise Plato Uncross™</b> in the <b>Turquoise Plato™</b> Order Book.</p> <p>Please see section <a href="#">2.3.2</a> for details of these orders' behaviour around the start of the Order Submission Interval.</p> <p>This instruction will be ignored for the <b>Turquoise Lit™</b> Order Book, <b>Turquoise Plato Lit Auctions™</b> Order Book and <b>Turquoise NYLON™</b> Cash Order Book.</p>
Continuous Only	<p>These orders will only execute during continuous trading and will not match during <b>Turquoise Plato Uncross™</b> events.</p> <p>This instruction will be ignored for the <b>Turquoise Lit™</b> Order Book, <b>Turquoise Plato Lit Auctions™</b> Order Book and <b>Turquoise NYLON™</b> Cash Order Book.</p>
<b>Continuous &amp; Turquoise Plato Uncross™</b>	<p>These orders will execute both in continuous matching and in the <b>Turquoise Plato Uncross™</b> in the <b>Turquoise Plato™</b> Order Book.</p> <p>Please see section <a href="#">2.3.2</a> for details of these orders' behaviour around the start of the Order Submission Interval.</p> <p>This instruction will be ignored for the <b>Turquoise Lit™</b> Order Book, <b>Turquoise Plato Lit Auctions™</b> Order Book and <b>Turquoise NYLON™</b> Cash Order Book.</p>

<p><b>Turquoise Plato Uncross™</b> then Continuous.</p>	<p>These orders will execute first in the nearest <b>Turquoise Plato Uncross™</b> and then in continuous trading in the <b>Turquoise Plato™</b> Order Book.</p> <p>All the <b>Turquoise Plato Uncross™</b> then Continuous orders will be parked until the next immediate <b>Turquoise Plato Uncross™</b> which it will participate in. Once it participates in the immediate <b>Turquoise Plato Uncross™</b>, it will then behave similar to a Continuous and <b>Turquoise Plato Uncross™</b> order.</p> <p>This instruction will be ignored for the <b>Turquoise Lit™</b> Order Book, <b>Turquoise Plato Lit Auctions™</b> Order Book and <b>Turquoise NYLON™</b> Cash Order Book.</p>
<p>Passive Only Order</p>	<p>Only applicable to persistent limit orders in the <b>Turquoise Lit™</b> Order Book.</p> <p>These orders will not match with visible orders upon entry, and will expire if they will aggress.</p> <p>These orders <u>can</u> match on entry against large in scale hidden orders sat within the BBO.</p>
<p>Block Indication (BI)</p>	<p>BIs will only match in <b>Turquoise Plato Block Discovery™</b>. Participants who submit BIs have to submit a corresponding firm QBO the <b>Turquoise Plato™</b> Order Book within a predefined time if their BI matches in <b>Turquoise Plato Block Discovery™</b>. BIs will be expired once successfully matched in <b>Turquoise Plato Block Discovery™</b>.</p>
<p>Order + Block Discovery Notification (BDN)</p>	<p>Matches in both the <b>Turquoise Plato™</b> Order Book (Order) and in <b>Turquoise Plato Block Discovery™</b> (BDN).</p>
<p>Qualifying Block Order (QBO)</p>	<p>Qualifying Block Orders are OSR Responses; i.e. they are orders with Order Sub Type BDN that contain a valid ClOrdLinkId, and falls under one of the following criteria:</p> <ul style="list-style-type: none"> <li>• Matching Instruction “Continuous and <b>Turquoise Plato Uncross™</b> and TIF GFA</li> <li>• Matching Instruction “<b>Turquoise Plato Uncross™</b> Only” and TIF GFA</li> </ul> <p>Please see section <a href="#">2.3.2</a> for details of these orders’ behavior around the start of the Order Submission Interval.</p>
<p>Non-Qualifying Orders (NQO)</p>	<p>Within the <b>Turquoise NYLON™</b> Cash Order Book at the time of every auction event, any order that is not deemed to be a Qualifying Order, is deemed to be a Non-Qualifying Order.</p>
<p>Qualifying Orders (QO)</p>	<p>Within the <b>Turquoise NYLON™</b> Cash Order Book at the time of every auction event, any order that is:</p> <ol style="list-style-type: none"> <li>a) A FoK Order (i.e. Has an Order Quantity = Order’s Minimum Quantity ‘MAQ’);</li> </ol> <p style="text-align: center;">AND</p> <ol style="list-style-type: none"> <li>b) has an Order Value equal to or greater than 3 times the Large In Scale (LIS) Value for the Financial Instrument;</li> </ol> <p>is deemed to be a Qualifying Order.</p>

### 2.3.2 Behaviour of an Order’s TIF and Execution Instruction around the start of the Order Submission Interval

At the start of the Order Submission Interval, a Call Market is sent by Turquoise to indicate to Participants that there is an impending **Turquoise Plato Uncross™** in the **Turquoise Plato™** Order Book. Orders with the following Execution Instructions and TIF behave differently if submitted after a **Turquoise Plato Uncross™** but

before the next start of an Order Submission Interval and when submitted after the start of an Order Submission Interval and before the next **Turquoise Plato Uncross™**:

Order Details (Combination of TIF and Execution Instructions)	Behaviour if the Order is submitted between a Turquoise Plato Uncross™ and the start of the Order Submission Interval	Behaviour if the Order is submitted between the start of the Order Submission Interval and its Turquoise Plato Uncross™
GFA – Continuous and <b>Turquoise Plato Uncross™</b>	<p>Acts as IOC Order in Continuous Trading with any remainder expired.</p> <p>Orders are not amendable and cannot be cancelled.</p>	<p>The Order will not participate during Continuous trading and will wait to take part in the next immediate <b>Turquoise Plato Uncross™</b>.</p> <p>Any remainder will be expired after the <b>Turquoise Plato Uncross™</b>.</p> <p>Orders are not amendable and cannot be cancelled.</p>
GFA – <b>Turquoise Plato Uncross™</b> Only	<p>The Order will expire immediately.</p> <p>Orders are not amendable and cannot be cancelled.</p>	<p>The Order will take part in the next immediate <b>Turquoise Plato Uncross™</b>.</p> <p>Any remainder will be expired after the <b>Turquoise Plato Uncross™</b>.</p> <p>Orders are not amendable and cannot be cancelled.</p>
GFA - <b>Turquoise Plato Uncross™</b> then Continuous	<p>The Order will not participate during Continuous trading and will wait to take part in the next immediate <b>Turquoise Plato Uncross™</b>.</p> <p>Any remainder will be expired after the <b>Turquoise Plato Uncross™</b>.</p> <p>Orders are amendable and can be cancelled.</p>	
GTT – <b>Turquoise Plato Uncross™</b> Only	<p>The Order will take part in the next immediate <b>Turquoise Plato Uncross™</b>.</p> <p>If the order's expiry time elapses before participation in any <b>Turquoise Plato Uncross™</b> it will be expired immediately.</p> <p>Any remainder will persist, participating in subsequent <b>Turquoise Plato Uncross™</b> events until the Order's expiry time is reached.</p> <p>Orders are amendable and can be cancelled.</p>	

### 2.3.3 Time in Force (TIF)

The server recognizes the following TIFs.

Time in Force	Description
Day	An order that will expire at the end of the day.
Immediate or Cancel (IOC)	<p><b>Only applicable to Turquoise Lit™ Order Book and Turquoise Plato™ Order Books.</b></p> <p>An order that will be executed on receipt and the remainder, if any, immediately cancelled.</p> <p><b>Not applicable to BIs or Order+BDN's.</b></p>

Fill or Kill (FOK)	<p><b>Only applicable to Turquoise Lit™ Order Book and Turquoise Plato™ Order Books.</b></p> <p>An order that will be fully executed on receipt, or immediately cancelled.</p> <p><b>Not applicable to BIs or Order+BDN's.</b></p>
Good Till Time (GTT)	<p><b>Only applicable to Turquoise Lit™ Order Book and Turquoise Plato™ Order Books.</b></p> <p>An order that will expire at a specified time during the current day, or at the end of day, whichever occurs earliest. GTT orders submitted with expire time which has an expiry date in the future will be rejected. I.e. if a GTT order is sent with an already elapsed expiry time but with a future date in the date component, the order will be rejected. The same behaviour is applied when an expiry time is specified which is outside current day's trading hours.</p> <p>Please see section <a href="#">2.3.2</a> for details of <b>Turquoise Plato Uncross™</b> GTT Orders' behavior around the start of the Order Submission Interval.</p>
Good Till Cancelled (GTC)	<p><b>No longer supported by Turquoise.</b></p> <p>An order that will expire at the end of the day.</p>
Good For Auction (GFA)	<p>Only applicable to the <b>Turquoise NYLON™</b> Cash Order Book and <b>Turquoise Plato™</b> Order Books.</p> <p><b><u>Turquoise NYLON™ Cash Order Book:</u></b></p> <p>All GFA orders are good for a single <b>Turquoise NYLON™</b> Cash Order Book event.</p> <p><b><u>Turquoise Plato™ Order Book:</u></b></p> <p>All GFA orders only take part in <b>Turquoise Plato Uncross™</b> events. They are expired either after attempting to match during the <b>Turquoise Plato Uncross™</b> it is scheduled to participate in or at the time of the scheduled <b>Turquoise Plato Uncross™</b> if the <b>Turquoise Plato Uncross™</b> fails to happen due to, say, a WFMC failure.</p> <p>Please see section <a href="#">2.3.2</a> for details of these Orders' behaviour around the start of the Order Submission Interval.</p> <p><b>Not applicable to BIs.</b></p> <p><b><u>Turquoise Plato Lit Auctions™ Order Book:</u></b>  GFA Orders will only be accepted if upon aggression the auction generates an Indicative Auction Price and Quantity greater than 0 (zero) or when there is an auction in progress which has an Indicative Auction Price and Quantity greater than 0 (zero), else the GFA Order will be expired immediately.</p>

### 2.3.4 Order Capacity

Participants are responsible for indicating the capacity an order is submitted under. Further details can be found in section [2.10.1](#).

## 2.4 Order Management

### 2.4.1 Order Ownership

All orders will be associated with the CompID under which the order was entered. No capacity will be provided to enter orders on behalf of another trader.

The remainder of a live order may be cancelled via the [Order Cancel Request](#) message. The server will respond with an [Execution Report](#) or [Order Cancel Reject](#) to confirm or reject the cancellation request respectively.

The Participant should identify the order being cancelled by either its Original Client Order ID or Order ID. If the Cancel Request contains values for both Original Client Order ID and Order ID, the server will only process the Order ID if the request is accepted.

### 2.4.2 Mass Cancellation

A Participant may mass cancel live orders via the [Order Mass Cancel Request](#). The server will respond with an [Order Mass Cancel Report](#) to indicate via the MassCancelResponse field whether the request is successful or not. Participants may receive more than one Mass Cancel Report having different AppIDs to distinguish the order cancellations carried out for each partition.

If the cancellation request is accepted, the server will then immediately transmit Execution Reports for each order that is cancelled. The Client Order ID of all such messages will be the Client Order ID of the [Order Mass Cancel Request](#).

If the mass cancel request is rejected, the reason will be specified in the MassCancelRejectReason field of the [Order Mass Cancel Report](#).

Participants may use the [Order Mass Cancel Request](#) to mass cancel all orders or only those for a particular instrument or segment. A mass cancel request may apply to all the orders of the trading firm or only to those of that particular CompID.

A mass cancel request sent in via the Native Trading Gateway or the FIX Gateway may cancel orders submitted through both gateways. In such a case, the execution reports for the order cancellation will be sent to the gateway through which each order was originally submitted.

In a scenario where the Order Mass Cancel Request message is submitted by a different user from the user who submitted the original orders, the Execution Reports will be sent to the submitted user whereas the Order Mass Cancel Report will be sent to the cancelling user.

### 2.4.3 Amending an Order

The following attributes of a live order may be amended via the [Order Cancel/Replace Request](#) message:

- (i) Order quantity
- (ii) Displayed quantity\*
- (iii) Price
- (iv) Expiration time (GTT orders, not valid for the **Turquoise Plato Lit Auctions™** Order Book and the **Turquoise NYLON™** Cash Order Book)
- (v) Account
- (vi) Minimum Execution Size (MES) (valid for the **Turquoise Plato™** Order Book)
- (vii) Minimum Acceptable Quantity (MAQ) (valid for the **Turquoise NYLON™** Cash Order Book)



- (viii) Execution Instruction (valid for **Turquoise Plato™** Order Book)
- (ix) Passive Only Order

\* The following restrictions apply. Participants may not:

- (i) amend a hidden order to become an Iceberg order (By specifying a Display Qty >0 on amend when Display Qty = 0 on original Order Submission to **Turquoise Plato™** Order Book, **Turquoise Lit™** Order Book, **Turquoise NYLON™** Cash Order Book, or **Turquoise Plato Lit Auctions™** Order Book)
- (ii) amend an Iceberg order to become a hidden order (By specifying a Display Qty = 0 on amend when Display Qty > 0 and <Order Qty on original Order Submission to **Turquoise Lit™** Order Book)
- (iii) amend a visible order to a hidden order (By specifying a Display Qty = 0 on amend when Display Qty = Order Qty on original Order Submission to **Turquoise Lit™** Order Book)
- (iv) amend a hidden order to a visible order (By specifying a Display Qty = Order Qty on amend when Display Qty =0 on original Order Submission to **Turquoise Lit™** Order Book)

Participants may:

- (i) amend a fully visible order to become a fixed peak Iceberg order (By specifying a Display Qty < Order Qty and on amend when Display Qty = Order Qty on original Order Submission to **Turquoise Lit™** Order Book)
- (ii) Amend an Iceberg order to become a visible order (By specifying a Display Qty = Order Qty on amend when Display Qty < Order Qty on original Order Submission to **Turquoise Lit™** Order Book)

Whilst the field being amended will have to be filled with the new value, Participants must fill in the current values of all the fields that are not being amended as well.

For details on which order attributes can be amended in the **Turquoise Lit™**, **Turquoise Plato Lit Auctions™** and the **Turquoise Plato™** Order Books, please refer to section 10.3 of the [Turquoise Trading Service Description](#). For details on which indication attributes can be amended in **Turquoise Plato Block Discovery™**, please refer to section 10.3 of the [Turquoise Plato Block Discovery™ Trading Service Description](#).

The server will respond with an [Execution Report](#) or [Order Cancel Reject](#) to confirm or reject the amendment request respectively.

When an Order amended for price, re-aggresses the order book where it gets fully filled, the sender will only receive an [Execution Report](#) for the trade and not acknowledging the amendment.

An order's Passive Only Order value will not be re-evaluated unless the order's price is amended. It may also expire due to amended order falling into a worse price point or being in danger of matching with a contra visible price point.

If a Participant tries to amend the Order Quantity and/or Display Quantity, and if the request cannot be completely fulfilled due to edge conditions, the server will do the amendment to the maximum possible extent. Here the system will not allow order quantity to be amended below filled quantity, nor display quantity to be amended below leaves quantity. In order to allow order fills that are yet to be notified to the Participant, the system will automatically adjust the quantities where necessary.

For example: If an order is sent with order quantity and display quantity as 800 and then tries to amend the display quantity to 500 two scenarios can happen:

- (i) The Participant may have already received a partial fill for 400 and tries to amend the leaves quantity via the display quantity which is not permitted.
- (ii) While the amend request is on the wire, there may be a partial fill of 400 which is not known to the Participant at the point of generating the amend request; at this case, rejecting the amend request is not ideal. The server cannot differentiate the two scenarios hence it has implemented the fairer option which is to execute the amend request to the maximum possible extent.

#### 2.4.4 Order Status

The Order Status field is used to convey the current state of an order. If an order simultaneously exists in more than one order state, the value with highest precedence is reported as the Order Status. The relevant order statuses are given below from the highest to lowest precedence. When a cancellation or amendment to a "Filled" or "Cancelled" or "Expired" order is rejected, order status is given as "Rejected" in the Order Cancel Reject instead of the actual status of the order. For example: When an amend request to change the side of an order is rejected, the order status is given as "Rejected" in the Order Cancel Reject.

Value	Meaning
2	Filled
4	Cancelled
6	Expired
1	Partially Filled
0	New
8	Rejected

#### 2.4.5 Execution Reports

The Execution Report message is used to communicate many different events to Participants. The events are differentiated by the value in the ExecType field as outlined below.

Exec Type	Usage	Ord Status
0	<p>Order Accepted</p> <p>Indicates that a new order has been accepted.</p> <p>This message will also be sent unsolicited if an order was submitted by Market Operations on behalf of the Participant.</p>	0

8	<p>Order Rejected</p> <p>Indicates that an order has been rejected. The reason for the rejection is specified in the field Order Reject Code.</p>	8
F	<p>Order Executed</p> <p>Indicates that an order has been partially or fully filled. The execution details (e.g. price and quantity) are specified.</p>	1, 2

C	<p>Order Expired</p> <p>Indicates that an order has expired in terms of its time qualifier or due to one of the following events:</p> <ul style="list-style-type: none"> <li>(i) When orders are expired upon entering the order book when the number of orders in the order book is at the maximum allowed level.</li> <li>(ii) When the remaining orders are expired at market close.</li> <li>(iii) When orders are expired based on the auto cancellation on disconnect/log out feature.</li> <li>(iv) When the relevant order is configured with the self execution prevention specifying CIO or CRO.</li> <li>(v) When a <b>Turquoise Plato Uncross™</b> Only GFA Order has not been fully executed in the <b>Turquoise Plato Uncross™</b> to which it was expected to participate.</li> <li>(vi) When a Continuous and <b>Turquoise Plato Uncross™</b> GFA Order has not been fully executed in the <b>Turquoise Plato Uncross™</b> to which it was expected to participate.</li> <li>(vii) When a GTT Order's expiry time elapses before it has been fully executed.</li> <li>(viii) When a Continuous and <b>Turquoise Plato Uncross™</b> GFA Order is submitted between a <b>Turquoise Plato Uncross™</b> and the start of an Order Submission Interval, it will act as an IOC, with any remaining quantity being expired.</li> <li>(ix) When BIs are successfully matched by <b>Turquoise Plato Block Discovery™</b>.</li> <li>(x) When a <b>Turquoise Plato Uncross™</b> GFA Order is submitted between a <b>Turquoise Plato Uncross™</b> and the start of an Order Submission Interval, it will be immediately expired.</li> <li>(xi) When a <b>Turquoise Plato Uncross™</b> then Continuous GFA Order participates in a <b>Turquoise Plato Uncross™</b>.</li> <li>(xii) When a <b>Turquoise Plato Lit Auctions™</b> Order Book GFA Order aggresses and results in an Indicative Auction Price and Quantity of 0 (zero).</li> <li>(xiii) When a <b>Turquoise Plato Lit Auctions™</b> Order Book GFA Order has not been fully executed in the auction.</li> <li>(xiv) When a <b>Turquoise NYLON™</b> Cash Order Book GFA Order has not been fully executed in the auction.</li> <li>(xv) When a <b>Turquoise NYLON™</b> Cash Order Book DAY Order has not been fully executed in the last scheduled auction that trading day.</li> </ul>	6
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4	<p>Order Cancelled</p> <p>Indicates that an <a href="#">Order Cancel Request</a> has been accepted and successfully processed.</p> <p>This message will also be sent unsolicited if the order was cancelled by Market Operations. If an order is cancelled by Market Operations it will not be assigned a new Client Order ID.</p>	4
5	<p>Order Cancel/Replaced</p> <p>Indicates that an <a href="#">Order Cancel/Replace Request</a> has been accepted and successfully processed.</p>	0, 1
D	<p><b>Order Cancel/Replace by Market Operations</b></p> <p>This is sent when:</p> <ul style="list-style-type: none"> <li>• Market Operations cancel a trade that previously partially filled the order; It will not include an OrigCOrdID (41) and will not be assigned a new Client Order ID.</li> <li>• When there is an iceberg order replenishment, which happens after an aggressing order has fully exhausted first the visible, and then any hidden quantities of passive iceberg orders.</li> </ul>	0, 1
H	<p><b>Trade Cancel</b></p> <p>Indicates that an execution has been cancelled by the Market Operations. An <a href="#">Execution Report</a> Ref ID to identify the execution being cancelled will be included.</p>	0, 1, 4, 6
L	<p><b>Triggered</b></p> <p>Stamped on OSRs sent to Participant indicating that their BI has matched in <b>Turquoise Plato Block Discovery™</b> and a corresponding firm QBO should be submitted to the <b>Turquoise Plato™</b> Order Book.</p>	2

#### 2.4.6 Client Order ID

Participants should use unique Client Order IDs per business day. The server does not validate each Client Order ID for uniqueness.

Clients must specify the Client Order ID when submitting a [New Order](#), [Order Cancel Request](#) or [Order Cancel/Replace Request](#).

The system will accept a maximum length of 20 characters. If the ID is longer than 20 characters then it will be rejected. This is valid for the following.

- New Order Single – Client Order ID
- Order Cancel Request – Original Client Order ID

If a client has mistakenly submitted more than one order with the same client order id within a trading day, they will only be able to cancel or amend the most recent order.

#### 2.4.7 Order ID

The server will use the OrderID field of the [Execution Report](#) to affix the order identification numbers of the trading engine. Order IDs will be unique across trading days.

Unlike Client Order ID which requires a chaining through cancel/replace requests and cancel requests, the OrderID of an order will remain constant throughout its life.

Participants have the option of specifying the OrderID (instead of the Original Client Order ID) when submitting an [Order Cancel Request](#) or [Order Cancel/Replace Request](#). The Common Symbol and Target Book should always be specified along with either option.

Using the OrderID when amending or cancelling an order will be faster, since the system maintains orders by the Order ID.

#### **2.4.8 Execution ID**

The server will use the Execution ID field to affix a unique identifier for each [Execution Report](#). Execution IDs will be unique across trading days.

#### **2.4.9 Trade Match ID**

Trade Match ID in the Native Trading gateway matches exactly with the Trade ID field on the GTP Market data feed which is in binary. It also matches the TradeMatchID (tag 880) on FIX Trading & Drop Copy execution reports as well as the TradeID (tag 1003) in the Post Trade gateway. However this is in base 36 (G offset) and can be converted to an 8 byte integer for comparison.

The Trade Match ID can be converted to the ExecID generated by the CCP gateway by firstly converting it to binary using base 36 (G offset) and then adding the side indicator (B/S prefix). For cancelled trades, a prefix of 1 should be added.

#### **2.4.10 Application ID**

The trading system consists of a series of parallel partitions each of which services an exclusive set of instruments. Each application message transmitted by the server will include the identity of the partition that generated the message. The number of partitions could increase/ decrease in the future.

#### **2.4.12 Trade Cancellations**

Market supervision may cancel any (automatically executed) trade. The server will transmit to the relevant Participants to notify them of a trade cancellation.

If a trade is cancelled for a partially filled order, the cancelled quantity of the trade is not reinstated. The Participant will receive two notifications in such a scenario; one for the trade cancel and another for the order restatement/cancellation.

#### **2.4.13 Public Order ID**

This is a new order ID that will be maintained by the matching engine, and will be unique for each replenishment of a particular iceberg order.

For a single iceberg order, the Order ID will be the same, but a unique new Public Order ID will be generated for each replenishment.

#### 2.4.14 Unsolicited Order Updates

The [Execution Report](#) message is used to notify the Participant if an order is executed or expired. The Client Order ID of the message will be that of the last [New Order](#) or [Order Modification Request](#) that successfully updated the order.

#### 2.4.15 Order Submission Requests

OSRs are sent by the system, in the form of Execution Reports to notify the Participant that their BI matched in **Turquoise Plato Block Discovery™**. An OSR will contain the following information:

- Exec Type = L,
- Order Status = 0 (New),
- Client Order ID,
- An Order ID (Same OrderID stamped on new BI ack Execution Report, which needs to be sent back in the ClOrdLinkID field as part of a QBO),
- Limit price of Order to be submitted (unless the BI was unpriced i.e. a Market Order),
- Executed Price,
- MES of Order to be submitted,
- Size of Order to be submitted (This will be the size of the BI irrespective of the size matched in **Turquoise Plato Block Discovery™**),
- Instrument and side of the Order to be submitted,
- Reputational Score of the Participant (Only on OSRs for matched BIs); and
- Time the message was generated.

### 2.5 Security Identification

Participants submit and manage orders by specifying the MTF Common Symbol.

Participants can submit and manage Orders by specifying the MTF Common Symbol. When using the MTF Common Symbol scheme, the Participant must specify the following:

- (i) The Common Symbol in the CommonSymbol field
- (ii) The order book in the TargetBook field:
  - '0' for **Turquoise Plato™** Order Book
  - '1' for **Turquoise Lit™** Order Book
  - '3' for **Turquoise Plato™** Dark Lit Sweep
  - '4' for **Turquoise Plato Lit Auctions™**
  - '5' for **Turquoise NYLON™** Cash Order Book

## 2.6 Market Operations

### 2.6.1 Order Deletion

Market Operations are able to cancel orders on behalf of a Participant in accordance with the Turquoise rulebook.

The Participant will be notified of the [Order Cancel Request](#) submitted on its behalf if and when it is accepted. If the cancellation is accepted, the disseminated Execution Report will not be assigned a new Client Order ID. The Participant will not be notified if the action is rejected.

This feature is intended to help a Participant manage an emergency situation and should not be relied upon as a normal business practice.

### 2.6.2 Trade Cancellations

Market Operations may cancel any on-book trade. The server will transmit [Execution Reports](#) to the relevant Participants to notify them of a trade cancellation or correction.

If an execution is cancelled to reduce the executed quantity, the cancelled quantity will have to be reduced from the order quantity for that order.

Therefore, the order will have to be restated to reduce its order quantity by the cancelled quantity. The Participant will receive two notifications in such a scenario; one for the trade cancel and another for the restatement.

## 2.7 Conditionally Required fields

All fields that are not conditionally required will not be validated by the server, and will only be passed back on execution reports.

## 2.8 Timestamps and Dates

ExpireDateTime should be in Unix (Posix) time which will be the number of seconds elapsed since midnight proleptic Coordinated Universal Time (UTC) of January 1, 1970, not counting leap seconds. The first 4 bytes of the TransactTime timestamp will represent the Unix (Posix) time while the next 4 bytes will specify the microseconds. The TransactTime will be in UTC.

7	6	5	4	3	2	1	0
micro seconds				UNIX time			

## 2.9 Information for Billing

Customers may use the Native Execution Report to estimate billing. For the current Turquoise rebates and fees, please refer to the [TQ Equity Tariff Schedule](#).

In general, rebates and fees can be determined via the following Native Execution Report fields:



- **Turquoise Lit™** Order Book – aggressive trades
  - Target Book = 1 and Trade Liquidity Indicator = R
- **Turquoise Lit™** Order Book – passive trades
  - Target Book = 1 and Trade Liquidity Indicator = A
- **Turquoise Plato™** Order Book – all trades
  - Target Book = 0 (The Trade Liquidity Indicator field is not required for calculation)
- **Turquoise Plato Lit Auctions™** Order Book – all trades
  - Target Book = 4 (The Trade Liquidity Indicator field is not required for calculation)
- **Turquoise NYLON™** Cash Order Book– all trades
  - Target Book = 5 (The Trade Liquidity Indicator field is not required for calculation)
- In addition, the MTF Common Symbol field may be relevant for stocks that are eligible for rebates during new market segment promotions.

## 2.10 MiFID II changes

### 2.10.1 Order Capacity

The Order capacities are shown below.

Pre-MiFID II name	MiFID II name
Principal	Dealing on own account (DEAL)
Agency	Any other trading capacity (AOTC)
Riskless Principal	N/A
N/A	Matched Principal (MTCH)

Until MiFID II go-live, Capacity = 1 in all relevant messages will be treated as Riskless Principal. After MiFID II go-live, it will be treated as Matched Principal (MTCH).

### 2.10.2 Order Record Keeping Information

The participants should provide the short code in the 'Client ID', 'Investment Decision Maker' or 'Executing Trader' fields. These fields are named as 'Client ID', 'Investment decision within firm' and 'Execution within firm'

in the MiFID II/MiFIR RTS 24 regulatory documentation. The short code should be provided in the New Order message. The values will not be sent back in the server generated messages. This information can not be amended.

A short code must be in the range from 4 to 4,294,967,295.

The PartyRoleQualifier field contains 8 bits where each pair of two bits represent the 'Client ID', 'Investment Decision Maker' and 'Executing Trader', as shown in the table below. The permutations in grey are accepted by the system, but are not advised.

Bit	7	6	5	4	3	2	1	0
<b>Relevant Party Identifier</b>	<b>Reserved</b>		<b>Executing Trader</b>		<b>Investment Decision Maker</b>		<b>Client ID</b>	
<b>Party Role Qualifier meaning</b>								
<b>None</b>			0	0	0	0	0	0
<b>LEI/Firm</b>			0	1	0	1	0	1
<b>Algo</b>			1	0	1	0	1	0
<b>Natural Person</b>			1	1	1	1	1	1

PartyRoleQualifier = None will be rejected when 'Client ID', 'Investment Decision Maker' or 'Executing Trader' is specified as a short code.

The below table shows the valid combinations of the Party Identifier for 'Client ID', 'Investment Decision Maker' or 'Executing Trader' and PartyRoleQualifier. Note; other combinations outside of the ranges below maybe accepted but this is not advised.

Party identifier	Native field/value
1. Client - Legal entity (LEI)	Client ID= <Short Code>, PartyRoleQualifier bit0 =1, bit1=0
2. Client - Natural person	Client ID = <Short Code>, PartyRoleQualifier bit0 =1, bit1=1
3. An aggregation of multiple client orders	Client ID = 1 (AGGR)
4. Clients are pending allocation	Client ID = 2 (PNAL)
5. No client for the order	Client ID = 0 (None)
6. Investment Decision Maker - Natural person	Investment Decision Maker = <Short Code>, PartyRoleQualifier bit2 =1, bit3=1
7. Investment Decision Maker – Algorithm	Investment Decision Maker = <Short Code>, PartyRoleQualifier bit2 =0, bit3=1
8. Executing Trader - Natural person	Executing Trader = <Short Code>, PartyRoleQualifier bit4 =1, bit5=1

### 2.10.3 Pre-Trade Waiver Flags

Transactions executed under the reference price waiver will be flagged with the 'RFPT' Waiver Flag in the [Execution Report](#) message.

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## 3.0 Connectivity

### 3.1 CompIDs

CompIDs will be confirmed with each Participant before communications can begin through the Native Trading Gateway. A single Participant may have multiple connections to the server (i.e. a Participant can maintain multiple sessions if he has multiple CompIDs).

### 3.2 Passwords

Each CompID will be assigned a password on registration. Participants will be required to change the password to one of their choosing via the [Logon](#) message. When a new password is submitted by the Participant, a successful login will indicate that the new password is accepted. The new password will, if accepted, be effective for subsequent logins. If a new password is rejected, the RejectReason of the [Logon Reply](#) will indicate why the password is rejected.

In terms of the Turquoise password policy, the initial password of each CompID must be changed at least once. If not, the Participant will be unable to login to the server. In such a case, the Participant should contact Turquoise.

### 3.3 Production IP Addresses and Ports

The IP addresses and ports for the Native Trading Gateway are published in the [Turquoise Connectivity Guide](#).

### 3.4 Failover and Recovery

The system has been designed with fault tolerance and disaster recovery technology that ensures that trading should continue in the unlikely event of a process or site outage.

If the Participant is unexpectedly disconnected from the server, it should attempt to re-connect to primary site within a few seconds. The Participant should only attempt to connect to the backup IP address and port if so requested by Turquoise.

If a service interruption occurs in the Native Recovery Channel (due to Order Cache outage) the Native Gateway will send a [System Status](#) message to all logged in Participants of that gateway's recovery channel with AppID stamped to indicate the service non availability of the partition. When this message is received, Participants are expected to identify that the recovery service is not available for the partition indicated by AppID. They would be able to continue recovery activities on other partitions without interruption.

If the gateway was in the middle of serving a [Missed Message Request](#), it will send a [Missed Message Report](#) message with 'ResponseType' = 3 (service unavailable) to the Participant.

If a new [Missed Message Request](#) is sent by a Participant, the gateway will reject the message with a '[Missed Message Request Ack](#)' with 'ResponseType' = 3 (service unavailable) to the Participant.

Once the service is available again, the Native Gateway will send another [System Status](#) message with AppID to indicate the service availability of the partition to the Participants who are still connected on to the recovery channel with 'AppStatus' = 1. When this message is received, Participants are expected to resend the request for missed messages (preferably from the point of interruption) to the gateway to resume the missed message recovery.

### **3.5 Connectivity Policy**

An application should attempt to connect a maximum of 3 times to the primary gateway with a minimum time out value of 3 seconds between attempts before attempting to connect to the secondary gateway – and this should be retried a maximum of a further 3 times. After 6 failed connection attempts (3 on each gateway) the clients should contact London Stock Exchange for further guidance.

### **3.6 Message Rate Throttling**

Turquoise has implemented a scheme for throttling message traffic where each Participant is only permitted to submit up to a specified number of messages per second.

Messages which exceed the maximum rate of a CompID will be rejected via a [Reject](#).

However, a client's connection will be disconnected by the server if its message rate exceeds the maximum rate for a specific time duration. The rates can be seen in the [Turquoise Trading Technical Parameters](#) document. In such a case, the server will transmit a Logout message and within 1 second will terminate the TCP/IP connection without sending any reject message.

Please note that client Heartbeat messages as well as any reject messages are all counted towards the throttling limits.

### **3.7 Mass Cancel On Disconnect**

At the request of the Participant, the server can be configured to automatically cancel certain live orders submitted by a Participant whenever it disconnects from the server.

The Participant can mark each order (through the Auto Cancel field) showing whether the Participant's settings should be checked in the event of a disconnection/log out or whether the order should remain unaffected. For each server initiated cancellation, Exec Type and Order Status fields in the execution report will be stamped with the value 'Expired' as opposed to 'Cancelled' which would be applicable to all firm initiated cancellations.

This feature does not guarantee that all outstanding marked orders will be successfully cancelled as executions that occur very near the time of disconnect may not be reported to the Participant. During such a situation, the Participant should contact Market Operations to verify that all marked orders have been cancelled and all Execution Report messages have been received.

The configuration of the mass cancellation on disconnect feature cannot be updated during a session.

### **3.8 Mass Cancel on Disconnect of Member Firm for Sponsored Participant**

Sponsoring Firms are able to constantly monitor their Sponsored Participants via a Drop Copy Gateway connection. Should a Sponsoring Firm lose their ability to monitor their Sponsored Participants (e.g. Disconnect) and not reconnect within the configured amount of time, their Sponsored Participants will be restricted from submitting new orders, while all their existing orders will be expired.

### **3.9 Mass Cancel on Suspension of a Sponsored Participant**

Sponsoring Firms will have the ability to suspend access to a Sponsored Participant via the Sponsor Portal. On suspension of a Sponsored Participant they will be restricted from submitting new orders, while all their existing orders will be cancelled.

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## 4.0 Connections and Sessions

### 4.1 Establishing a Connection

Each Participant will use the assigned IP address and port to establish a TCP/IP session with the server. If the Participant does not initiate the session by sending the [Logon](#) message within one heartbeat interval of establishing the session, the connection will be dropped by the server. The Participant will identify itself using the CompID field. The server will validate the CompID and password of the Participant.

Once the Participant is authenticated, the server will respond with a [Logon Reply](#) message. If the Participant's logon is successful or if the Participant's new password is accepted, the RejectCode of the [Logon Reply](#) will be Successful (0). If the Participant's logon is unsuccessful (e.g. invalid or expired password, locked user etc.), the system will break the TCP/IP connection without sending a Logon Reply message.

The Participant must wait for the server's Logon before sending additional messages. The server will reject messages received prior to sending the Logon message and prior to receiving the Logon response. Subsequently, the Logon sent by the Participant will be accepted and the user will be logged in successfully. In some cases (e.g.: Non existing username, username with no Native login privileges) the session will be disconnected with no [Logon Reply](#).

If during a logon, the server receives a second connection attempt via the same TCP/IP connection while a valid session is already underway, the server will break the TCP/IP connection with the Participant without sending a Logout or Reject message.

The number of connection limits and the number of logins allowed to the server will be configured in the system. The client will not be able to connect to the server if they have exceeded the maximum number of connections allowed. If the client has exceeded the number of maximum number of logins allowed to the server, but hasn't exceeded the maximum number of connections, the login request will be rejected.

A protection mechanism is in place in order to protect the gateway from rapid login/logouts. If a user reaches the thresholds for rapid login/logouts, any future logins/logouts will be delayed exponentially.

### 4.2 Maintaining a Session

#### 4.2.1 Application Sequence Numbers

While the Server-initiated application messages will always have an AppID and a Sequence No, the Participant-initiated application messages will not be numbered. The AppID will correspond to the partition ID of the instrument the message is sent for, and the Sequence No will be a sequence number assigned to messages of the given partition.

The Sequence Number received by a Participant for a particular AppID although incremental will not be sequential since the sequence numbers are not maintained per Participant. Therefore, a Participant should not connect to the recovery channel and request missed messages if the difference in SequenceNo between two consecutive messages is more than one. Recovery should be initiated only upon a reconnection after a session disconnection.

Uniqueness of Participant-initiated messages will be achieved through the provision of unique Participant Order IDs per Participant.

#### 4.2.2 Heartbeats

The Participant and server will use the [Heartbeat](#) message to exercise the communication line during periods of inactivity and to verify that the interfaces at each end are available. The heartbeat interval is 3 seconds, for both Participant and server.

The server will send a [Heartbeat](#) anytime it has not transmitted a message for the heartbeat interval. The Participant is expected to employ the same logic.

If the server detects inactivity for five heartbeat intervals, the server will send a Logout and break the TCP/IP connection with the client. The client is expected to employ similar logic if inactivity is detected on the part of the server.

### **4.3 Terminating a Connection**

The Participant is expected to terminate each connection at the end of each trading day before the server shuts down. The Participant will terminate a connection by sending the [Logout](#) message. The Participant will then break the TCP/IP connection with the server.

All open TCP/IP connections will be terminated by the server when it shuts down (a Logout will not be sent). Under exceptional circumstances the server may initiate the termination of a connection during the trading day by sending the Logout message.

Either party that wishes to terminate the connection may wait the heartbeat interval duration before breaking the TCP/IP connection, in order to ensure that the other party received the [Logout](#) message.

### **4.4 Dormant Account Policy**

Participants are advised that ComplIDs for both the Native and FIX Trading services will automatically be deactivated after a period of 100 days without a successful logon.

If a Participant is unable to connect because a ComplID has been marked as inactive, they should contact Turquoise Market Operations who will reactivate ComplIDs as required.

Participants that may have allocated specific Trading ComplIDs for a disaster recovery site are strongly advised to take note of the above.

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## 5.0 Recovery

If a Participant gets disconnected from the server, the recovery channel shall be used to recover missed messages. This section explains the protocol to be followed when recovering missed messages.

### 5.1 Requesting Missed Messages

When a Participant needs to recover missed messages he must first connect to the Real Time Channel and establish a session by exchanging [Logon](#) and [Logon Reply](#) messages. The Participant may then connect to the Recovery Channel and exchange [Logon](#) and [Logon Reply](#) messages to establish a recovery session. Any attempt to connect to the Recovery Channel without first connecting to the Real Time Channel shall be rejected, and the server will send a [Logon Reply](#) message, which will include the appropriate Reject Code. The Participant must ensure proper authentication (i.e. same CompID and password) when logging in to both channels. Any values sent for the NewPassword field in the [Logon](#) message sent to the Recovery Channel will be ignored.

After establishing a connection with the Recovery Channel, the Participant may send a [Missed Message Request](#) with the relevant AppID and the last received Sequence No corresponding to that AppID. The Participant will have to send separate [Missed Message Request](#) messages to retrieve messages from each partition.

If a service interruption (via Order Cache Primary failing over to its Mirror or via both Order Cache Processes going down) occurs in the Native Recovery Channel the Native Gateway will send a [System Status](#) message to all logged in Participants of that gateway's recovery channel with AppID to indicate the service non availability of the partition. When this message is received, the Participants are expected identify that the recovery service is not available for the partition indicated by AppID. They would be able to continue recovery activities on other partitions without interruptions.

If the gateway was in the middle of serving a [Missed Message Request](#), it will send a [Missed Message Report](#) message with 'Status' = 3 (service unavailable) to the Participant.

If a new [Missed Message Request](#) is sent by a Participant, the gateway will reject the message with a '[Missed Message Request Ack](#)' with 'Status' = 3 (service unavailable) to the Participant. Once the service is available again, the Native Gateway will then send another [System Status](#) message with AppID and with 'AppStatus' = 1 to indicate the service availability of the partition to the Participants who are still connected on to the recovery channel. When this message is received, the Participants are expected to resend the request for missed messages (preferably from the point of interruption) to the gateway to resume the missed message recovery.

### 5.2 Response to a Missed Message Request

The server will respond to the [Missed Message Request](#) with a [Missed Message Request Ack](#) to indicate whether the recovery request is successful or not. If the request is unsuccessful, the reason will be specified in the field ResponseType.

The total number of [Missed Message Requests](#) that a Participant may send on the Recovery channel is limited each day. This limit is defined by Turquoise. Once this limit is reached, the server will reject any additional request via a [Missed Message Request Ack](#) with a ResponseType of Recovery Request limit reached (1).

In the case of a successful recovery request, the server will transmit the requested messages immediately after the [Missed Message Request Ack](#). It should be noted that due to race conditions duplicate messages may be transmitted via the recovery channel. Participants are advised to use the AppID and SeqNum to carry out duplicate discard. Please note that the response to a missed message request will include the LastMsgSeqNum message.

Upon transmitting all the missed messages (i.e. messages from the last received Sequence No to the first message received through the Real Time Channel) the Recovery Channel will send a [Missed Message Report](#) which will indicate whether or not all requested messages have been sent.

The total number of messages that a Participant may receive is limited per [Missed Message Request](#). Therefore, if the Participant's missed message request exceeds this limit, the server will send the first set of messages from the AppID and Sequence No provided, followed by a [Missed Message Report](#) with a ResponseType of Message Limit Reached (1).

[Missed Message Requests](#) sent by the Participant prior to receiving the [Missed Message Report](#) will be queued and will be processed after the [Missed Message Report](#) has been sent for previous requests.

Upon receiving the [Missed Message Report](#), the Participant can send a [Logout](#) message and terminate the connection or submit a new [Missed Message Request](#) for any more messages that need to be transmitted.

### **5.3 Terminating the Recovery Session**

Upon sending the [Missed Message Report or Missed Message Request Ack](#) the server will wait five heartbeat intervals prior to disconnecting the Participant. If the Participant has received only part of the message set that was requested, the Participant may send in a new [Missed Message Request](#) message for the messages that were not recovered in the first attempt. However, if such a request is not sent within three heartbeat intervals the Server will terminate the connection. The client can send multiple [Missed Message Request](#) messages before the recover connection is terminated. The recovery connection will not be terminated in the middle of serving a [Missed Message Request](#). If the Participant is unable to send a new request within this time, the Participant can re-login to the Recovery Channel and send in the [Missed Message Request](#).



## 6.0 Data Types

The fields of the messages utilised by the server will support the data types outlined below.

Data Type	Length	Description
Alpha	1	A single byte used to hold one ASCII character.
Price	8	Signed Little-Endian encoded eight byte integer field with eight implied decimal places.
UInt8	1	8 bit unsigned integer.
Int8	1	Little-Endian encoded 8 bit signed integer
Int16	2	Little-Endian encoded 16 bit signed integer
UInt16	2	Little-Endian encoded 16 bit unsigned integer
Int32	4	Little-Endian encoded 32 bit signed integer.
UInt32	4	Little-Endian encoded 32 bit unsigned integer.
UInt64	8	Little-Endian encoded 64 bit unsigned integer
String (null terminated)	Variable	These fields use standard ASCII character bytes. A field will be null terminated if the full fixed length is unused. The first byte will contain a null if the field is unused.
Byte	1	A single byte used to hold one ASCII character.

Customers should design their applications such that:

- When sending messages, it populates all Reserved fields with nulls (hex 0x00)
- When receiving messages, it disregards and does not process any fields marked as Reserved

## 7.0 Message Formats

This section provides details on the eight administrative messages and eight application messages utilized by the server. Any message not included in this section will be rejected by the server.

### 7.1 Supported Message Types

#### 7.1.1 Administrative Messages

All administrative messages may be initiated by either the Participant or the server (unless otherwise indicated).

Message	Message Type	Usage
<a href="#">Logon</a>	A	Allows the Participant and server to establish a session.
<a href="#">Logon Reply</a>	B	Allows the server to acknowledge a Participants Logon.
<a href="#">Logout</a>	5	Allows the Participant and server to terminate a session.
<a href="#">Heartbeat</a>	0	Allows the Participant and server to exercise the communication line during periods of inactivity and verify that the interfaces at each end are available.
<a href="#">Missed Message Request</a>	M	Allows the Participant to subscribe to missed messages through the Recovery Channel.
<a href="#">Missed Message Request Ack</a>	N	Allows the server to acknowledge a Participant's Missed Message Request.
<a href="#">Missed Message Report</a>	P	Allows the Server to communicate the result of a Missed Message Request.
<a href="#">Reject</a>	3	Allows the Server to reject a message that does not comply with the Native Trading Gateway messaging protocol.
<a href="#">System Status</a>	n	Sent to All Native Recovery Channel Participants on the event of Order Cache Outage.

#### 7.1.2 Application Messages: Order Handling

##### 7.1.2.1 Participant-Initiated

Message	Message Type	Usage
<a href="#">New Order</a>	D	Allows the Participant to submit a new order.
<a href="#">Order Cancel Request</a>	F	Allows the Participant to cancel a live order.

<a href="#">Order Mass Cancel Request</a>	q	<p>Allows the Participant to mass cancel:</p> <ul style="list-style-type: none"> <li>(i) All live orders.</li> <li>(ii) All live orders for a particular instrument.</li> <li>(iii) All live orders for a particular segment.</li> </ul> <p>The mass cancel may apply to the orders of a particular trading party or to all orders of the firm.</p>
<a href="#">Order Cancel/Replace Request</a>	G	Allows the Participant to cancel/replace a live order.

#### 7.1.2.2 Server-Initiated

Message	Message Type	Usage
<a href="#">Execution Report</a>	8	<p>Indicates one of the following:</p> <ul style="list-style-type: none"> <li>(i) Order accepted.</li> <li>(ii) Order rejected.</li> <li>(iii) Order executed.</li> <li>(iv) Order expired.</li> <li>(v) Order cancelled.</li> <li>(vi) Order cancel/replaced.</li> <li>(vii) Trade cancel.</li> <li>(viii) BI triggered.</li> </ul>
<a href="#">Order Cancel Reject</a>	9	Indicates that an <a href="#">Order Cancel Request</a> or <a href="#">Order Cancel/Replace Request</a> has been rejected.
<a href="#">Order Mass Cancel Report</a>	r	<p>Indicates one of the following:</p> <p>Mass order cancel request accepted.</p> <p>Mass order cancel request rejected.</p>
<a href="#">Business Message Reject</a>	j	Indicates that an application message could not be processed.

## 7.2 Message Header

Field	Offset	Length	Data Type	Description
Start of Message	0	1	Int8	Indicates the start of the message. Participants will have to send the binary value of '2' at the start of each message. Server will also follow the same protocol.
Message Length	1	2	UInt16	Length of the message from the Message Type field onwards  i.e. total message length - 3.
Message Type	3	1	Alpha	Type of Message.

## 7.3 Administrative Messages

### 7.3.1 Logon

Field	Offset	Length	Data Type	Description
Header	MsgType = A (0x41)			
Comp ID	4	25	String	Participant name
Password	29	25	String	Password
New Password	54	25	String	New Password
Message Version	79	1	Int8	Message Version that will be used in this session. Always set to 1.

### 7.3.2 Logon Reply

Field	Offset	Length	Data Type	Description
Header	MsgType = B (0x42)			
Reject Code	4	4	Int32	Code specifying the reason for the reject.
Password Expiry Day Count	8	30	String	The number of days before the password will expire.

### 7.3.3 Logout

Field	Offset	Length	Data Type	Description
Header	MsgType = 5 (0x35)			
Logout Reason	4	20	String	Reason for the logout.

### 7.3.4 Heartbeat

Field	Offset	Length	Data Type	Description
Header	MsgType = 0 (0x30)			

### 7.3.5 Missed Message Request

Field	Offset	Length	Data Type	Description										
Header	MsgType = M (0x4D)													
App ID	4	1	Int8	Partition ID  <table border="1"> <thead> <tr> <th>Value</th> <th>Meaning</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>Partition 1</td> </tr> <tr> <td>2</td> <td>Partition 2</td> </tr> <tr> <td>3</td> <td>Partition 3</td> </tr> <tr> <td>4</td> <td>Partition 4</td> </tr> </tbody> </table>	Value	Meaning	1	Partition 1	2	Partition 2	3	Partition 3	4	Partition 4
Value	Meaning													
1	Partition 1													
2	Partition 2													
3	Partition 3													
4	Partition 4													
Last Msg Seq Num	5	4	Int32	Last received Sequence Number. Please note that the response will include the LasMsgSeqNum message.										

### 7.3.6 Missed Message Request Ack

Field	Offset	Length	Data Type	Description										
Header	MsgType = N (0x4E)													
Response Type	4	1	Int8	<table border="1"> <thead> <tr> <th>Value</th> <th>Meaning</th> </tr> </thead> <tbody> <tr> <td>0</td> <td>Successful</td> </tr> <tr> <td>1</td> <td>Recovery Request limit reached</td> </tr> <tr> <td>2</td> <td>Invalid App ID</td> </tr> <tr> <td>3</td> <td>Service Unavailable</td> </tr> </tbody> </table>	Value	Meaning	0	Successful	1	Recovery Request limit reached	2	Invalid App ID	3	Service Unavailable
Value	Meaning													
0	Successful													
1	Recovery Request limit reached													
2	Invalid App ID													
3	Service Unavailable													

### 7.3.7 Missed Message Report

Field	Offset	Length	Data Type	Description								
Header	MsgType = P (0x50)											
Response Type	4	1	Int8	<table border="1"> <thead> <tr> <th>Value</th> <th>Meaning</th> </tr> </thead> <tbody> <tr> <td>0</td> <td>Download Complete</td> </tr> <tr> <td>1</td> <td>Message limit reached</td> </tr> <tr> <td>3</td> <td>Service Unavailable</td> </tr> </tbody> </table>	Value	Meaning	0	Download Complete	1	Message limit reached	3	Service Unavailable
Value	Meaning											
0	Download Complete											
1	Message limit reached											
3	Service Unavailable											

### 7.3.8 Reject

Field	Offset	Length	Data Type	Description
Header	MsgType = 3 (0x33)			
Reject Code	4	4	Int32	Code specifying the reason for the reject.
Reject Reason	8	30	String	Reject Reason.
Rejected Message Type	38	1	Alpha	Message type of the rejected message.
Client Order ID	39	20	String	Participant specified identifier of the rejected message if it is available.

### 7.3.9 System Status

Field	Offset	Length	Data Type	Description										
Header	MsgType = n (0x6E)													
App ID	4	1	Int8	Partition ID  <table border="1"> <thead> <tr> <th>Value</th> <th>Meaning</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>Partition 1</td> </tr> <tr> <td>2</td> <td>Partition 2</td> </tr> <tr> <td>3</td> <td>Partition 3</td> </tr> <tr> <td>4</td> <td>Partition 4</td> </tr> </tbody> </table>	Value	Meaning	1	Partition 1	2	Partition 2	3	Partition 3	4	Partition 4
Value	Meaning													
1	Partition 1													
2	Partition 2													
3	Partition 3													
4	Partition 4													
Reject Reason	5	1	Int8	<table border="1"> <thead> <tr> <th>Value</th> <th>Meaning</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>Recovery Service Resumed</td> </tr> <tr> <td>2</td> <td>Recovery Service Not Available</td> </tr> </tbody> </table>	Value	Meaning	1	Recovery Service Resumed	2	Recovery Service Not Available				
Value	Meaning													
1	Recovery Service Resumed													
2	Recovery Service Not Available													

## 7.4 Application Messages: Order Handling

### 7.4.1 New Order

Field	Offset	Length	Data Type	Description												
Header	MsgType = D (0x44)															
Client Order ID	4	20	String	Participant specified identifier of the request. It is mandatory to specify this. <b>Only the first 16 bytes are sent to the CCP.</b>												
Trader ID	24	11	String	Optional Trader ID that Participants may submit.												
Account	35	10	String	Optional reference of the desk the order is submitted for.												
Clearing Account	45	1	UInt8	Clearing Account Type  <table border="1"> <thead> <tr> <th>Value</th> <th>Meaning</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>Client</td> </tr> <tr> <td>3</td> <td>House</td> </tr> </tbody> </table>	Value	Meaning	1	Client	3	House						
Value	Meaning															
1	Client															
3	House															
MTF Common Symbol	46	8	String	MTF Common Symbol of the instrument.												
Order Type	54	1	Int8	Type of order  <table border="1"> <thead> <tr> <th>Value</th> <th>Meaning</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>Market</td> </tr> <tr> <td>2</td> <td>Limit</td> </tr> </tbody> </table>	Value	Meaning	1	Market	2	Limit						
Value	Meaning															
1	Market															
2	Limit															
TIF	55	1	Int8	Time qualifier of the order  <table border="1"> <thead> <tr> <th>Value</th> <th>Meaning</th> </tr> </thead> <tbody> <tr> <td>0</td> <td>Day</td> </tr> <tr> <td>3</td> <td>Immediate or Cancel (IOC)</td> </tr> <tr> <td>4</td> <td>Fill or Kill (FOK)</td> </tr> <tr> <td>8</td> <td>Good Till Time (GTT)</td> </tr> <tr> <td>9</td> <td>Good for Auction (GFA)</td> </tr> </tbody> </table>	Value	Meaning	0	Day	3	Immediate or Cancel (IOC)	4	Fill or Kill (FOK)	8	Good Till Time (GTT)	9	Good for Auction (GFA)
Value	Meaning															
0	Day															
3	Immediate or Cancel (IOC)															
4	Fill or Kill (FOK)															
8	Good Till Time (GTT)															
9	Good for Auction (GFA)															



Expire Date Time	56	4	UInt32	<p>This field will indicate the time the order expires on. GTT orders will be rejected if a value greater than zero is not specified for this field. The value specified in this field will be ignored if the TIF is not GTT.</p> <p>Should be in Unix (Posix) time which will be the number of seconds elapsed since midnight proleptic Coordinated Universal Time (UTC) of January 1, 1970, not counting leap seconds.</p>								
Side	60	1	Int8	<p>Side of the order</p> <table border="1"> <thead> <tr> <th>Value</th> <th>Meaning</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>Buy</td> </tr> <tr> <td>2</td> <td>Sell</td> </tr> </tbody> </table>	Value	Meaning	1	Buy	2	Sell		
Value	Meaning											
1	Buy											
2	Sell											
Order Qty	61	4	Int32	Total order quantity.								
Display Qty	65	4	Int32	<p>Maximum quantity that may be displayed.</p> <p>The intended display quantity has to be inserted as this is a mandatory field.</p>								
Limit Price	69	8	Price	<p>Limit Price.</p> <p>Required if OrderType is Limit. Else this field will be ignored.</p>								
Capacity	77	1	Int8	<p>Capacity of the order.</p> <table border="1"> <thead> <tr> <th>Value</th> <th>Meaning</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>Matched Principal (MTCH)</td> </tr> <tr> <td>2</td> <td>Dealing on own account (DEAL)</td> </tr> <tr> <td>3</td> <td>Any other trading capacity (AOTC)</td> </tr> </tbody> </table>	Value	Meaning	1	Matched Principal (MTCH)	2	Dealing on own account (DEAL)	3	Any other trading capacity (AOTC)
Value	Meaning											
1	Matched Principal (MTCH)											
2	Dealing on own account (DEAL)											
3	Any other trading capacity (AOTC)											
Auto Cancel	78	1	Int8	<p>Checks Participant preferences on logout/disconnection of session</p> <table border="1"> <thead> <tr> <th>Value</th> <th>Meaning</th> </tr> </thead> <tbody> <tr> <td>0</td> <td>Do not cancel on disconnect</td> </tr> <tr> <td>1</td> <td>Check system preference</td> </tr> </tbody> </table>	Value	Meaning	0	Do not cancel on disconnect	1	Check system preference		
Value	Meaning											
0	Do not cancel on disconnect											
1	Check system preference											

Order Sub Type	79	1	Int8	<p>Used to specify the order sub type.</p> <p>Types 1, 3 and 5 are not accepted to the <b>Turquoise Lit™</b> Order Book, so they will be rejected if accompanied with Target Book of 1 or 3.</p> <p>Only Types 0 and 5 are accepted by the <b>Turquoise Plato Lit Auctions™</b> Order Book (Target Book = 4).</p> <p><b>Only Type 0 is accepted by the Turquoise NYLON™ Cash Order Book (Target Book = 5).</b></p> <p>If this is populated with value “51” while a value which is greater than 0 and less than the Order Quantity is populated in DisplayQty, the DisplayQty after a replenishment will be random.</p> <p>If this is populated with value “0” while a value which is greater than 0 and less than the Order Quantity is populated in DisplayQty, the DisplayQty after a replenishment will be “fixed peak”.</p> <p>Type 5 is rejected if submitted by a Sponsored Access User.</p> <table border="1"> <thead> <tr> <th>Value</th> <th>Meaning</th> </tr> </thead> <tbody> <tr> <td>0</td> <td>Order</td> </tr> <tr> <td>1</td> <td>BI</td> </tr> <tr> <td>3</td> <td>Order + BDN</td> </tr> <tr> <td>5</td> <td>Pegged Order</td> </tr> <tr> <td>51</td> <td>Random</td> </tr> </tbody> </table>	Value	Meaning	0	Order	1	BI	3	Order + BDN	5	Pegged Order	51	Random
Value	Meaning															
0	Order															
1	BI															
3	Order + BDN															
5	Pegged Order															
51	Random															
Reserved Field 1	80	1	Int8	Reserved for future use.												
Reserved Field 2	81	8	Price	Reserved for future use.												

Target Book	89	1	UInt8	<p>Indicates the target book for the order <b>being used by TGHM members (TRQX, TRQM, TRQA) or TGHE members (TQEX, TQEM, TQEA)</b></p> <table border="1"> <thead> <tr> <th>Value</th> <th>Meaning</th> </tr> </thead> <tbody> <tr> <td>0</td> <td><b>Turquoise Plato™ Order Book (TRQM or TQEM)</b></td> </tr> <tr> <td>1</td> <td><b>Turquoise Lit™ Order Book (TRQX or TQEX)</b></td> </tr> <tr> <td>3</td> <td><b>Turquoise Plato™ Dark Lit Sweep (TRQM AND TRQX or TQEM AND TQEX)</b></td> </tr> <tr> <td>4</td> <td><b>Turquoise Plato Lit Auctions™ Order Book (TRQA or TQEA)</b></td> </tr> <tr> <td>5</td> <td><b>Turquoise NYLON™ Cash Order Book (TRQB)</b></td> </tr> </tbody> </table>	Value	Meaning	0	<b>Turquoise Plato™ Order Book (TRQM or TQEM)</b>	1	<b>Turquoise Lit™ Order Book (TRQX or TQEX)</b>	3	<b>Turquoise Plato™ Dark Lit Sweep (TRQM AND TRQX or TQEM AND TQEX)</b>	4	<b>Turquoise Plato Lit Auctions™ Order Book (TRQA or TQEA)</b>	5	<b>Turquoise NYLON™ Cash Order Book (TRQB)</b>
Value	Meaning															
0	<b>Turquoise Plato™ Order Book (TRQM or TQEM)</b>															
1	<b>Turquoise Lit™ Order Book (TRQX or TQEX)</b>															
3	<b>Turquoise Plato™ Dark Lit Sweep (TRQM AND TRQX or TQEM AND TQEX)</b>															
4	<b>Turquoise Plato Lit Auctions™ Order Book (TRQA or TQEA)</b>															
5	<b>Turquoise NYLON™ Cash Order Book (TRQB)</b>															
Exec Instruction	90	1	Int8	<p>Indicates if the order should participate only in <b>Turquoise Plato Uncross™</b> events, or in continuous trading as well. The value set in this field will be ignored for orders entering the <b>Turquoise Lit™</b> Order Book or <b>Turquoise Plato Lit Auctions™</b> Order Book.</p> <table border="1"> <thead> <tr> <th>Value</th> <th>Meaning</th> </tr> </thead> <tbody> <tr> <td>0</td> <td>Apply user level Default</td> </tr> <tr> <td>1</td> <td><b>Turquoise Plato Uncross™</b> only</td> </tr> <tr> <td>2</td> <td>Continuous only</td> </tr> <tr> <td>5</td> <td>Continuous and <b>Turquoise Plato Uncross™</b></td> </tr> <tr> <td>6</td> <td><b>Turquoise Plato Uncross™</b> then Continuous</td> </tr> </tbody> </table>	Value	Meaning	0	Apply user level Default	1	<b>Turquoise Plato Uncross™</b> only	2	Continuous only	5	Continuous and <b>Turquoise Plato Uncross™</b>	6	<b>Turquoise Plato Uncross™</b> then Continuous
Value	Meaning															
0	Apply user level Default															
1	<b>Turquoise Plato Uncross™</b> only															
2	Continuous only															
5	Continuous and <b>Turquoise Plato Uncross™</b>															
6	<b>Turquoise Plato Uncross™</b> then Continuous															
Minimum Quantity	91	4	Int32	<p>Minimum Fill size. Please reference <a href="#">2.3.1</a> for further description</p> <p>Set to zero if there is no minimum fill size.</p>												
Reserved Field 3	95	1	Int8	Reserved for future use.												

Reserved Field 4	96	1	Int8	Reserved for future use.														
Reserved Field 5	97	1	Int8	Reserved for future use.														
Passive Only Order	98	1	Int8	<p>Used to specify whether an order will rest prior to execution, with flexibility for visible orders to rest at a specified price level on the book.</p> <p>No protection is provided against order execution with large in scale hidden orders sat within the BBO.</p> <p>A hidden order submitted with a value other than 0 or 99 will be rejected.</p> <p>A <b>Turquoise Plato™</b> Order submitted with a value other than 0 will be rejected.</p> <p>The value will be ignored for the <b>Turquoise Plato Lit Auctions™</b> Order Book and the <b>Turquoise NYLON™</b> Cash Order Book.</p> <table border="0"> <thead> <tr> <th style="text-align: left;">Value</th> <th style="text-align: left;">Meaning</th> </tr> </thead> <tbody> <tr> <td>0</td> <td>No constraint  (ignore this field, i.e. aggressive or passive)</td> </tr> <tr> <td>99</td> <td>Accept order only if passive upon order entry. Otherwise expire.</td> </tr> <tr> <td>100</td> <td>Accept order if setting new BBO. Otherwise expire.</td> </tr> <tr> <td>1</td> <td>Accept order if setting new BBO or joining existing BBO. Otherwise expire.</td> </tr> <tr> <td>2</td> <td>Accept order if joining existing BBO or within one visible price point. Otherwise expire.</td> </tr> <tr> <td>3</td> <td>Accept order if joining existing BBO or within two visible price points. Otherwise expire.</td> </tr> </tbody> </table>	Value	Meaning	0	No constraint  (ignore this field, i.e. aggressive or passive)	99	Accept order only if passive upon order entry. Otherwise expire.	100	Accept order if setting new BBO. Otherwise expire.	1	Accept order if setting new BBO or joining existing BBO. Otherwise expire.	2	Accept order if joining existing BBO or within one visible price point. Otherwise expire.	3	Accept order if joining existing BBO or within two visible price points. Otherwise expire.
Value	Meaning																	
0	No constraint  (ignore this field, i.e. aggressive or passive)																	
99	Accept order only if passive upon order entry. Otherwise expire.																	
100	Accept order if setting new BBO. Otherwise expire.																	
1	Accept order if setting new BBO or joining existing BBO. Otherwise expire.																	
2	Accept order if joining existing BBO or within one visible price point. Otherwise expire.																	
3	Accept order if joining existing BBO or within two visible price points. Otherwise expire.																	

CI Ord Link ID	99	12	String	Identifier linking the Order to the OSR. Must be populated with the Order ID of the OSR.																											
Client ID	111	4	UInt32	<p>Identifier of the client. 0 will be stamped in a situation where the field is not specified. Only the following values will be accepted.</p> <table border="1"> <thead> <tr> <th>Value</th> <th>Meaning</th> </tr> </thead> <tbody> <tr> <td>0</td> <td>None</td> </tr> <tr> <td>1</td> <td>AGGR</td> </tr> <tr> <td>2</td> <td>PNAL</td> </tr> <tr> <td>4 – 4,294,967,295</td> <td>Short code</td> </tr> </tbody> </table>	Value	Meaning	0	None	1	AGGR	2	PNAL	4 – 4,294,967,295	Short code																	
Value	Meaning																														
0	None																														
1	AGGR																														
2	PNAL																														
4 – 4,294,967,295	Short code																														
Investment Decision Maker	115	4	UInt32	<p>Identifier of the trading member/participant who made investment decision. 0 will be stamped in a situation where the field is not specified. Only the following values will be accepted.</p> <table border="1"> <thead> <tr> <th>Value</th> <th>Meaning</th> </tr> </thead> <tbody> <tr> <td>0</td> <td>None</td> </tr> <tr> <td>4 – 4,294,967,295</td> <td>Short code</td> </tr> </tbody> </table>	Value	Meaning	0	None	4 – 4,294,967,295	Short code																					
Value	Meaning																														
0	None																														
4 – 4,294,967,295	Short code																														
Executing within firm	119	4	UInt32	<p>Identifier of the trading member/participant who made the execution decision. 0 will not be accepted as a valid value. Only the following values will be accepted.</p> <table border="1"> <thead> <tr> <th>Value</th> <th>Meaning</th> </tr> </thead> <tbody> <tr> <td>3</td> <td>CLIENT</td> </tr> <tr> <td>4 – 4,294,967,295</td> <td>Short code</td> </tr> </tbody> </table>	Value	Meaning	3	CLIENT	4 – 4,294,967,295	Short code																					
Value	Meaning																														
3	CLIENT																														
4 – 4,294,967,295	Short code																														
MiFIDFlags	123	1	Bit-Field	<p>Flags introduced to identify DEA involvement, Algo and Liquidity provision activity. 0 will be accepted as a valid value. If a bit is not specified, it will be set to 0.</p> <table border="1"> <thead> <tr> <th>Value</th> <th>Name</th> <th>Meaning</th> </tr> </thead> <tbody> <tr> <td>0</td> <td>DEA Flag</td> <td>0: No 1:Yes</td> </tr> <tr> <td>1</td> <td>Liquidity Provision</td> <td>0: No 1:Yes</td> </tr> <tr> <td>2</td> <td>ALGO</td> <td>0: No 1:Yes</td> </tr> <tr> <td>3</td> <td>Reserved</td> <td>-</td> </tr> <tr> <td>4</td> <td>Reserved</td> <td>-</td> </tr> <tr> <td>5</td> <td>Reserved</td> <td>-</td> </tr> <tr> <td>6</td> <td>Reserved</td> <td>-</td> </tr> <tr> <td>7</td> <td>Reserved</td> <td>-</td> </tr> </tbody> </table>	Value	Name	Meaning	0	DEA Flag	0: No 1:Yes	1	Liquidity Provision	0: No 1:Yes	2	ALGO	0: No 1:Yes	3	Reserved	-	4	Reserved	-	5	Reserved	-	6	Reserved	-	7	Reserved	-
Value	Name	Meaning																													
0	DEA Flag	0: No 1:Yes																													
1	Liquidity Provision	0: No 1:Yes																													
2	ALGO	0: No 1:Yes																													
3	Reserved	-																													
4	Reserved	-																													
5	Reserved	-																													
6	Reserved	-																													
7	Reserved	-																													

PartyRoleQualifiers	124	1	Bit-Field	<p>Provides a further qualification for the value specified via the 'Client ID', 'Investment Decision Maker' and 'Executing Trader' IDs. It will not be allowed to specify the value (0,0 - None) for the 'Client ID', 'Investment Decision Maker' and 'Executing Trader' 2 bit positions when the 'Client ID', 'Investment Decision Maker' and/or 'Executing Trader' ID is being specified as a short code (i.e. 4-4294967295).</p> <table border="1" data-bbox="791 577 1356 1070"> <thead> <tr> <th>Description</th> <th>Bit Position</th> <th>Bit Value</th> </tr> </thead> <tbody> <tr> <td>Client ID</td> <td>0</td> <td>0, 1</td> </tr> <tr> <td>Client ID</td> <td>1</td> <td>0, 1</td> </tr> <tr> <td>Investor Information</td> <td>2</td> <td>0, 1</td> </tr> <tr> <td>Investor Information</td> <td>3</td> <td>0, 1</td> </tr> <tr> <td>Executing Trader Information</td> <td>4</td> <td>0, 1</td> </tr> <tr> <td>Executing Trader Information</td> <td>5</td> <td>0, 1</td> </tr> <tr> <td>Reserved</td> <td>-</td> <td>-</td> </tr> <tr> <td>Reserved</td> <td>-</td> <td>-</td> </tr> </tbody> </table> <p>The combination of two relevant bits represent the following:</p> <table border="1" data-bbox="791 1198 1356 1346"> <thead> <tr> <th>Bit Value</th> <th>Bit Value</th> <th>Meaning</th> </tr> </thead> <tbody> <tr> <td>0</td> <td>0</td> <td>None</td> </tr> <tr> <td>0</td> <td>1</td> <td>LEI/Firm</td> </tr> <tr> <td>1</td> <td>0</td> <td>Algo</td> </tr> <tr> <td>1</td> <td>1</td> <td>Natural Person</td> </tr> </tbody> </table> <p>Please refer to the <a href="#">Order Record Keeping Information</a> section for more details.</p>	Description	Bit Position	Bit Value	Client ID	0	0, 1	Client ID	1	0, 1	Investor Information	2	0, 1	Investor Information	3	0, 1	Executing Trader Information	4	0, 1	Executing Trader Information	5	0, 1	Reserved	-	-	Reserved	-	-	Bit Value	Bit Value	Meaning	0	0	None	0	1	LEI/Firm	1	0	Algo	1	1	Natural Person
Description	Bit Position	Bit Value																																												
Client ID	0	0, 1																																												
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Reserved	-	-																																												
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Bit Value	Bit Value	Meaning																																												
0	0	None																																												
0	1	LEI/Firm																																												
1	0	Algo																																												
1	1	Natural Person																																												

## 7.4.2 Order Cancel/Replace Request

Field	Offset	Length	Data Type	Description
Header	MsgType = G (0x47)			
Client Order ID	4	20	String	Participant specified identifier of the request. It is mandatory to specify this. <b>Only the first 16 bytes are sent to the CCP.</b>
Original Client Order ID	24	20	String	Participant Order ID of the order being amended.
OrderID	44	12	String	Unique identifier of the order assigned by the matching system.
Common Symbol	56	8	String	MTF Common Symbol of the instrument.
Expire Date Time	64	4	UInt32	This field will indicate the time the order expires at. GTT orders will be rejected if a value greater than zero is not specified for this field. The value specified in this field will be ignored if the TIF is not GTT.
Order Qty	68	4	Int32	Total order quantity.
Display Qty	72	4	Int32	Maximum quantity that may be displayed.  The intended display quantity has to be inserted as this is a mandatory field.
Limit Price	76	8	Price	For market orders only this field should be filled with a negative. For limit orders the intended limit price has to be inserted.
Account	84	10	String	The reference of the investor the order is submitted for.  This field should be null if it is not being amended.
Reserved Field	94	1	Int8	Reserved for future use.

Side	95	1	Int8	<p>Side of the order.</p> <table border="1"> <thead> <tr> <th>Value</th> <th>Meaning</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>Buy</td> </tr> <tr> <td>2</td> <td>Sell</td> </tr> </tbody> </table>	Value	Meaning	1	Buy	2	Sell				
Value	Meaning													
1	Buy													
2	Sell													
Reserved Field 1	96	8	Price	Reserved for future use.										
Target Book	104	1	UInt8	<p>Indicates the target book for the order <b>being used by TGH members (TRQX, TRQM, TRQA) or TGHE members (TQEX, TQEM, TQEA)</b></p> <table border="1"> <thead> <tr> <th>Value</th> <th>Meaning</th> </tr> </thead> <tbody> <tr> <td>0</td> <td><b>Turquoise Plato™ Order Book (TRQM or TQEM)</b></td> </tr> <tr> <td>1</td> <td><b>Turquoise Lit™ Order Book (TRQX or TQEX)</b></td> </tr> <tr> <td>4</td> <td><b>Turquoise Plato Lit Auctions™ Order Book (TRQA or TQEA)</b></td> </tr> <tr> <td>5</td> <td><b>Turquoise NYLON™ Cash Order Book (TRQB)</b></td> </tr> </tbody> </table>	Value	Meaning	0	<b>Turquoise Plato™ Order Book (TRQM or TQEM)</b>	1	<b>Turquoise Lit™ Order Book (TRQX or TQEX)</b>	4	<b>Turquoise Plato Lit Auctions™ Order Book (TRQA or TQEA)</b>	5	<b>Turquoise NYLON™ Cash Order Book (TRQB)</b>
Value	Meaning													
0	<b>Turquoise Plato™ Order Book (TRQM or TQEM)</b>													
1	<b>Turquoise Lit™ Order Book (TRQX or TQEX)</b>													
4	<b>Turquoise Plato Lit Auctions™ Order Book (TRQA or TQEA)</b>													
5	<b>Turquoise NYLON™ Cash Order Book (TRQB)</b>													



Exec Instruction	105	1	Int8	<p>Indicates if the order should participate only in <b>Turquoise Plato Uncross™</b> events or in continuous trading as well. The value set in this field will be ignored for orders entering the <b>Turquoise Lit™</b> or the <b>Turquoise Plato Lit Auctions™</b> Order Books and <b>Turquoise NYLON™</b> Cash Order Book.</p> <p>If this field is not set or set to zero, the Exec Instruction will remain unchanged.</p> <table border="1" data-bbox="821 660 1324 1131"> <thead> <tr> <th data-bbox="829 660 933 683">Value</th> <th data-bbox="949 660 1053 683">Meaning</th> </tr> </thead> <tbody> <tr> <td data-bbox="829 728 853 750">0</td> <td data-bbox="949 728 1212 750">Apply user level Default</td> </tr> <tr> <td data-bbox="829 795 853 817">1</td> <td data-bbox="949 795 1268 851"><b>Turquoise Plato Uncross™</b> only</td> </tr> <tr> <td data-bbox="829 896 853 918">2</td> <td data-bbox="949 896 1133 918">Continuous only</td> </tr> <tr> <td data-bbox="829 963 853 985">5</td> <td data-bbox="949 963 1252 1019">Continuous and <b>Turquoise Plato Uncross™</b></td> </tr> <tr> <td data-bbox="829 1064 853 1086">6</td> <td data-bbox="949 1064 1268 1120"><b>Turquoise Plato Uncross™</b> then Continuous</td> </tr> </tbody> </table>	Value	Meaning	0	Apply user level Default	1	<b>Turquoise Plato Uncross™</b> only	2	Continuous only	5	Continuous and <b>Turquoise Plato Uncross™</b>	6	<b>Turquoise Plato Uncross™</b> then Continuous
Value	Meaning															
0	Apply user level Default															
1	<b>Turquoise Plato Uncross™</b> only															
2	Continuous only															
5	Continuous and <b>Turquoise Plato Uncross™</b>															
6	<b>Turquoise Plato Uncross™</b> then Continuous															
Min Qty	106	4	Int32	<p>Minimum Fill size. Please reference <a href="#">2.3.1</a> for further description</p> <p>Set to zero if there is no minimum fill size.</p>												

Passive Only Order	110	1	Int8	<b>Value</b>	<b>Meaning</b>
				0	No constraint  (ignore this field, i.e. aggressive or passive)
				99	Accept order only if passive upon order entry. Otherwise expire.
				100	Accept order if setting new BBO. Otherwise expire.
				1	Accept order if setting new BBO or joining existing BBO. Otherwise expire.
				2	Accept order if joining existing BBO or within one visible price point. Otherwise expire.
3	Accept order if joining existing BBO or within two visible price points. Otherwise expire.				
Reserved Field 2	111	3	String	Reserved for future use.	

### 7.4.3 Order Cancel Request

Field	Offset	Length	Data Type	Description
Header	MsgType = F (0x46)			
Client Order ID	4	20	String	Participant specified identifier of the request. It is mandatory to specify this. <b>Only the first 16 bytes are sent to the CCP.</b>
Original Client Order ID	24	20	String	Participant Order ID of the order being cancelled.
Order ID	44	12	String	Unique identifier of the order assigned by the matching system.
Common Symbol	56	8	String	MTF Common Symbol of the instrument.

Side	64	1	Int8	Side of the order
				<b>Value</b> <b>Meaning</b>
				1            Buy
				2            Sell
Target Book	65	1	UInt8	Indicates the target book for the order <b>being used by TGHM members (TRQX, TRQM, TRQA) or TGHE members (TQEX, TQEM, TQEA)</b>
				<b>Value</b> <b>Meaning</b>
				0 <b>Turquoise Plato™ Order Book (TRQM or TQEM)</b>
				1 <b>Turquoise Lit™ Order Book (TRQX or TQEX)</b>
				4 <b>Turquoise Plato Lit Auctions™ Order Book (TRQA or TQEA)</b>
5 <b>Turquoise NYLON™ Cash Order Book (TRQB)</b>				
Reserved Field 1	66	10	String	Reserved for future use.

#### 7.4.4 Order Mass Cancel Request

Field	Offset	Length	Data Type	Description
Header	MsgType = q (0x71)			
Client Order ID	4	20	String	Participant specified identifier of mass cancel request. It is mandatory to specify this. <b>Only the first 16 bytes are sent to the CCP.</b>

Mass Cancel Type	24	1	Int8	<p>Type of Mass Cancellation</p> <table border="1"> <thead> <tr> <th>Value</th> <th>Meaning</th> </tr> </thead> <tbody> <tr> <td>3</td> <td>All firm orders for an instrument</td> </tr> <tr> <td>4</td> <td>All firm orders in a segment</td> </tr> <tr> <td>7</td> <td>All orders submitted by the CompID</td> </tr> <tr> <td>8</td> <td>All firm orders</td> </tr> <tr> <td>9</td> <td>All orders submitted by the CompID for an instrument</td> </tr> <tr> <td>15</td> <td>All orders submitted by the CompID for a segment</td> </tr> </tbody> </table>	Value	Meaning	3	All firm orders for an instrument	4	All firm orders in a segment	7	All orders submitted by the CompID	8	All firm orders	9	All orders submitted by the CompID for an instrument	15	All orders submitted by the CompID for a segment
Value	Meaning																	
3	All firm orders for an instrument																	
4	All firm orders in a segment																	
7	All orders submitted by the CompID																	
8	All firm orders																	
9	All orders submitted by the CompID for an instrument																	
15	All orders submitted by the CompID for a segment																	
Common Symbol	25	8	String	MTF Common Symbol of the instrument. Required if MassCancelType = 3 or 9. Else this field will be ignored.														
Segment	33	4	String	The segment for which the orders will be cancelled.  Required if MassCancelType = 4 or 15. Else this field will be ignored.														
ReservedField1	37	1	Int8	Reserved for future use.														
TargetBook	38	1	UInt8	<p>Indicates the target book for the order <b>being used by TGHM members (TRQX, TRQM, TRQA) or TGHE members (TQEX, TQEM, TQEA)</b>. Required if MassCancelType = 3 or 9. Else this field will be ignored.</p> <table border="1"> <thead> <tr> <th>Value</th> <th>Meaning</th> </tr> </thead> <tbody> <tr> <td>0</td> <td><b>Turquoise Plato™ Order Book (TRQM or TQEM)</b></td> </tr> <tr> <td>1</td> <td><b>Turquoise Lit™ Order Book (TRQX or TQEX)</b></td> </tr> <tr> <td>4</td> <td><b>Turquoise Plato Lit Auctions™ Order Book (TRQA or TQEA)</b></td> </tr> <tr> <td>5</td> <td><b>Turquoise NYLON™ Cash Order Book (TRQB)</b></td> </tr> </tbody> </table>	Value	Meaning	0	<b>Turquoise Plato™ Order Book (TRQM or TQEM)</b>	1	<b>Turquoise Lit™ Order Book (TRQX or TQEX)</b>	4	<b>Turquoise Plato Lit Auctions™ Order Book (TRQA or TQEA)</b>	5	<b>Turquoise NYLON™ Cash Order Book (TRQB)</b>				
Value	Meaning																	
0	<b>Turquoise Plato™ Order Book (TRQM or TQEM)</b>																	
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5	<b>Turquoise NYLON™ Cash Order Book (TRQB)</b>																	

ReservedField2	39	9	String	Reserved for future use.
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#### 7.4.5 Execution Report

Field	Offset	Length	Data Type	Description										
Header	MsgType = 8 (0x38)													
AppID	4	1	Int8	Partition ID  <table border="1"> <thead> <tr> <th>Value</th> <th>Meaning</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>Partition 1</td> </tr> <tr> <td>2</td> <td>Partition 2</td> </tr> <tr> <td>3</td> <td>Partition 3</td> </tr> <tr> <td>4</td> <td>Partition 4</td> </tr> </tbody> </table>	Value	Meaning	1	Partition 1	2	Partition 2	3	Partition 3	4	Partition 4
Value	Meaning													
1	Partition 1													
2	Partition 2													
3	Partition 3													
4	Partition 4													
Sequence No	5	4	Int32	Sequence number of the message.										
Execution ID	9	12	String	Unique ID of the Execution Report.  Unique across all partitions.										
Client Order ID	21	20	String	Participant specified identifier of the New Order Request, Order Cancel Request, Order Cancel/Replace Request, or Order Mass Cancel Request.										
Order ID	41	12	String	Unique identifier of the order assigned by the matching system. This will be an 11 character base 62 encoded value in ASCII format with an 'O' prefix. After removing the prefix 'O' and converting to an 8 byte binary, this can be mapped exactly to the GTP Order ID. However, please note that the field 'secondary order id' already contains this mapping.										

Exec Type	53	1	Alpha	<p>The reason the Execution Report is being sent.</p> <table border="1"> <thead> <tr> <th>Value</th> <th>Meaning</th> </tr> </thead> <tbody> <tr> <td>0</td> <td>New</td> </tr> <tr> <td>4</td> <td>Cancelled</td> </tr> <tr> <td>5</td> <td>Replaced</td> </tr> <tr> <td>8</td> <td>Rejected</td> </tr> <tr> <td>C</td> <td>Expired</td> </tr> <tr> <td>D</td> <td>Restated</td> </tr> <tr> <td>F</td> <td>Trade</td> </tr> <tr> <td>H</td> <td>Trade Cancel</td> </tr> <tr> <td>L</td> <td>Triggered</td> </tr> </tbody> </table>	Value	Meaning	0	New	4	Cancelled	5	Replaced	8	Rejected	C	Expired	D	Restated	F	Trade	H	Trade Cancel	L	Triggered
Value	Meaning																							
0	New																							
4	Cancelled																							
5	Replaced																							
8	Rejected																							
C	Expired																							
D	Restated																							
F	Trade																							
H	Trade Cancel																							
L	Triggered																							
Execution Report Ref ID	54	12	String	Execution ID of the trade being cancelled or corrected. Populated if ExecType is Trade Cancel.																				
Order Status	66	1	Int8	<p>The status of the order</p> <table border="1"> <thead> <tr> <th>Value</th> <th>Meaning</th> </tr> </thead> <tbody> <tr> <td>0</td> <td>New</td> </tr> <tr> <td>1</td> <td>Partially filled</td> </tr> <tr> <td>2</td> <td>Filled</td> </tr> <tr> <td>4</td> <td>Cancelled</td> </tr> <tr> <td>6</td> <td>Expired</td> </tr> <tr> <td>8</td> <td>Rejected</td> </tr> </tbody> </table>	Value	Meaning	0	New	1	Partially filled	2	Filled	4	Cancelled	6	Expired	8	Rejected						
Value	Meaning																							
0	New																							
1	Partially filled																							
2	Filled																							
4	Cancelled																							
6	Expired																							
8	Rejected																							

Order Reject Code	67	4	Int32	Code specifying the reason for the reject. Populated always if ExecType (150) is Rejected (8) and in certain cases for expirations (ExecType = C).  The value in this field should be disregarded if Exec Type is not Rejected (8) or Expired(C).  Please refer to TQ801 for the Reject Codes and Reasons.						
Executed Price	71	8	Price	Value of this fill. Required if ExecType is Trade.						
Executed Qty	79	4	Int32	Quantity that was executed in this fill.						
Leaves Qty	83	4	Int32	Quantity available for further execution. Will be "0" if Order Status is Filled, Cancelled, Rejected or Expired.						
Waiver Flags	87	1	UInt8	Pre-trade waiver flag. Populated when Execution Type is F or H. <table border="1" data-bbox="651 922 1197 1034"> <thead> <tr> <th>Bit</th> <th>Name</th> <th>Value</th> </tr> </thead> <tbody> <tr> <td>5</td> <td>RFPT (Reference price)</td> <td>0 : No 1 : Yes</td> </tr> </tbody> </table>	Bit	Name	Value	5	RFPT (Reference price)	0 : No 1 : Yes
Bit	Name	Value								
5	RFPT (Reference price)	0 : No 1 : Yes								
Display Qty	88	4	Int32	Maximum quantity that may be displayed.						
Common Symbol	92	8	String	MTF Common Symbol of the instrument.						
Side	100	1	Int8	Side of the order  <table border="1" data-bbox="630 1243 1189 1422"> <thead> <tr> <th>Value</th> <th>Meaning</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>Buy</td> </tr> <tr> <td>2</td> <td>Sell</td> </tr> </tbody> </table>	Value	Meaning	1	Buy	2	Sell
Value	Meaning									
1	Buy									
2	Sell									
Secondary Order ID	101	8	UInt64	GTP Order ID						

Counterparty	109	11	String	<p>If a trade is internalized, the Counterparty will be populated with the user's own Firm ID.</p> <p>If a trade is not cleared, the Counterparty will be populated with Contra Party Firm ID.</p> <p>If a trade is cleared, the Counterparty will be populated with CCP value:</p> <p>ECCP</p> <hr/> <p>LCH</p> <hr/> <p>X-Clear</p> <hr/> <p>LCH SA</p>												
Trade Liquidity Indicator	120	1	Alpha	<p>Whether the order added or removed liquidity.</p> <p>The value in this field should only be considered if the Exec Type is Trade (F) or Trade Cancel (H). For the rest of the exec types, the value in this field should be ignored.</p> <table border="1"> <thead> <tr> <th data-bbox="639 1093 708 1122">Value</th> <th data-bbox="751 1093 847 1122">Meaning</th> </tr> </thead> <tbody> <tr> <td data-bbox="639 1167 655 1189">A</td> <td data-bbox="751 1167 919 1189">Added Liquidity</td> </tr> <tr> <td data-bbox="639 1234 655 1256">R</td> <td data-bbox="751 1234 951 1256">Removed Liquidity</td> </tr> <tr> <td data-bbox="639 1447 655 1469">C</td> <td data-bbox="799 1305 1158 1608"> <ul style="list-style-type: none"> <li>• <b>Turquoise Plato Uncross™</b> in <b>Turquoise Plato™</b> Order Book Execution</li> <li>• <b>Turquoise Plato Lit Auctions™</b> Order Book Execution</li> <li>• <b>Turquoise NYLON™</b> Cash Order Book Execution</li> </ul> </td> </tr> <tr> <td data-bbox="639 1682 655 1704">S</td> <td data-bbox="751 1653 1150 1731"> <b>Turquoise Plato Block Discovery™</b>            Execution - <b>Turquoise Plato Uncross™</b> </td> </tr> <tr> <td data-bbox="639 1794 655 1816">T</td> <td data-bbox="751 1787 1150 1843"> <b>Turquoise Plato Block Discovery™</b>            Execution - Continuous Trading         </td> </tr> </tbody> </table>	Value	Meaning	A	Added Liquidity	R	Removed Liquidity	C	<ul style="list-style-type: none"> <li>• <b>Turquoise Plato Uncross™</b> in <b>Turquoise Plato™</b> Order Book Execution</li> <li>• <b>Turquoise Plato Lit Auctions™</b> Order Book Execution</li> <li>• <b>Turquoise NYLON™</b> Cash Order Book Execution</li> </ul>	S	<b>Turquoise Plato Block Discovery™</b> Execution - <b>Turquoise Plato Uncross™</b>	T	<b>Turquoise Plato Block Discovery™</b> Execution - Continuous Trading
Value	Meaning															
A	Added Liquidity															
R	Removed Liquidity															
C	<ul style="list-style-type: none"> <li>• <b>Turquoise Plato Uncross™</b> in <b>Turquoise Plato™</b> Order Book Execution</li> <li>• <b>Turquoise Plato Lit Auctions™</b> Order Book Execution</li> <li>• <b>Turquoise NYLON™</b> Cash Order Book Execution</li> </ul>															
S	<b>Turquoise Plato Block Discovery™</b> Execution - <b>Turquoise Plato Uncross™</b>															
T	<b>Turquoise Plato Block Discovery™</b> Execution - Continuous Trading															



Trade Match ID	121	8	UInt64	Contains the trade identifier sent on the GTP market data feed. This is also sent to the CCP by converting the number to a 9 character base 36 (G offset) string. To this a 'B/S' prefix should be added. For trade cancellations, this also requires the addition of a '1' character prefix.										
Transact Time	129	8	UInt64	Time the Execution Report was generated.										
Target Book	137	1	UInt8	<p>Indicates the order book <b>being used by TGHL members (TRQX, TRQM, TRQA) or TGHE members (TQEX, TQEM, TQEA)</b> that generated the execution report.</p> <table border="1"> <thead> <tr> <th>Value</th> <th>Meaning</th> </tr> </thead> <tbody> <tr> <td>0</td> <td><b>Turquoise Plato™ Order Book (TRQM or TQEM)</b></td> </tr> <tr> <td>1</td> <td><b>Turquoise Lit™ Order Book (TRQX or TQEX)</b></td> </tr> <tr> <td>4</td> <td><b>Turquoise Plato Lit Auctions™ Order Book (TRQA or TQEA)</b></td> </tr> <tr> <td>5</td> <td><b>Turquoise NYLON™ Cash Order Book (TRQB)</b></td> </tr> </tbody> </table>	Value	Meaning	0	<b>Turquoise Plato™ Order Book (TRQM or TQEM)</b>	1	<b>Turquoise Lit™ Order Book (TRQX or TQEX)</b>	4	<b>Turquoise Plato Lit Auctions™ Order Book (TRQA or TQEA)</b>	5	<b>Turquoise NYLON™ Cash Order Book (TRQB)</b>
Value	Meaning													
0	<b>Turquoise Plato™ Order Book (TRQM or TQEM)</b>													
1	<b>Turquoise Lit™ Order Book (TRQX or TQEX)</b>													
4	<b>Turquoise Plato Lit Auctions™ Order Book (TRQA or TQEA)</b>													
5	<b>Turquoise NYLON™ Cash Order Book (TRQB)</b>													
Type Of Trade	138	1	Int8	<p>Indicates whether the executed portion of a passive order is visible or hidden. All trades in the <b>Turquoise Plato Lit Auctions™</b> Order Book will be stamped with value = 2.</p> <p>Valid only if ExecType (150) = F. Ignore value in all other cases. If ExecType (150) is not = F (Trade), the 2 will be stamped for all ERs.</p> <table border="1"> <thead> <tr> <th>Value</th> <th>Meaning</th> </tr> </thead> <tbody> <tr> <td>0</td> <td>Visible</td> </tr> <tr> <td>1</td> <td>Hidden</td> </tr> <tr> <td>2</td> <td>Not Specified</td> </tr> </tbody> </table>	Value	Meaning	0	Visible	1	Hidden	2	Not Specified		
Value	Meaning													
0	Visible													
1	Hidden													
2	Not Specified													
Capacity	139	1	Int8	<p>Capacity of the order.</p> <table border="1"> <thead> <tr> <th>Value</th> <th>Meaning</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>Matched Principal (MTCH)</td> </tr> <tr> <td>2</td> <td>Dealing on own account (DEAL)</td> </tr> <tr> <td>3</td> <td>Any other trading capacity (AOTC)</td> </tr> </tbody> </table>	Value	Meaning	1	Matched Principal (MTCH)	2	Dealing on own account (DEAL)	3	Any other trading capacity (AOTC)		
Value	Meaning													
1	Matched Principal (MTCH)													
2	Dealing on own account (DEAL)													
3	Any other trading capacity (AOTC)													

Reserved Field 2	140	1	Alpha	Reserved for future use.																
Public Order ID	141	12	String	Maintained by matching engine, will be unique for each replenishment of a particular iceberg order. This will be a 62 base encoded value in ASCII format.																
Minimum Quantity	153	4	Int32	Minimum Fill size. Please reference <a href="#">2.3.1</a> for further description Set to zero if there is no minimum fill size.																
Reputational Score	157	1	Int8	Reputational Score for a BI Participant at the time of the <b>Turquoise Plato Block Discovery™</b> match.																
Last Market	158	1	UInt8	Market (Segment MIC) where execution took place. The value in this field should be disregarded if Exec Type is not Trade (F). <table border="1"> <thead> <tr> <th>Value</th> <th>Meaning</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>TRQX (<b>Turquoise Lit™</b> Order Book)</td> </tr> <tr> <td>2</td> <td>TRQM (<b>Turquoise Plato™</b> Order Book)</td> </tr> <tr> <td>3</td> <td>TRQA (<b>Turquoise Plato Lit Auctions™</b> Order Book)</td> </tr> <tr> <td>4</td> <td>TRQB (<b>Turquoise NYLON™</b> Cash Order Book)</td> </tr> <tr> <td>5</td> <td>TQEX (<b>Turquoise Lit™</b> Order Book (TGHE))</td> </tr> <tr> <td>6</td> <td>TQEM (<b>Turquoise Plato™</b> Order Book (TGHE))</td> </tr> <tr> <td>7</td> <td>TQEA (<b>Turquoise Plato Lit Auctions™</b> Order Book (TGHE))</td> </tr> </tbody> </table>	Value	Meaning	1	TRQX ( <b>Turquoise Lit™</b> Order Book)	2	TRQM ( <b>Turquoise Plato™</b> Order Book)	3	TRQA ( <b>Turquoise Plato Lit Auctions™</b> Order Book)	4	TRQB ( <b>Turquoise NYLON™</b> Cash Order Book)	5	TQEX ( <b>Turquoise Lit™</b> Order Book (TGHE))	6	TQEM ( <b>Turquoise Plato™</b> Order Book (TGHE))	7	TQEA ( <b>Turquoise Plato Lit Auctions™</b> Order Book (TGHE))
Value	Meaning																			
1	TRQX ( <b>Turquoise Lit™</b> Order Book)																			
2	TRQM ( <b>Turquoise Plato™</b> Order Book)																			
3	TRQA ( <b>Turquoise Plato Lit Auctions™</b> Order Book)																			
4	TRQB ( <b>Turquoise NYLON™</b> Cash Order Book)																			
5	TQEX ( <b>Turquoise Lit™</b> Order Book (TGHE))																			
6	TQEM ( <b>Turquoise Plato™</b> Order Book (TGHE))																			
7	TQEA ( <b>Turquoise Plato Lit Auctions™</b> Order Book (TGHE))																			
Peg Price Type	159	1	UInt8	Only applicable to Turquoise <b>Turquoise Plato™</b> Order Book, will be 0 for the <b>Turquoise Lit™</b> , <b>Turquoise Plato Lit Auctions™</b> or <b>Turquoise NYLON™</b> Cash Order Book executions. This field is only relevant when Exec Type = F (Trade). <table border="1"> <thead> <tr> <th>Value</th> <th>Meaning</th> </tr> </thead> <tbody> <tr> <td>0</td> <td>Default (or Midpoint for the <b>Turquoise Plato™</b> Order Book).</td> </tr> <tr> <td>1</td> <td>Closing Price</td> </tr> </tbody> </table>	Value	Meaning	0	Default (or Midpoint for the <b>Turquoise Plato™</b> Order Book).	1	Closing Price										
Value	Meaning																			
0	Default (or Midpoint for the <b>Turquoise Plato™</b> Order Book).																			
1	Closing Price																			
Reserved Field	160	23	String	Reserved for future use.																

### 7.4.6 Order Cancel Reject

Field	Offset	Length	Data Type	Description										
Header	MsgType = 9 (0x39)													
App ID	4	1	Int8	Partition ID  <table border="1"> <thead> <tr> <th>Value</th> <th>Meaning</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>Partition 1</td> </tr> <tr> <td>2</td> <td>Partition 2</td> </tr> <tr> <td>3</td> <td>Partition 3</td> </tr> <tr> <td>4</td> <td>Partition 4</td> </tr> </tbody> </table>	Value	Meaning	1	Partition 1	2	Partition 2	3	Partition 3	4	Partition 4
Value	Meaning													
1	Partition 1													
2	Partition 2													
3	Partition 3													
4	Partition 4													
Sequence No	5	4	Int32	Sequence number of the message.										
Client Order ID	9	20	String	Participant Order ID that was submitted with the order cancel or cancel/replace request being rejected.										
Order ID	29	12	String	Server specified identifier of the order for which the cancel or cancel/replace was submitted.  If the order cancel request cannot be mapped to an active order in the system this field will be populated with "NONE".										
Cancel Reject Reason	41	4	Int32	Code specifying the reason for the reject.										
Transact Time	45	8	UInt64	Time the Order Cancel Reject occurred.										
Reserved Field 1	53	10	String	Reserved for future use.										

### 7.4.7 Order Mass Cancel Report

Field	Offset	Length	Data Type	Description										
Header	MsgType = r (0x72)													
App ID	4	1	Int8	Partition ID  <table border="1"> <thead> <tr> <th>Value</th> <th>Meaning</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>Partition 1</td> </tr> <tr> <td>2</td> <td>Partition 2</td> </tr> <tr> <td>3</td> <td>Partition 3</td> </tr> <tr> <td>4</td> <td>Partition 4</td> </tr> </tbody> </table>	Value	Meaning	1	Partition 1	2	Partition 2	3	Partition 3	4	Partition 4
Value	Meaning													
1	Partition 1													
2	Partition 2													
3	Partition 3													
4	Partition 4													
Sequence No	5	4	Int32	Sequence number of the message.										
Client Order ID	9	20	String	Participant specified identifier of mass cancel request.										
Mass Cancel Response	29	1	Int8	Whether the Mass Cancel Request was accepted or rejected.  <table border="1"> <thead> <tr> <th>Value</th> <th>Meaning</th> </tr> </thead> <tbody> <tr> <td>0</td> <td>Rejected</td> </tr> <tr> <td>7</td> <td>Accepted</td> </tr> </tbody> </table>	Value	Meaning	0	Rejected	7	Accepted				
Value	Meaning													
0	Rejected													
7	Accepted													
Mass Cancel Reject Reason	30	4	Int32	The code that identifies the reason the order mass cancel was rejected.										
Reserved Field 1	34	4	String	Reserved for future use.										
Transact Time	38	8	UInt64	Time the order mass cancel report generated.										

Reserved Field 2	46	10	String	Reserved for future use.
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## 7.5 Application Messages: Others

### 7.5.1 Business Reject

Field	Offset	Length	Data Type	Description												
Header	MsgType = j (0x6A)															
App ID	4	1	Int8	Partition ID  <table border="1"> <thead> <tr> <th>Value</th> <th>Meaning</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>Partition 1</td> </tr> <tr> <td>2</td> <td>Partition 2</td> </tr> <tr> <td>3</td> <td>Partition 3</td> </tr> <tr> <td>4</td> <td>Partition 4</td> </tr> <tr> <td>0</td> <td>System Suspended/Unknown Instrument</td> </tr> </tbody> </table>	Value	Meaning	1	Partition 1	2	Partition 2	3	Partition 3	4	Partition 4	0	System Suspended/Unknown Instrument
Value	Meaning															
1	Partition 1															
2	Partition 2															
3	Partition 3															
4	Partition 4															
0	System Suspended/Unknown Instrument															
Sequence No	5	4	Int32	Sequence number of the message.												
Reject Code	9	4	Int32	Code specifying the reason for the reject.												
Client Order ID	13	20	String	Participant specified identifier of the order.												
Order ID	33	12	String	Unique identifier of the order assigned by the matching system.												
Transact Time	45	8	UInt64	Time the transaction the reject message corresponds to occurred.												
Reserved Field 1	53	10	String	Reserved for future use.												



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## 8.0 Service availability

Customer Activity	Availability
Telnet Access	04:00 - 17:05
Login Access	04:00 - 17:05

## 9.0 Appendix A

### 9.1 Using base-36 encoding to convert Native Trade Match ID to FIX TradeMatchID

#### Converted Examples

Native Trade Match ID/ GTP Trade ID (Decimal number)	FIX TradeMatchID (880) (10-character length base-36 encoded literal)
20888591731720253	00ST83OK1P
11298586755194	GKGMXE9F86
1338498875692	GGXICR4MS8

#### Steps to follow

1. Calculate the remainder (R) and quotient (Q) by dividing the decimal number Native Trade Match ID by 36.
2. Use the mapping table to convert the remainder (R) to base-36 symbol. This will occupy the least significant position in the encoded string.
3. Carry on by repeating steps 1 and 2 with the calculated quotient (Q) of the previous step as the decimal number.
4. Repeat step 3 till the quotient is less than 36, then use the mapping table to convert it to base-36 symbol. This will occupy the most significant position in the encoded string.
5. If the encoded string is less than 10 characters in length, pad the string with symbol 'G' (which is the base-36 equivalent of decimal zero) in front to make the 10-character FIX TradeMatchID.

In the example below the Native TVTIC = 1338498875692 and the encoded FIX TVTIC = GG XICR4MS8 (GG is the padding to make the string length to 10).

Steps	Decimal number	Quotient (Q)	Remainder (R)	Base 36 symbol
1	1338498875692	37180524324	28	8
2	37180524324	1032792342	12	S
3	1032792342	28688676	6	M
4	28688676	796907	24	4
5	796907	22136	11	R
6	22136	614	32	C
7	614	17	2	I
8		17		X

#### Base-36 Mapping Table

0	G	20	0
1	H	21	1
2	I	22	2
3	J	23	3
4	K	24	4
5	L	25	5
6	M	26	6



7	N	27	7
8	O	28	8
9	P	29	9
10	Q	30	A
11	R	31	B
12	S	32	C
13	T	33	D
14	U	34	E
15	V	35	F
16	W		
17	X		
18	Y		
19	Z		

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