

Turquoise Plato Block Discovery™

Trading Service Description

Version 2.27.1c

Updated 10 October 2019



London
Stock Exchange Group

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1.0 About Turquoise

Turquoise Global Holdings Limited¹ (*TGHL* or *Turquoise UK*) is an investment firm authorised and regulated by the Financial Conduct Authority of the United Kingdom. Initially founded in 2006 by a consortium of nine investment banks, TGHL has been majority owned by London Stock Exchange Group (*LSEG*) in partnership with the user community since 2010.

Turquoise Global Holdings Europe B.V. (*TGHE* or *Turquoise Europe* and together with TGHL, *Turquoise*) is an investment firm authorised and regulated by the Autoriteit Financiële Markten (AFM) of the Netherlands. TGHE is a wholly-owned subsidiary of TGHL.

Turquoise operates two Multilateral Trading Facilities (MTF); one by TGHL; and one by TGHE, where TGHL supports the trading of UK, Swiss, US and EEA Financial Instruments, with TGHE supporting the trading of EEA instruments. With a single connection, members of TGHL and TGHE can trade shares, depository receipts, ETFs, ETCs, and European Rights Issues in up to 19 European countries, with an Open Access model that allows members to choose from 4 different CCPs to clear these trades on an interoperable and/or preferred basis.

Membership to TGHL and TGHE is open to eligible firms, with members including banks, brokers, specialist trading firms and retail intermediaries. Sponsored Access and Direct Market Access are available to non-member participants. Turquoise participants benefit from fully risk-managed clearing solutions, and market surveillance to ensure fair and orderly operations.

Turquoise features three types of Order books. **Turquoise Lit™** combines simple limit and iceberg orders with Large In Scale hidden Orders. **Turquoise Plato Lit Auctions™²** are price forming auctions within a Primary Market Best Bid and Offer (PBBO) Reference Price Collar, operating frequently and with pre-trade transparency throughout the trading day, supporting simple limit and PBBO midpoint pegged orders, and allows users to configure Minimum Execution Size. **Turquoise Plato™³** non-displayed midpoint prioritizes orders by size and allows users to configure Minimum Execution Size; it features two distinct mechanisms, each executing at the midpoint of the PBBO: Continuous matching and **Turquoise Plato Uncross™**, an innovation that provides randomised uncrossings during the trading day, ideal for larger and less time sensitive passive orders.

Turquoise Plato Block Discovery™ matches undisclosed Block Indications that execute in **Turquoise Plato Uncross™**, and **Turquoise SwapMatch™** is a neutral arranging mechanism for financial institutions to match block interests in equity total return swaps.

The Turquoise trading platform is hosted in LSEG data-centres and features interfaces common to other LSEG markets, including London Stock Exchange and Borsa Italiana, ensuring that customers accessing other LSEG markets can enjoy access to Turquoise with little incremental cost or effort.

¹ © 2019. Turquoise is a trademark of Turquoise Global Holdings Limited. SwapMatch is a trademark of Turquoise SwapMatch Limited.

² From 23 January 2019, Turquoise rebranded its **Turquoise Lit Auctions™** services as **Turquoise Plato Lit Auctions™**.

³ From 6 September 2016, Turquoise rebranded its non-displayed services as **Turquoise Plato™**. For further details see the press release, <http://www.lseg.com/resources/media-centre/press-releases/plato-partnership-enters-cooperation-agreement-turquoise>.

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2.0 About this Document

The objective of this document is to provide an understanding of the most relevant technical, operational and business features of **Turquoise Plato Block Discovery™**.

This document is not intended to be used as a Technical Specification for the development of any software application.

This document has been written to reflect the introduction of **Turquoise Plato Block Discovery™** as part of the Millennium Exchange platform used by Turquoise.

For any feedback or queries about this document please contact sales@tradeturquoise.com.

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3.0 Change History

Date	Version	Changes
20/10/2014	2.0	Turquoise Block Discovery™ first published version.
24/10/2014	2.1	Updated all references of ITCH to MITCH following rebrand Sections 5.1 and 5.3.5 updated to change contact for Reputational Score breach to Client Support Section 10.2 updated to include Client Support contact details
14/01/2015	2.2	Section 12.2 updated (minor update).
16/01/2015	2.3	Updated the following sections to reflect to upgrade of Millennium Exchange. Changes include: Section 5.3.5.1 updated to reflect Turquoise Uncross™ Only with TIF of GFA is now a valid QBO response Section 9.7 updated to add clarity Section 9.7.1 updated to reflect a change in behaviour Turquoise Uncross™ Only orders with a TIF of GFA and Turquoise Uncross™ Only orders with a TIF of GTD/GTT (which are received between a Call Market and Turquoise Uncross™) Section 10.3 – Updated to reflect change in behaviour for Amendment of Execution Instruction and Turquoise Uncross™ Only orders with a TIF of GFA, which can now <u>not</u> be amended or cancelled Sections 1.0, 4.0, 5.1, 5.4.2, 5.4.6 and 8.2 updated (minor updates).
21/04/2015	2.4	Section 9.8 added and Section 11 updated to introduce optional Member Priority Matching within Turquoise Block Discovery™ .
28/05/2015	2.5	Section 4.0 and 9.7 updated – Turquoise Uncross™ then Continuous definition added. Section 5.3.2 updated adding Turquoise Uncross™ then Continuous as a BDN option. Section 5.4.2 updated Instrument count. Section 9.5 added clarity regarding “Pegged” Order Type. Section 11.0 updated to add clarity regarding Minimum Quantity (MES).

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Date	Version	Changes
12/08/2015	2.6	<p>Section 1.0 updated to reflect number of instruments.</p> <p>Section 4.0 updated to remove MIS term and add MIV and MNV terms.</p> <p>Sections 5.1, 5.3.1 and 5.3.2 updated to reflect change from MIS to MIV for BI validation and addition for MNV for BDNs.</p> <p>Section 5.3.5.1 updated to reflect that the MES of the BI/OSR, not MIS that is checked against the Quantity, plus removal of reference to future enhancement.</p> <p>Section 5.4.4 updated to reflect change from MIS (a shares based validation) to MIV (a value based validation).</p> <p>Section 5.4.5 added to reflect the new MNV validation for BDNs participation in Turquoise Block Discovery™.</p>
05/10/2015	2.7	<p>Sections 1.0 updated to reflect Polish securities can be traded in the Turquoise Lit Book.</p> <p>Section 8.1 updated to delete HUF and CZK.</p>
19/11/2015	2.8	<p>Sections 5.3.5.1, 9.7.1, 10.2, and 10.3 – Updated to reflect change in behaviour for Cancellation of Execution Instruction and Turquoise Uncross™ Only orders or Continuous and Turquoise Uncross™ with a TIF of GFA, which can now <u>be</u> cancelled.</p> <p>Section 5.3.5.2 added to define the Reputational Scoring behaviour for cancelling a QBO and resubmitting a new QBO.</p> <p>Sections 5.2.1, 5.3.5 and 5.3.5.1 updated to reflect a new definition of “marketable” QBO. Participants may now add/change a Limit Price on their QBO such that it becomes less marketable than the BI to which it relates, as long as it stays within the price tolerance set.</p> <p>Section 10.3 updated to reflect Time in Force is not amendable.</p>
26/01/2016	2.9	<p>Section 5.3.5 updated to remove the introduction of a new definition of “marketable” QBO noted in version 2.8 of this document.</p>
04/04/2016	2.10	<p>Sections 5.2.1 and 5.3.3 updated to provide details around the randomness and duration of the Turquoise Uncross™ event after the Call Market has been published.</p> <p>Section 8.1 updated for Maximum Indication Value.</p>
11/07/2016	2.11	<p>Section 1.0 and 4.0 updated to include Turquoise SwapMatch™.</p>
21/07/2016	2.12	<p>Section 10.3 updated to remove reference to primary market hours.</p>

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Date	Version	Changes
06/09/2016	2.13	Updated Turquoise to Turquoise Plato™ where appropriate for Dark Midpoint Order Book and Turquoise Plato™ Block Discovery services, and updated Turquoise to Turquoise where appropriate.
03/10/2016	2.14	Section 5.4.2 updated to reflect introduction of Czech and Hungarian instruments for trading in the Turquoise Plato™ Order Book. Section 5.4.3 updated to reflect the addition of CZK and HUF currencies. Various Sections updated to change terms and reflect that from 6 September 2016, Turquoise rebranded its non-displayed services as Turquoise Plato™ . For further details see the press release, http://www.lseg.com/resources/media-centre/press-releases/plato-partnership-enters-cooperation-agreement-turquoise .
21/11/2016	2.15	Section 5.3.5 updated to reflect the change in Reputational Score methodology, by turning off the Liquidity and Consideration weighting. Section 11 updated to clarify matches starts with the largest BI/BDN on the buy side of the order book.
07/12/2016	2.16	Section 5.4.4 and 8.2 to clarify new or amended Market BIs will be rejected when the PBBO mid-price is unavailable.
08/12/2016	2.17	Section 10.3 updated to reflect behaviour that Valid Till is amendable.
08/02/2017	2.18	Section 5.3.2 updated to clarify how a BDN can be applied to an Order. Section 5.3.5 updated to remove % signs, as Reputational Scores are absolute values.
08/05/2017	2.19	Removed ® from Turquoise throughout the document. Sections 4.0, 5.2, 5.2.1, 5.3.3, 5.3.4, 9.7 updated to reflect the enhancement to the Turquoise Plato Uncross™ event, with the introduction of Continuous matching of BIs and eligible BDNs. Section 5.3.5.2 term updated from Confirmation Interval to Order Submission Interval.
16/05/2017	2.20	Section 5.3.5 updated to reflect increase in OSR response time from 450ms to 500ms.
01/07/2017	2.21	Turquoise Plato Block Discovery™ is now regulated activity by Turquoise, the MTF, so as everything is now an MTF activity, minor updates have been made.

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Date	Version	Changes
03/01/2018	2.22	<p>Branding changes: Turquoise (made non-bold), Turquoise Integrated Order Book, now called Turquoise Lit™ Order Book.</p> <p>Section 1.0 updated with reference to Turquoise Lit Auctions™ Order Book.</p> <p>Section 4.0 updated terms – Security/Securities (Instrument) to Financial Instrument(s), Participant definition, updated MiFID definition, added ESMA, LIS, LIS Waiver, RPW Waiver, Turquoise Lit Auctions™ and MiFIR definitions.</p> <p>Section 5.2 footnote update regarding eligible BDN size when RPW is Allowed and when RPW is <u>not</u> Allowed.</p> <p>Section 4.0, 5.3.3, 9.4 and 9.7.1 updated, along with other sections to change reference from 'Call Market' to 'start of Order Submission Interval' (where appropriate).</p> <p>Sections 5.4.4 and Sections 5.4.5 updated re: Minimum Sizes when RPW is Allowed and is <u>not</u> Allowed.</p> <p>Section 5.4.7 updated to reflect that all BIs/BDNs must have a Limit Price which is a valid Tick.</p> <p>Section 6.0 updated.</p> <p>Section 7.2 updated re: PMP.</p> <p>Section 10.2 updated to reflect Close at 16:30:01 and End of Day 16:30:02.</p> <p>Section 13.0 deleted regarding Test Securities.</p> <p>Section 14.0 onwards re-referenced.</p> <p>Section 14.6 updated, Sections 14.7 and 14.8 added re: Testing/Conformance and GTP.</p> <p>General updates on hyperlinks. Updated reference to surveillance to be consistent as "market surveillance".</p>
09/04/2018	2.23	<p>Section 5.3.5.1 updated to reflect that a QBO's Quantity does not now have to be equal to or greater than MES on the corresponding BI at the time the OSR was sent.</p>
29/05/2018	2.24	<p>Section 8.1 updated Maximum Indication Values to €200m for Turquoise Plato Block Discovery™.</p>
29/05/2018	2.24a	<p>Section 5.3.1 and 5.3.5.1 updated to add footnote to clarify OrderType of 'Pegged' and OrderSubType of 'BI' or 'BDN'</p>
13/07/2018	2.25	<p>Sections 5.3.1, 5.3.2, 5.3.5.1, 9.5 updated to reflect that Order Type of 'Pegged' with Order Sub Type of 'BI' or 'BDN' (including QBOs) is supported via the FIX Trading Gateway.</p> <p>Section 4.0 and 5.3.2 updated to reflect that Participants can default a BDN onto their Orders per UserID (<i>excludes</i> QBOs).</p>
17/09/2018	2.26	<p>Section 1.0 updated to include LCH SA as their 4th CCP.</p>

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Date	Version	Changes
01/11/2018	2.27	New version for the introduction of Turquoise Global Holdings Europe B.V. (TGHE). Section 1.0, 4.0, 5.1, 5.3.2, 5.4.2, 5.4.3, 5.4.4, 5.4.5, 5.4.7, 6.0, 9.7, 9.8, 11.0, 12.3 plus Disclaimer updated to reflect the above.
25/01/2019	2.27.1	Sections 14.5 and 14.6 updated to reflect that the MITCH market data protocol was decommissioned (2018). Updated various sections to reflect Turquoise's rebrand of Turquoise Lit Auctions™ services as Turquoise Plato Lit Auctions™ .
08/04/2019	2.27.1a	Section 5.3.5 updated to reflect the increase in number of events considered in user's Reputational Score calculations from 50 to 100 events.
26/07/2019	2.27.1b	Sections 1.0, 5.4.2, 5.4.4, 5.4.5, 5.4.7 updated to reflect Turquoise plans in the event of a Hard Brexit.
10/10/2019	2.27.1c	Section 1.0 updated to reflect Turquoise Europe (TGHE) will only trade EEA instruments.

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4.0 Terms and Acronyms

Term	Meaning
Block Discovery Notification (BDN)	<p>A BDN is an attribute of an order sub type and corresponds directly to a live Order “typically of block-size” submitted to the Turquoise Plato™ Order Book and is eligible for participation in Turquoise Plato Block Discovery™.</p> <p>Available on an “opt-in” basis to all Turquoise Participants, who wish to access Turquoise Plato™ Block Discovery™.</p> <p>Participants can also ‘opt-in’ to have a BDN added by default onto all their Turquoise Plato™ Orders (per user ID).</p> <p>For further information, please see Section 5.3.1.</p>
Block Indication (BI)	<p>is a non-actionable indication of interest submitted to Turquoise Plato Block Discovery™ (greater in size or equal to the Minimum Indication Size threshold for Turquoise Plato Block Discovery™) that corresponds to a live In-hand Order over which the Participant has full discretion, and can be immediately converted into a firm QBO if a matching opportunity is identified.</p> <p>On identification of a matching opportunity, the BI will be expired automatically.</p> <p>For further information, please see Section 5.3.2.</p>
Call Market	<p>Symbol Status Message sent via market data feeds to notify Turquoise Participants of an impending Turquoise Plato Uncross™ within the Turquoise Plato™ Order Book.</p> <p>For further information, please see Section 5.3.3.</p>
Composite Reputational Score	<p>The Composite Reputational Score is compared against the Reputational Score Threshold in order to determine whether a Participant is permitted to continue using Turquoise Plato Block Discovery™.</p> <p>It is calculated from the individual Event Reputational Scores of instances where a potential match for a BI was identified, an OSR was sent, and whether the Participant sent in a firm QBO.</p> <p>The current Composite Reputational Score is provided to Participants each time they receive an OSR and is persisted from one day to the next.</p>
Continuous and Turquoise Plato Uncross™	<p>An execution instruction selected by the Participant on order entry whereby it’s Order is open to matching during Continuous Trading and any unexecuted volume will rest in the Turquoise Plato™ Order Book open to “Continuous” matching and matching during randomised Turquoise Plato Uncross™ events.</p> <p>Please see Section 9.7.1 which details different behaviour when used with a TIF of GFA around the start of the Order Submission Interval.</p>
EEA	means European Economic Area.
ESMA	means European Securities and Markets Authority.
Event Reputational Score	The Event Reputation Score is calculated for an individual event where a potential match for a BI was identified, and an OSR was sent.
Fill or Kill (FOK)	An Order that is executed immediately in its entirety or expired.
Financial Instrument	<p>means a Financial Instrument eligible for trading on Turquoise in accordance with Section 4 of the Turquoise UK Rule Book and Section 4 of the Turquoise Europe Rule Book.</p> <p><i>A Financial Instrument can also be referred to as an “Instrument” or “Security”.</i></p>

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Term	Meaning
Good for Auction (GFA)	<p>Only applicable to Turquoise Plato™ Order Book.</p> <p>GFA Orders are designed to facilitate participation in a single Turquoise Plato Uncross™. They are expired either after attempting to match during the Turquoise Plato Uncross™ it is scheduled to participate in or at the time of the scheduled Turquoise Plato Uncross™ if the Turquoise Plato Uncross™ fails to happen due to a WFMC failure for example. i.e. a GFA Order can only ever participate in a single Turquoise Plato Uncross™ event.</p> <p>Please see Section 9.4 for details of Turquoise Plato Uncross™ GFA Orders' behaviour around the start of the Order Submission Interval.</p> <p>Not applicable to BIs.</p>
Good Till Date (GTD)	<p>An Order (+ BDN) or BI with Expiry Time will be treated as a Day Order, expiring at the time specified that day or the close of the normal trading day on the day on which it was entered.</p> <p>Applicable on the FIX Trading interface only.</p> <p>Please see Section 9.4 for details of Turquoise Plato Uncross™ GTD Orders' behaviour around the start of the Order Submission Interval.</p>
Good Till Time (GTT)	<p>An Order (+ BDN) or BI with an Expiry Time which will rest passively until executed or until the expiry time (or end of trading day) has been reached.</p> <p>TIF of GTT is used with expiry time in the Native trading interface, whilst TIF of GTD is used with expiry time in the FIX trading interface.</p> <p>Please see Section 9.4 for details of Turquoise Plato Uncross™ GTT Orders' behaviour around the start of the Order Submission Interval.</p>
Immediate or Cancel (IOC)	<p>also referred to as FAK (Fill And Kill). An Order that is executed as far as possible immediately with any remaining part of the Order expired.</p>
In-hand Order	<p>An Order which the Participant has received, which will be submitted immediately on receipt of an OSR to the Turquoise Plato™ Order Book.</p>
Large in Scale (LIS)	<p>means a size of Order as compared to the normal market size for the share or type of share in question and as determined by MiFIR.</p>
Large in Scale (LIS) Waiver	<p>is a waiver used by the Turquoise Plato™ Order Book, which permits Turquoise to support Hidden Orders which are LIS without making them pre-trade transparent to the market.</p>
Market Identifier Codes (MIC)	<p>are ISO10383 codes used by Turquoise to recognise its Business (Operating MIC) and Order Books (Segment MICs) as follows:</p> <p>Operating MICs:</p> <ul style="list-style-type: none"> • Turquoise Global Holdings Limited (TRQX) • Turquoise Global Holdings Europe B.V. (TQEX) <p>Segment MIC for TRQX:</p> <ul style="list-style-type: none"> • Turquoise Plato™ Order Book (TRQM) <p>Segment MIC for TQEX:</p> <ul style="list-style-type: none"> • Turquoise Plato™ Order Book (TQEM)
MiFID	<p>means the Directive 2014/65/EU of the European Parliament and of the Council of 15 May 2014 on markets in financial instruments and amending Directive 2002/92/EC and Directive 2011/61/EU.</p>
MiFIR	<p>means the Regulation (EU) No 600/2014 of the European Parliament and of the Council of 15 May 2014 on markets in financial instruments and amending Regulation (EU) No 648/2012.</p>

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Term	Meaning
Minimum Execution Size (MES)	Minimum Execution Size (single fill match) sent on an Order or BI by Participants as a minimum quantity that is to be matched.
Minimum Indication Value (MIV)	means the value that a BI must be greater than or equal to for it to be accepted into Turquoise Plato Block Discovery™ . MIV is defined on a per Financial Instrument basis (as a value in the Financial Instrument's trading currency).
Minimum Notification Value (MNV)	means the leaves value that a BDN must be greater than or equal to for it to participate in Turquoise Plato Block Discovery™ . MNV is defined on a per Financial Instrument basis (as a value in the Financial Instrument's trading currency).
Multilateral Trading Facility (MTF)	as defined in article 4(1)(15) of MiFID.
Non-displayed Order	An Order that is not displayed to the market.
Order	means an Order to buy or sell a Financial Instrument specified by the Participant.
Order Submission Interval	The Order Submission Interval is a period of time (after the Call Market has been sent), for Participants to send in their Orders to participate in the Turquoise Plato Uncross™ . The Order Submission Interval is set at 500ms (+/- 1ms) for all Financial Instruments.
Order Submission Request (OSR)	A request by Turquoise Plato Block Discovery™ to a Participant to convert their BI into a firm QBO. The OSR contains no information about the size, MES, price or type (e.g. BI, BDN corresponding to a firm Order) or the potential counterparty – but receipt of an OSR implies that a potential match is available for at least the Participant's own MES. For further information, please see Section 5.3.4 .
Order Sub Type	means the subtype of order and includes: Order (for Turquoise Plato™ Order Book) Order (for Turquoise Plato™ Order Book) + BDN (for Turquoise Plato Block Discovery™) BI (for Turquoise Plato Block Discovery™) Orders are received by Turquoise Plato™ . BIs and BDNs are received by Turquoise Plato™ and are used within Turquoise Plato Block Discovery™ .
Qualifying Block Order (QBO)	An Order which qualifies as a valid firm Order for Reputational Scoring purposes sent in response to an OSR, which is intended for participation in Turquoise Plato Uncross™ events. For further information, please see Section 5.3.5.1 .
Participant	A Participant is a user who accesses Trading Services provided by TGHL and/or TGHE. A Participant may also be a Member of TGHL and/or TGHE.
Primary Best Bid and Offer (PBBO)	means the Primary market Best Bid and Offer.
Primary market	means the market on which Turquoise management determines a Financial Instrument has its primary listing.
Primary Midpoint Price (PMP)	means the Primary market Midpoint Price.

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Term	Meaning
Reference Price Waiver (RPW)	is a waiver used by the Turquoise Plato™ Order Book, which permits Turquoise to support trading at the PBBO midpoint when the LIS Waiver is not used. For further information on the RPW and its usage, please see the Turquoise Trading Service Description .
Reputational Score Threshold	Participants who submit BIs must have a Composite Reputational Score greater than the Reputational Score Threshold set by Turquoise for their BI to be accepted, for their BIs to participate in Turquoise Plato Block Discovery™ and to be able to receive OSRs. For further information, please see Section 5.3.5 .
Time in Force (TIF)	Time in Force of an Order, Order + BDN or BI.
Trade	means an agreement between 2 counterparties to Buy/Sell shares in a Financial Instrument at a specific Price.
Trade Liquidity Indicator	advises Participants how their Order impacted liquidity on the Turquoise Lit™ , Turquoise Plato Lit Auctions™ and Turquoise Plato™ Order Books. e.g. Added liquidity, Removed Liquidity etc.
Turquoise Global Holdings Limited (TGHL)	TGHL is majority owned by London Stock Exchange Group (LSEG) in partnership with the user community and operates an MTF trading UK, Swiss and US Financial Instruments. TGHL is also referred to as Turquoise UK.
Turquoise Global Holdings Europe B.V. (TGHE)	TGHE is a wholly-owned subsidiary of TGHL and operates an MTF trading EEA Financial Instruments. <i>It does not support the trading of UK, Swiss or US Financial Instruments.</i> TGHE is also referred to as Turquoise Europe.
Turquoise Plato Lit Auctions™ Order Book	facilitates the trading of non-displayed Limit Orders and/or Pegged Orders to the PMP (with or without a Limit Price as protection) by seeking and identifying matching opportunities, equal to or within a Reference Price Collar (PBBO).
Turquoise Plato Block Discovery™	is a service offered by Turquoise Plato™ to help Participants identify and consummate block matching opportunities in an efficient manner.
Turquoise Plato™ Order Book	means the Order Book containing only non-displayed Orders pegged to the PMP. For further information on the Turquoise Plato™ Order Book, please refer to the Turquoise Trading Service Description .
Turquoise Plato Uncross™	Turquoise Plato Uncross™ events are started either by a random timer or by the continuous matching of Block Indications and eligible Block Discovery Notifications (BDNs), whichever happens sooner. A Turquoise Plato Uncross™ event starts with a Call Market being sent. Participants then have time to submit their Order during the Order Submission Interval. Contra-side Orders resting in the Turquoise Plato™ Order Book (with an appropriate execution instruction) are then considered for matching, at a random time after the Order Submission Interval has elapsed. The execution instruction " Turquoise Plato Uncross™ only" can be selected by Participants on Order entry whereby its Order will only be open to matching against contra-side Orders resting in the Turquoise Plato™ Order Book during the randomised Turquoise Plato Uncross™ events. The execution instruction " Turquoise Plato Uncross™ only" can also be used by Participants on BI (or BDN) entry whereby its BI (or BDN) will only be open to matching against resting contra-side BIs/BDNs in Turquoise Plato Block Discovery™ events.

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Term	Meaning
Turquoise Plato Uncross™ then Continuous	<p>means the execution instruction selected by the Participant on Order entry whereby its Order is not open to matching during continuous trading until it has participated in a Turquoise Plato Uncross™ event which has a valid PMP which has passed Turquoise Plato™ WFMC. Any unexecuted volume will then rest in the Turquoise Plato™ Order Book open to 'Continuous' matching and matching during subsequent randomised 'Turquoise Plato Uncross™' events.</p> <p>Please see Section 9.7.1 which details different behaviour when used with a TIF of GFA around the start of the Order Submission Interval.</p>
Turquoise SwapMatch™	<p>is a neutral arranging mechanism for financial institutions to match block interests in equity total return swaps.</p>
Well Formed Market Checks (WFMC)	<p>are a series of checks performed to check the Primary market reference prices used within the Turquoise Plato™ Order Book and Turquoise Plato Block Discovery™ are well formed.</p> <p>For further information, please see Section 8.2.</p>

For Turquoise UK and Turquoise Europe terms, as defined in the respective Rulebooks, please refer to:

<http://www.lseg.com/markets-products-and-services/our-markets/turquoise/information-centre/document-library>

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5.0 Turquoise Plato Block Discovery™

5.1 Introduction to Turquoise Plato Block Discovery™

Turquoise Plato Block Discovery™ facilitates the trading of larger “Parent” or “Block” Orders by seeking and identifying block matching opportunities, between BIs (with a value above or equal to the MIV threshold) and BDNs (with a value above or equal to the MNV threshold). Where matches are identified, Participants are required to convert their BIs by submitting firm QBOs, designated as eligible for **Turquoise Plato Uncross™** events that exist as part of the **Turquoise Plato™** Order Book to trade at the Midpoint of the PBBO.

The conversion of BIs into firm QBOs is monitored by a system of “Reputational Scoring” and market surveillance which will immediately exclude Participants who do not meet the Reputational Score Threshold. Participants that do not meet the Reputational Score Threshold but want to be re-included must contact Client Support and meet set criteria.

As **Turquoise Plato Block Discovery™** matches are consummated, Participants using the **Turquoise Plato Uncross™** feature of **Turquoise Plato™** Order Book, but not electing to participate in **Turquoise Plato Block Discovery™**, may nonetheless benefit from additional liquidity contributed by those who do participate in **Turquoise Plato Block Discovery™**.

To access **Turquoise Plato Block Discovery™**, individual BIs/BDNs must be submitted with explicit instructions to participate.

It is possible for a customer to access both the existing **Turquoise Plato™** Order Book and **Turquoise Plato Block Discovery™** for a single Order, but this is not the default behaviour. For Orders sent to the **Turquoise Plato™** Order Book that are not explicitly flagged for participation in **Turquoise Plato Block Discovery™**, the characteristics of the current **Turquoise Plato™** Order Book (including matching logic, priority, etc.) do not change.

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5.2 Event Model

Turquoise Plato Block Discovery™ follows the following event model, which is elaborated upon with specific examples below:

Step
1. Participant's submission of BIs and BDNs.
2. When a new or amended, BI or eligible BDN ⁶ is entered, Turquoise Plato Block Discovery™ is prompted to immediately check ⁷ for a match against existing contra BIs and eligible BDNs. Additionally, following any Turquoise Plato Uncross™ or following a reference price change, the system checks to see whether it's possible to match BIs and eligible BDNs to identify possible block trading opportunities.
3. Where potential matches are identified, request Participants to submit firm QBOs to the Turquoise Plato™ Order Book via OSRs.
4. Brief window for Participant's submission of firm QBOs to the Turquoise Plato™ Order Book.
5. Matching of Orders by Turquoise Plato™ Order Book in the Turquoise Plato Uncross™.
6. Composite Reputational score is updated with Event Reputational Score. Participants are advised of their Composite Reputational Score on the next OSR that they receive.

For further information on the **Turquoise Plato Uncross™** event and matching logic, see Section 5.3 of the [Turquoise Trading services Description](#).

⁶ An eligible BDN has a remaining value equal to or greater than 25% of LIS (when RPW is Allowed) or equal to or greater than 100% of LIS (when RPW is not Allowed).

⁷ Note: Between the start of an Order Submission Interval and the relevant **Turquoise Plato Uncross™** event, continuous matching of Block Indications (BIs) and eligible Block Discovery Notifications is paused.

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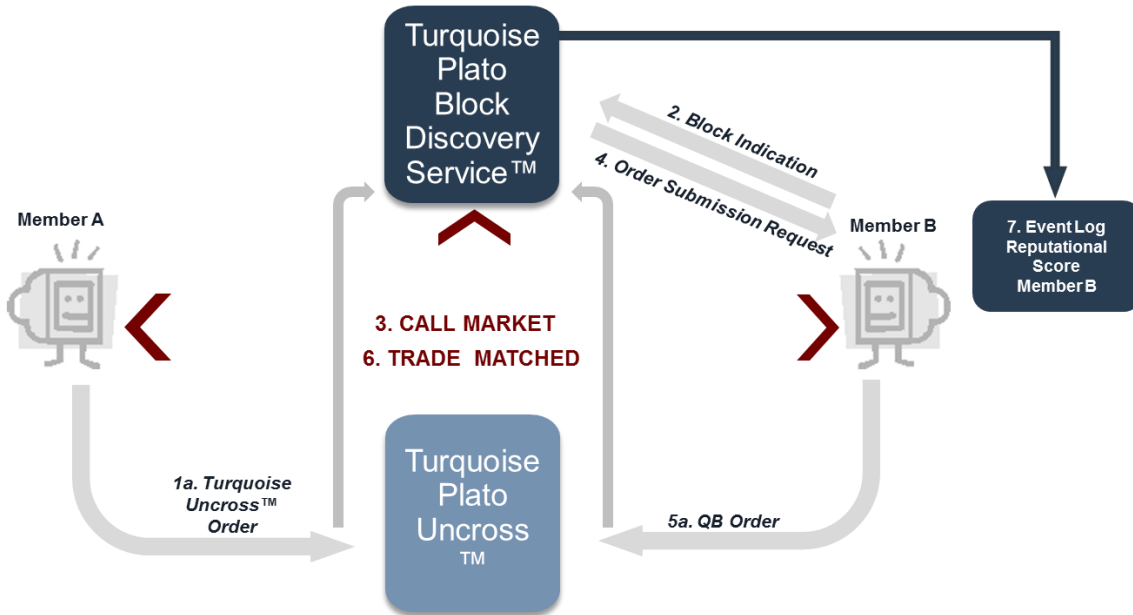
5.2.1. Turquoise Plato Block Discovery™ Event Model – Block Indication

Step	Notes
1. The Participant submits a BI for a conditional In-hand Order	No information sent to any other Participant
2. Upon submission, if the BI (<i>or eligible BDN</i>) matches with a corresponding BI or eligible BDN or at a random time the system checks for matches of BIs and eligible BDNs (which ever comes sooner) a Turquoise Plato Uncross™ cycle begins (dissemination of the “Call Market” message)	Parties submitting BIs that match each receive an OSR (but no details regarding nature of counterparty Order/BI)
Turquoise Plato Block Discovery™ identifies potential matches where the Minimum Execution Size of the Participant’s BI has been met. The counterparty matching opportunity could either be a BDN (corresponding to a firm Order already), or a BI subject to immediate firming-up upon demand.	No information sent to any other Participant.
If a potential match is identified, the Participant is sent an OSR requesting they firm up (submit) their QBO to Turquoise Plato™ and their matched BI will be expired automatically. If the counterparty matching opportunity is also a BI, then the counterparty will also receive an OSR and their matched BI will be expired automatically.	
OSR recipients have up to 500ms (being the Order Submission Interval 500ms (+/- 1ms)) to submit a firm QBO. The QBO must be “marketable” compared to the BI to which it relates. For further information, please see Section 5.3.5.1 .	
After a further random delay of a maximum of 1,500ms (1.5 seconds), the Turquoise Plato Uncross™ takes place. Executions are confirmed, and un-matched residuals of Orders submitted for the single Turquoise Plato Uncross™ only are expired.	Participants receive execution reports. Residuals expire if appropriate.
3. Composite Reputational Scores are updated for each Participant receiving an OSR	For further information of the reputational scoring mechanism, please see Section 5.3.5 .

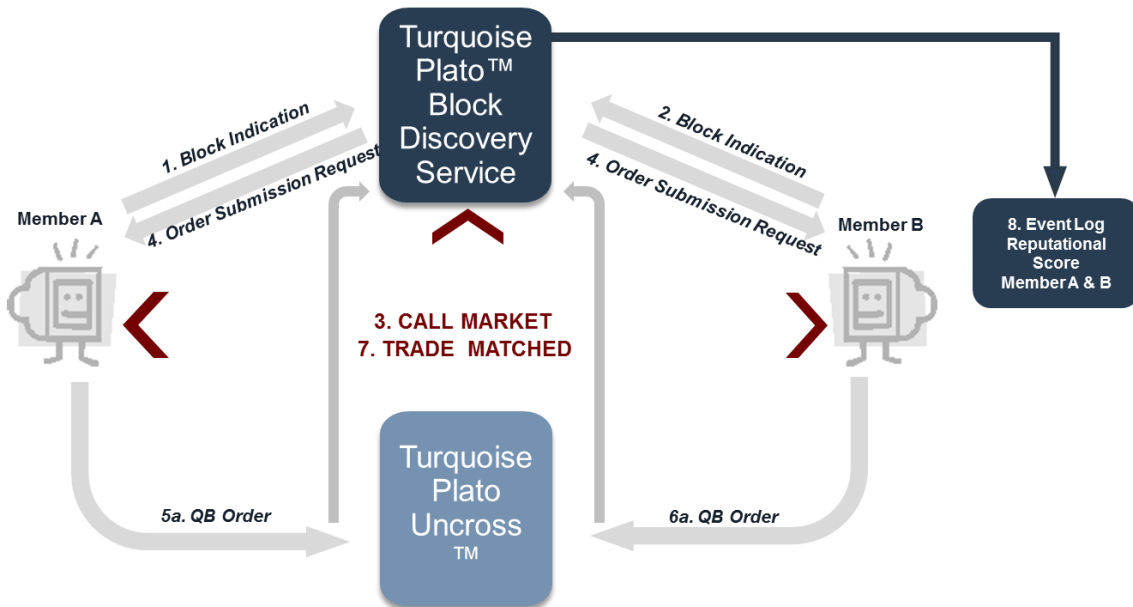
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5.2.2. Turquoise Plato Block Discovery™ Example – Block Discovery Notification vs. Block Indication



5.2.3. Turquoise Plato Block Discovery™ Example – Block Indication vs. Block Indication



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5.3 Key Service Elements

5.3.1 Block Indication (BI)

A block-size indication corresponding to an In-hand Order over which a Participant has full discretion, and can be immediately converted into a firm QBO upon request. A BI typically consists of;

	FIX(Tag)	Native
Order Sub Type of BI "1"	OrderSubType(9020)	OrderSubType
Execution Instruction of "Turquoise Plato Uncross™ Only"	ExecInst(18)	Exec Instruction
Routing Instruction to Turquoise Plato™ Order Book	RoutingInst(9303)	Target Book
Order Type – Limit/Market or Pegged via FIX only ⁸	OrdType(40)	Order Type
Time in Force DAY or GTD/GTT (with Expiry Time)	TimeInForce(59)	TIF
Account Type	AccountType(581)	ClearingAccount
Order Capacity	OrderCapacity(528)	Capacity
Instrument	Symbol(55); or SecurityID(48) SecurityIDSource(22) Currency(15) SecurityExchange(207)	CommonSymbol
Side	Side(54)	Side
Quantity	OrderQty(38)	Order Qty
Limit Price (optional)	Price(44)	Limit Price
Minimum Quantity – MES (optional)	MinQty(110)	Minimum Quantity

The value of a BI must be equal to or greater than the MIV for the Financial Instrument to accepted for matching by **Turquoise Plato Block Discovery™**. Please see [Section 5.4.4](#) for details of the MIV validation.

It is intended that Participant's Orders via algorithmic trading platforms will be able to consistently submit corresponding firm QBOs in a timely fashion.

All BIs will expire automatically at the end of its uncrossing event when an OSR is sent requesting a firm QBO.

⁸ OrderType "Pegged" is only supported via the FIX Trading Gateway

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A BI to firm QBO conversion is subject to Reputational Scoring and market surveillance.

5.3.2 Block Discovery Notification (BDN)

A BDN is intended for use by all **Turquoise Plato Uncross™** Participants. To use a BDN, Participants need to explicitly “opt-in” on a firm Order for **Turquoise Plato Block Discovery™**. Firms can do this by using an “Order + BDN” Order Sub Type.

A BDN corresponds directly to a live Order “typically block-size” submitted to the **Turquoise Plato™** Order Book and eligible for participation in **Turquoise Plato Uncross™** events. A BDN typically consists of;

	FIX(Tag)	Native
Order Sub Type of Order + BDN “3”	OrderSubType(9020)	OrderSubType
Execution Instruction of: “ Turquoise Plato Uncross™ Only” or “Continuous and Turquoise Plato Uncross™ ” or “ Turquoise Plato Uncross™ then Continuous”.	ExecInst(18)	Exec Instruction
Routing Instruction to Turquoise Plato™ Order Book	RoutingInst(9303)	Target Book
Order Type – Limit/Market or <i>Pegged via FIX only⁹</i>	OrdType(40)	Order Type
Passive Time in Force (with Expiry Date/Time as appropriate) i.e. Not IOC or FoK	TimeInForce(59)	TIF
Account Type	AccountType(581)	ClearingAccount
Order Capacity	OrderCapacity(528)	Capacity
Client Order Link ID (Order ID from acknowledgement of the BI or OSR required on all firm QBOs sent in response to an OSR for the purposes of Reputational Scoring)	CIOrdLinkID(583)	CIOrdLinkID
Instrument	Symbol(55); or SecurityID(48) SecurityIDSource(22) Currency(15) SecurityExchange(207)	CommonSymbol

⁹ OrderType “Pegged” is only supported via the FIX Trading Gateway

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	FIX(Tag)	Native
Side	Side(54)	Side
Quantity	OrderQty(38)	Order Qty
Limit Price (optional)	Price(44)	Limit Price
Minimum Quantity – MES (optional)	MinQty(110)	Minimum Quantity

The leaves value of a BDN must be equal to or greater than the MNV for the Financial Instrument to participate in matching in **Turquoise Plato Block Discovery™**. Please see [Section 5.4.5](#) for details of the MNV validation.

A BDN submitted as part of a QBO, is also used by **Turquoise Plato Block Discovery™**, for the purposes of Reputational Scoring. For more details on Reputational Scoring see [Section 5.3.5](#) and on QBOs see [Section 5.3.5.1](#).

TGHL or TGHE Member Firms can elect on a per user basis to add a Block Discovery Notification (BDN) by default applied to their Order (*excluding QBOs*), when they send in an OrderSubType of 'Order'. To change your OrderSubType default a member firm should contact Turquoise Market Operations at London Stock Exchange:

- market.operations@tradeturquoise.com
- +44 (0) 20 7382 7676

5.3.3 Turquoise Plato™ Order Submission Interval and Call Market

At the start of the Order Submission Interval, a Call Market message (a Symbol Status Message) is sent via market data feeds to notify of an impending **Turquoise Plato Uncross™** within the **Turquoise Plato™** Order Book.

An Order Submission Interval of 500ms (+/- 1ms) follows the publication of each Call Market message which provides a period for Participants to send Orders specifically for the next **Turquoise Plato Uncross™**.

At the end of the Order Submission Interval, **Turquoise Plato Uncross™** will uncross and execute orders when possible at a random point during the next 1,500ms (1.5 seconds).

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5.3.4 Order Submission Request (OSR)

Where a **Turquoise Plato Block Discovery™** matching opportunity is identified involving a BI, an OSR (an Execution Report with Exec Type = "L") is sent to the Participant requesting that they firm up their order. The OSR contains no information about the size, MES or Price of the potential counterparty, but receipt of an OSR implies that a potential match is available for at least the Participant's own MES. An OSR will contain the following information:

	FIX(Tag)	Native
Execution Type = L (Triggered)	ExecType(150)	Exec Type
Order Status = 0 (New)	OrdStatus(39)	Order Status
Client Order ID specified by Participant	CIOrdID(11)	Client Order ID
Order ID (This is the same OrderID stamped on BI ack Execution Report, which needs to be sent back in the CIOrdLinkID field as part of a QBO)	OrderID(37)	Order ID
Limit price of the BI unless the BI was unpriced	Price(44)	n/a*
Executed Price – The price at which the BI was matched in Turquoise Plato Block Discovery™	LastPx(31)	Executed Price
Maximum MES of Order to be submitted	MinQty(110)	Minimum Quantity
Size of related BI (has no bearing of the size matched in Turquoise Plato Block Discovery™)	OrderQty(38)	Executed Qty
Financial Instrument of the Order to be submitted	Symbol(55) SecurityID(48) SecurityIDSource(22) Currency(15) SecurityExchange(207)	CommonSymbol
Side of the Order to be submitted	Side(54)	Side
Reputational Score of the Participant (Only on OSRs for matched BIs)	Reputational Score(27012)	Reputational Score
Time the message was generated	TransactTime(60)	Transact Time

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5.3.5 Reputational Scoring

Each Participant using BIs has a Composite Reputational Score (calculated on a per user basis) which is based upon their use of **Turquoise Plato Block Discovery™**. If a user's Composite Reputational Score drops below the specified Reputational Score Threshold at any time, the user will be immediately excluded from further use of the service. This means any new BIs submitted by an excluded user will be rejected, and any BIs already received will be excluded from **Turquoise Plato Block Discovery™** matching, thus being prevented from receiving any OSRs. Users will still be able to submit Orders and Order + BDNs to the **Turquoise Lit™**, **Turquoise Plato Lit Auctions™** and **Turquoise Plato™** Order Books. To be re-introduced to **Turquoise Plato Block Discovery™**, Participants will need to contact Client Support and meet set criteria for the impacted user to be able to use **Turquoise Plato Block Discovery™** again.

The scoring system compares each Order Submission Request (sent by **Turquoise Plato Block Discovery™** to the user if a potential match is identified) to the subsequent submission of a firm QBO.

A Qualifying Block Order must have the characteristics defined in [Section 5.3.5.1](#), be received within the time required (e.g. within 500ms) and be “marketable” compared to the BI to which it relates.

- “marketable” means:
 - In relation to Price,
 - where the BI was a Market Indication (un-priced) and the QBO was a Market Order (un-priced);
 - where the BI had a Limit Price and the QBO was a Market Order (un-priced);
 - where the BI had a Limit Price and the QBO had a Limit Price, the price test will pass if the Limit price of the QBO is equal to or more marketable than the Limit Price of the BI;
 - And where the MES specified on the Order is equal to or lower than the MES on the BI to which it relates.

Failure to send a valid QBO meeting the above criteria results in a zero-score.

- If a valid QBO is submitted, then the score will range from 50 to 100 depending on the size of the QBO relative to the original BI.

Event Reputational Scores relating to each OSR are aggregated into a Composite Reputational Score using the following weighting factor:

- Event Recency
 - The most recent event has a weighting of 100, the next most recent 99, and so on.

The Composite Reputational Score for the respective user is provided to Participants each time they receive an OSR, and is persisted from one day to the next.

Participants are able to cancel a QBO and resubmit a new QBO. For more details on the impact this would have on a participant's reputational score, please see [Section 5.3.5.2](#).

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5.3.5.1 Qualifying Block Order (QBO)

A Qualifying Block Order is a valid firm Order for the purposes of reputational scoring sent in response to an OSR, which is intended for participation in the **Turquoise Plato Uncross™** in the **Turquoise Plato™** Order Book.

The QBO must be “marketable” compared to the BI to which it relates and is expected to have;

	FIX(Tag)	Native
Order Sub Type of Order + BDN “3” ¹⁰	OrderSubType(9020)	OrderSubType
Execution Instruction of “Continuous and Turquoise Plato Uncross™ ” or “ Turquoise Plato Uncross™ Only”	ExecInst(18)	Exec Instruction
Routing Instruction to Turquoise Plato™ Order Book	RoutingInst(9303)	Target Book
Order Type – Limit/Market or Pegged via FIX only ¹¹)	OrdType(40)	Order Type
TIF of GFA	TimeInForce(59)	TIF
Account Type	AccountType(581)	ClearingAccount
Order Capacity	OrderCapacity(528)	Capacity
Client Order Link ID (populated with the Order ID on the corresponding OSR)	ClOrdLinkId(583)	ClOrdLinkId
Financial Instrument	Symbol(55); or SecurityID(48) SecurityIDSource(22) Currency(15) SecurityExchange(207)	CommonSymbol
Side	Side(54)	Side
Quantity	OrderQty(38)	Order Qty
Limit Price (optional - must be “marketable” compared to any Limit Price on the BI to which it relates). See Section 5.3.5 for more information.	Price(44)	Limit Price
Minimum Quantity – MES optional, but must be no higher than any MES on the BI.	MinQty(110)	Minimum Quantity

The QBO is also expected to be received within the Order Submission Interval time (i.e. within 500ms +/-1 ms) starting from the timestamp on the OSR. QBOs are not amendable but can be cancelled.

¹⁰ Note: A BDN cannot be defaulted (added) onto an Order to form a valid QBO

¹¹ OrderType “Pegged” is only supported via the FIX Trading Gateway

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Please see [Section 5.3.5.2](#) for details on the reputational score impact of cancelling a QBO and resubmission of a new QBO. Please see [Section 9.4](#) for details of GFA TIF behaviour.

5.3.5.2 Qualifying Block Order (QBO) Cancellation & Submission of New QBO

Participants are able to cancel any order with the TIF GFA and the execution instruction **Turquoise Plato Uncross™** / Continuous and **Turquoise Plato Uncross™** (also known as a QBO).

If a QBO linked to a BI (i.e. has an Order ID of an OSR generated due to a BI match), is cancelled and resubmitted, the reputational score will be recalculated as follows based on the time the request is received.

	Request received within the Order Submission Interval	Request received after the Order Submission Interval before the immediate Turquoise Plato Uncross™	Request received after the Turquoise Plato Uncross™ (or in a subsequent Order Submission Interval which comes after the next Turquoise Plato Uncross™)
Cancellation Request	<ul style="list-style-type: none"> The cancellation request will be accepted. The event score of the particular event should be made zero (0). The composite reputational score should be re-calculated, making the particular event score zero (0). 		<ul style="list-style-type: none"> The cancellation request will be rejected, since the QBO will not be present in the system anymore. The event score will not be affected.

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<p>Newly submitted QBO (following a cancellation)</p>	<ul style="list-style-type: none"> • The new Order will be accepted. • The event score which was made zero should be amended due to the newly submitted QBO. • The composite reputational score should be re-calculated, based on the new QBO. • If a new QBO is not submitted following the cancellation. The event score which is made zero (0) will remain zero (0). 	<ul style="list-style-type: none"> • The new Order will be accepted. • The event score and composite reputational score should not be re-calculated, based on the new QBO. 	<ul style="list-style-type: none"> • The new Order will be accepted. • The event score and composite reputational score should not be re-calculated, based upon the new QBO.
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5.4 Trading Calendar, Reference Data

5.4.1 Trading Calendar

Turquoise Plato Block Discovery™ uses the same trading calendar as that of Turquoise.

For more information, please see [Section 10.0](#).

5.4.2 Financial Instrument Universe & Symbology

Turquoise Plato Block Discovery™ is available for all Financial Instruments which are tradable in the **Turquoise Plato™** Order Book.

Turquoise Plato™ offers Pan-European and US trading in approximately 4,500 Financial Instruments and ETFs from the following Markets:

TGHL and TGHE support the trading of Financial Instruments in the following markets:

- Austria, Belgium, Czech Republic, Denmark, Finland, France, Germany, Hungary, Ireland, Italy, Netherlands, Norway, Portugal, Spain, Sweden, Switzerland and United Kingdom.

For information, please refer to the [Turquoise Trading Services Description](#).

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5.4.3. Currencies

Trading is supported for the following currencies:

GBX (for clarification, this acronym refers to GBP in pence), EUR, CHF, DKK, NOK, PLN, SEK, USD, CZK and HUF.

TGHL supports billing in GBP and EUR, not in local currencies.

TGHE only supports billing in EUR, again not in local currencies.

For more information, please refer to the [Turquoise Trading Services Description](#).

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5.4.4 Minimum Indication Value (MIV)

An MIV threshold is configured for all Financial Instruments by **Turquoise Plato Block Discovery™**. All BIs must be of a value equal to or greater than the MIV threshold (set as a value in the Financial Instruments trading currency), otherwise they will be rejected.

The MIV for a Financial Instrument is linked to whether an Order in the Financial Instrument can be accepted by the **Turquoise Plato™** Order Book, under the RPW. Where Orders can be accepted under the RPW, the MIV will be set to 25% of LIS. Where Orders cannot be accepted under the RPW, the MIV will be set to 100% of LIS.

The value of a Buy BI is calculated as either:

- **Quantity of BI x Limit Price, where Limit Price is < or = to PBBO Mid-Price***; or
- **Quantity of BI x PBBO mid-price*, where Market BI or where Limit Price is > or = to PBBO Mid-Price***

The value of a Sell BI is calculated as follows:

- **Quantity of BI x Limit Price, where Limit Price is > or = to PBBO Mid-Price***; or
- **Quantity of BI x PBBO mid-price*, where Market BI or where Limit Price is < or = to PBBO Mid-Price***

*Where a PBBO mid-price is unavailable due to WFMC validation, new or amended Market BIs will be rejected, and new or amended Limit BIs will be valued using the BIs Limit Price only.

The MIV threshold of each Financial Instrument is calculated annually and can be derived from daily reference data as published in the following Daily Symbol reference data file:

- TRQX Symbol Reference / TQEX Symbol Reference

The file also includes an indicator as to whether RPW trading is allowed within the **Turquoise Plato™** Order Book. For further information on whether an Order in a Financial Instrument will be accepted under the RPW, [TQ501 – Guide to Reference Data Services](#) defines the Instrument File (YYYYMMDD_TRQX_Instrument.csv for TGHL or YYYYMMDD_TQEX_Instrument.csv for TGHE) which has a field “RPW Allowed”, which is populated with a “Y” when Orders less than the LIS threshold are allowed, and “N” when they are not.

Firms may already be downloading these files or receiving them over night by FTP or SFTP. Alternatively, both of the above files can be downloaded from the Turquoise website by clicking [here](#).

The formula to calculate the MIV of a Financial Instrument (by value) is as follows:

LIS Value x 25% when RPW is Allowed (or LIS Value when RPW is not Allowed)

(Note: The value is always rounded up e.g. to the nearest penny or cent)

The table below summarises where the LIS Value can be found in the Symbol reference files mentioned above:

TRQX Symbol reference or TQEX Symbol reference	
LIS Value (100%)	Min Reserve Order Value

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5.4.5 Minimum Notification Value (MNV)

An MNV threshold is configured for all securities by **Turquoise Plato Block Discovery™**. All BDNs must be of a leaves value equal to or greater than the MNV threshold (set as a value in the Financial Instruments trading currency), otherwise the BDN will not be considered for matching by **Turquoise Plato Block Discovery™**.

The MNV for a Financial Instrument is linked to whether an Order in the Financial Instrument can be accepted by the **Turquoise Plato™** Order Book, under the RPW. Where Orders can be accepted under the RPW, the MIV will be set to 25% of LIS. Where Orders cannot be accepted under the RPW, the MIV will be set to 100% of LIS.

The value of a Buy BDN is calculated as follows:

- **Quantity of BDN x Limit Price, where Limit Price is < or = to PBBO Mid-Price; or**
- **Quantity of BDN x PBBO mid-price, where Market BDN or where Limit Price is > or = to PBBO Mid-Price**

The value of a Sell BDN is calculated as follows:

- **Quantity of BDN x Limit Price, where Limit Price is > or = to PBBO Mid-Price; or**
- **Quantity of BDN x PBBO mid-price, where Market BDN or where Limit Price is < or = to PBBO Mid-Price**

The MNV threshold of each Financial Instrument is calculated annually and can be derived from daily reference data as published in the following Daily Symbol reference data file:

- TRQX Symbol Reference / TQEX Symbol Reference

The file also includes an indicator as to whether RPW trading is allowed within the **Turquoise Plato™** Order Book. For further information on whether an Order in a Financial Instrument will be accepted under the RPW, [TQ501 – Guide to Reference Data Services](#) defines the Instrument File (YYYYMMDD_TRQX_Instrument.csv for TGHL or YYYYMMDD_TQEX_Instrument.csv for TGHE) which has a field “RPW Allowed”, which is populated with a “Y” when Orders less than the LIS threshold are allowed, and “N” when they are not.

Firms may already be downloading these files or receiving them over night by FTP or SFTP. Alternatively, both of the above files can be downloaded from the Turquoise website by clicking [here](#).

The formula to calculate the MNV threshold of a Financial Instrument (by value) is as follows:

LIS Value x 25% when RPW is Allowed (or LIS Value when RPW is not Allowed)

(Note: The value is always rounded up e.g. to the nearest penny or cent)

The table below summarises where the LIS Value can be found in the Symbol reference files mentioned above:

TRQX Symbol reference or TQEX Symbol reference	
LIS Value (100%)	Min Reserve Order Value

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5.4.6 Lot Size

A lot size of one (1) is used for all the Financial Instruments within **Turquoise Plato Block Discovery™**.

5.4.7 Tick Sizes

Turquoise Plato Block Discovery™ (along with the **Turquoise Plato™** Order Book) follows the tick size structure as defined in Section 3.5.1 of [TQ501 – Guide to Reference Data Services](#) and in the Price Tick File (YYMMDD_TRQX_PriceTick.csv for TGHL or YYMMDD_TRQX_PriceTick.csv for TGHE). All Block Indications or Block Discovery Notifications submitted to **Turquoise Plato Block Discovery™** with a Limit Price, must conform to the tick structure defined by ESMA, otherwise they will be rejected.

The **Turquoise Plato™** Order Book may publish trades using half tick sizes (when applicable), as it uses the PBBO midpoint. Management of changes to tick size structures is handled by Turquoise Market Operations. Changes made by Market Operations are subsequently communicated to Participants.

Turquoise advises the specific tick size structure via a daily reference file and on the Turquoise website. Turquoise endeavours to provide a reasonable period of notice prior to implementing any change.

For information, please refer to the [Turquoise Trading Services Description](#).

5.5 Reference Data / Financial Instrument Identification

All messages use the common symbology naming scheme; a string that consists of the Primary market symbol, plus an identifier for the Primary market e.g. “RDSA1” and “RDSAa”. Additionally, Orders submitted via the FIX Trading gateway can use a combination of ISIN, Currency and Primary market MIC to specify the Financial Instrument.

For further information on Reference Data see Turquoise Market Data specification document “[TQ501 – Guide to Reference Data Services](#)”.

For further information on the FIX Trading Gateway refer to the specification document “[TQ201 - Trading Gateway \(FIX 5.0\)](#)”.

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6.0 Turquoise Plato Block Discovery™ Participation & Regulation

All TGHL and TGHE Member's Participants can access **Turquoise Plato Block Discovery™**.

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7.0 Reference Prices

Turquoise Plato Block Discovery™ uses reference prices derived from the Primary market's Best Bid and Offer prices to determine potential matches between BIs and BDNs.

7.1 Primary market Best Bid and Offer (PBBO)

The PBBO is defined as the Best Bid and Offer prices as represented by visible Orders in the Primary market Order Book when that market is in Continuous Trading.

If there are no Orders in the relevant Primary market Order Book, or if the Primary market is not in Continuous trading the PBBO is deemed to be undefined.

7.2 Primary market Midpoint Price (PMP)

The PMP is defined as the average of the two PBBO prices. When the Primary market is locked / crossed the PMP is undefined.

Turquoise derives the price of the Financial Instrument from the trading venue where that Financial Instrument was first admitted to trading (i.e. the primary market). Alternatively, in certain cases, Turquoise may choose to derive the price using the most relevant market in terms of liquidity as permitted by ESMA.

The PMP can have values with half-tick increments where there are an odd number of ticks between the PBBO prices. When the PBBO is undefined the PMP is also deemed to be undefined.

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8.0 Price, Value and Market Checks

8.1 Maximum Indication Value

A "Maximum Indication Value" will be specified by Turquoise to ensure that a Participant does not commit to an excessively large execution erroneously. **Turquoise Plato Block Discovery™** BIs and BDNs in excess of the specified Maximum Indication Value will be rejected. The same validation "Maximum Order Value" equally applies to Orders.

	Max BI Value (Local Currency)	Approx Max BI Value in Euro (€)
CCY	<i>Turquoise Plato Block Discovery™</i>	<i>Turquoise Plato Block Discovery™</i>
CHF	200,000,000	171,000,000
CZK	5,000,000,000	196,000,000
DKK	1,500,000,000	201,000,000
EUR	200,000,000	200,000,000
GBX	20,000,000,000	225,000,000
HUF	20,000,000,000	64,000,000
NOK	2,000,000,000	203,000,000
PLN	n/a	n/a
SEK	2,000,000,000	203,000,000
USD	200,000,000	167,000,000

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8.2 Well Formed Market Checks

Turquoise Plato™ will carry out Well Formed Market Checks (WFMC) validation upon receipt of PBBO updates and Primary market status updates to determine if the PMP is valid.

If the WFMC fails for a particular Financial Instrument, the market for that Financial Instrument is deemed not well formed, resulting in matches of BIs and BDNs not being permitted. i.e. No OSRs are sent. This is in addition to matches of firm Orders in the **Turquoise Plato™** Order Book not being permitted. i.e. No Trades will occur. Additionally, no new or amended Market BIs are accepted.

The WFMC will fail if any of the following is true:

- The Market Feed for the Primary market data is flagged as “stale”
- The Primary market data is not available
- The Primary market symbol does not have a valid PBBO spread; i.e.
 - If either or both the Primary market Bid and/or Offer don't exist, or
 - Either or both the Primary market Bid and/or Offer is equal to 0
- The PBBO spread is greater than a defined Maximum Spread threshold or lesser than the Minimum Spread threshold for the specific Financial Instrument as defined by Turquoise

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9.0 Turquoise Order Types

This section defines the various types of BIs and Orders + BDNs that are supported by Turquoise in terms of the key attributes that determines their behaviour and handling:

- Order Sub Type
- Target Book
- Display Quantity
- Duration (Time in Force)
- Price
- Size (including Minimum Quantity)
- Execution Instruction

9.1 Order Sub Type

On BI/Order entry a Participant can specify 3 different “Types of Order”, as detailed below:

- Order
- Order + BDN
- BI

Orders are received by **Turquoise Plato™**.

BIs and BDNs are received by **Turquoise Plato Block Discovery™**.

9.2 Target Book

To access **Turquoise Plato Block Discovery™**, Participants are required to specify the **Turquoise Plato™** Order Book as their Target Book, so that their BIs and BDNs are routed to **Turquoise Plato Block Discovery™** and Orders are routed to **Turquoise Plato™** Order Book.

This is mandatory for BIs and Orders + BDNs submitted via the Native and FIX Gateways.

9.3 Display Quantity

Display Quantity must always be zero, for BIs and Orders + BDNs.

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9.4 Duration (Time in Force)

Below is a list of the durations that **Turquoise Plato™** supports for BIs and Orders + BDNs based on their maximum life expectancy in the **Turquoise Plato™** Order Book (from shorter to longer).

GFA	<p>Only applicable to Turquoise Plato™ Order Book.</p> <p>GFA Orders are intended to take part in the Turquoise Plato Uncross™. They are expired either after attempting to match during the Turquoise Plato Uncross™ it is scheduled to participate in or at the time of the scheduled Turquoise Plato Uncross™ if the Turquoise Plato Uncross™ fails to happen due to a WFMC failure for example.</p> <p>Please see Section 9.7.1 for details of Turquoise Plato Uncross™ GFA Orders' behaviour around the start of the Order Submission Interval.</p> <p>Not applicable to BIs.</p>
Good Till Time (GTT)	<p>An Order (plus BDN) or BI with an Expiry Time which will rest passively until executed or until the expiry time (or end of trading day) has been reached.</p> <p>Applicable on the Native Trading interface only.</p> <p>Please see Section 9.7.1 for details of Turquoise Plato Uncross™ GTT Orders' behaviour around the start of the Order Submission Interval.</p>
Good Till Date (GTD) + Expiry Time	<p>An Order (plus BDN) or BI with Expiry Time will be treated as a Day Order, expiring at the time specified that day or the close of the normal trading day on the day on which it was entered.</p> <p>Applicable on the FIX Trading interface only.</p> <p>Please see Section 9.7.1 for details of Turquoise Plato Uncross™ GTD Orders' behaviour around the start of the Order Submission Interval.</p>
Day	<p>A Day Order (plus BDN) or BI is valid until close of the normal trading day on the day on which it was entered. The close of the normal trading day is 16:30 UK Time 17:30 CET.</p>

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9.5 Price

Market	<p>The BI / Order + BDN does not have a specified Limit Price.</p> <p>For the purposes of Turquoise Plato Block Discovery™, a Market BI / Order + BDN can only be persistent.</p> <p>BIs must have a duration qualifier of Day, GTT or GTD (with Expiry Time where appropriate), so that they persist.</p> <p>Orders + BDNs can have a duration qualifier of Day, GTT, GTD (with Expiry Time where appropriate) or GFA so that they persist. It is also possible to submit a non-persistent duration qualifier of IOC, FOK, however the addition of the BDN is ignored and they are treated as an aggressive Order.</p> <p>Market Orders are interpreted as Midpoint Pegged Orders without a Peg Cap.</p>
Limit	<p>The BI / Order + BDN will be matched / executed against any BI / Order + BDN in the opposite side of the book at a price that will never be worse than its Limit.</p> <p>For the purposes of Turquoise Plato Block Discovery™, a Limit BI / Order + BDN can only be persistent.</p> <p>BIs must have a duration qualifier of Day, GTT or GTD (with Expiry Time where appropriate), so that they persist.</p> <p>Orders + BDNs can have a duration qualifier of Day, GTT, GTD (with Expiry Time where appropriate) or GFA so that they persist. It is also possible to submit a non-persistent duration qualifier of IOC, FOK, however the addition of the BDN is ignored and they are treated as an aggressive Order.</p> <p>Limit Prices must be set in whole ticks for BIs / Orders + BDNs.</p>
Pegged	<p>Turquoise Plato™ only supports Pegged BIs / Orders + BDNs that are pegged to the PMP. Pegged BIs / Orders + BDNs may have a Limit Price (aka Peg Cap). Whilst the PMP is worse than the Limit Price, the BI / Order + BDN will be excluded from matching.</p> <p>Note: For the purposes of Turquoise Plato Block Discovery™ the Order Type "Pegged" is only supported via the FIX Trading Gateway.</p>

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9.6 Size

MES (Minimum Execution Size)	<p>Turquoise Plato™ supports MES on BIs and Orders + BDNs in the Turquoise Plato™ Order Book and Turquoise Plato Block Discovery™.</p> <p>Each individual match/fill will be equal to or greater than the specified MES.</p> <p>Participants can specify (per User) whether MES will apply to the first execution only or to persist for the lifetime of the order (default for persistent Orders). To change your Minimum Quantity default a TGHL or TGHE Member Firm should contact Turquoise Market Operations at London Stock Exchange:</p> <ul style="list-style-type: none"> • market.operations@tradeturquoise.com • +44 (0) 20 7382 7676 <p>When a MES order is partially filled, if the remaining quantity is below the MES initially set then the MES value is set to the remaining Order quantity.</p>
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9.7 Execution Instruction

This attribute is relevant to **Turquoise Plato Block Discovery™** and the **Turquoise Plato™** Order Book. The Execution Instruction of a BI / Order + BDN should be selected on entry from one of the options below:

Execution Instruction	Description
Turquoise Plato Uncross™ Only	Persistent BIs / Orders + BDNs can be submitted at any time during Normal Trading. They will be open to matching against contra-side persistent BIs / Orders + BDNs in their respective Order Book upon submission ¹² and during the randomised Turquoise Plato Uncross™ events.
Turquoise Plato Uncross™ then Continuous	Orders + BDNs submitted are not open to matching during continuous Trading until it has participated in a Turquoise Plato Uncross™ event which has a valid PMP which has passed Turquoise Plato™ WFMC. Any unexecuted volume will then rest in the Turquoise Plato™ Order Book open to 'Continuous' matching and matching during subsequent randomised ' Turquoise Plato Uncross™ ' events.
Continuous and Turquoise Plato Uncross™	Orders + BDNs submitted will be open to immediate execution against contra persistent Orders + BDNs during Normal Trading and any unexecuted volume and will rest on the book, open to Continuous matching and matching during the randomised Turquoise Plato Uncross™ events.

¹² Note: Between the start of an Order Submission Interval and the relevant **Turquoise Plato Uncross™** event, continuous matching of Block Indications (BIs) and eligible Block Discovery Notifications is paused.

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The Execution Instruction attribute is only applicable to Day, GFA, GTT and GTD Orders.

Please see [Section 9.7.1](#) for details of specific Orders' behaviour around the start of the Order Submission Interval.

* TGH and/or TGHE Member Firms can elect on a per user basis to change the default Execution Instruction applied to their BI / Order + BDN when omitted to **Turquoise Plato Uncross™** Only. To change your Execution Instruction default a Participant should contact Turquoise Market Operations:

- market.operations@tradeturquoise.com
- +44 (0)20 7382 7676

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9.7.1. Behaviour of an Order's TIF and Execution Instruction around the start of the Order Submission Interval within the Turquoise Plato™ Order Book

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 start of the next 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 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 Uncross™
GFA – Continuous and Turquoise Plato Uncross™	Acts as an IOC Order in Continuous trading with any remainder expired. Orders are not amendable but can be cancelled.	The Order will not participate during Continuous trading and will wait to take part in the next immediate Turquoise Plato Uncross™ . Any remainder will be expired after the Turquoise Plato Uncross™ . Orders are not amendable but can be cancelled.
GFA – Turquoise Plato Uncross™ Only	The Order will be immediately expired. Orders are not amendable but can be cancelled.	The Order will take part in the next immediate Turquoise Plato Uncross™ . Any remainder will be expired after the Turquoise Plato Uncross™ . Orders are not amendable but can be cancelled.
GFA – Turquoise Plato Uncross™ then Continuous	The Order will not participate during Continuous trading and will wait to take part in the next immediate Turquoise Plato Uncross™ . Any remainder will be expired after the Turquoise Plato Uncross™ . Orders are amendable and can be cancelled.	
GTT or GTD + Expiry Time – Turquoise Plato Uncross™ Only	The Order will take part in the next immediate Turquoise Plato Uncross™ . If the Order's expiry time elapses before participation in any Turquoise Plato Uncross™ it will be expired immediately. Any remainder will persist, participating in subsequent Turquoise Plato Uncross™ events until the Order's expiry time is reached. Orders are amendable and can be cancelled.	

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9.8 Member Priority Matching within Turquoise Plato Block Discovery™ (Optional)

TGHL and TGHE Member Firms that wish to increase the probability of matching with themselves within **Turquoise Plato Block Discovery™** are now able to do so by registering their firm for Member Priority Matching. Should a TGHL and TGHE Member Firm 'opt in' to Member Priority Matching within **Turquoise Plato Block Discovery™**, this functionality will apply to all of its Native UserIDs and FIX ComplIDs.

Once enabled, BIs / BDNs from TGHL and TGHE Member Firms that have 'opted in' to Member Priority Matching when selected for matching will first attempt to match against their Member Firm's own Orders before attempting to match any remaining quantity with BIs / BDNs from other Firms on a Size/Time priority basis. During **Turquoise Plato Block Discovery™** events, the following logic applies:

1. The largest BI / BDN on the BUY side of the **Turquoise Plato Block Discovery™** Book is always selected first for matching.
 - a. If the Member that has input the largest BI / BDN on the BUY side of the order book has 'opted in' to Member Priority Matching, the matching engine first looks to match against SELL BIs / BDNs from that Member on a Size / Time basis. If there is any remaining quantity unexecuted from this BUY order, the matching engine will attempt to complete the order by matching against any remaining SELL orders on a Size / Time priority basis.
 - b. If the Member that has input the largest BI / BDN on the BUY side of the book has not 'opted in' to Member Priority Matching, the matching engine looks to match against SELL BIs / BDNs on a Size / Time basis, irrespective of which Members have submitted these BIs / BDNs.
2. Once the largest BI / BDN on the BUY side has been completely assessed for matching with corresponding SELL BIs / BDNs, the matching engine will select the next largest BUY BI / BDN and repeat the process outlined in 1a or 1b as appropriate.

When a TGHL or TGHE Member Firm opts in, Member Priority Matching will equally apply to **Turquoise Plato Uncross™** events in the **Turquoise Plato™** Order Book in the same way it does for **Turquoise Plato Block Discovery™** events. For more details on Member Priority Matching within the **Turquoise Plato™** Order Book, see Section 9.10 of the [Turquoise Trading Service Description](#).

To opt into Member Priority Matching a Member Firm of TGHL or TGHE should contact the Technical Account Management team:

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

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10.0 Trading at Turquoise

10.1 Trading Calendar

Turquoise typically observes the domestic market practice for open business days. Therefore, where the Primary market of a Financial Instrument is closed on a business day, **Turquoise Plato Block Discovery™** will also be closed for that Market (for example, OMX Oslo is closed on the 24th December so **Turquoise Plato Block Discovery™** is also closed on that day for the Norwegian Market).

Where there is cause for doubt a Market Notice is sent out to Participants for clarification and Participants should request to be added to Turquoise Market Notices distribution list. The up-to-date Turquoise Trading Calendar can also found on the [Turquoise website](#).

10.2 Trading Sessions and Support

Each of the trading days within Turquoise is divided into the sessions shown in the following table and diagram. The following will apply to the **Turquoise Plato™** Order Book and for **Turquoise Plato Block Discovery™**.

Daily Trading Schedule

Time	Session Name	Order Book Type	Summary
04:31 – 07:59:59	System Start-up	Turquoise Plato™ / Turquoise Plato Block Discovery™	System connectivity allowed. No BI / Order + BDN entry allowed.
08:00-16:30	Normal Trading	Turquoise Plato™ / Turquoise Plato Block Discovery™	BI / Order + BDN entry allowed for all Financial Instruments. All BI / Order + BDN constraints enforced. Price and Value Checks enforced. Price Band Validation and Execution Limit Enforced. Continuous and Turquoise Plato Uncross™ matching in the Turquoise Plato™ Order Book
Ad-Hoc	Trading Halt	Turquoise Plato™ / Turquoise Plato Block Discovery™	No Matching allowed. No BI / Order + BDN entry allowed. Cancellation of BIs / Orders + BDNs is permitted but amendments are not.

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Time	Session Name	Order Book Type	Summary
16:30:01	Close	Turquoise Plato™ / Turquoise Plato Block Discovery™	No BI / Order + BDN management. No matching.
16:30:02	End of Day	Turquoise Plato™ / Turquoise Plato Block Discovery™	Persistent BIs / Orders + BDNs are cancelled.
17:00	End Of Day (CCPs)	Turquoise Plato™	End Of Day Syncing with all CCPs.
17:05	System shutdown Start of end-of- day processes	Turquoise Plato™ / Turquoise Plato Block Discovery™	No access for market Participants.

Client Support

Hours: 24x7

Telephone: +44 (0)20 7797 1500

Email: support@lseg.com

Market Operations

Hours: 07:15 – 17:15 (London Time)

Telephone: +44 (0)20 7382 7676

Email: market.operations@tradeturquoise.com

Service Description

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Technical Account Management

Hours: 07:30 – 18:00 (London Time)

Telephone: +44 (0)20 7797 3939

Email: londontam@lseg.com

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10.3 Block Indication / Order + Block Discovery Notification Amendment and Cancellation during Trading Sessions

Amendments to BIs are allowed at any time that the system accepts BIs.

Not all fields are amendable by Participants, and some amendments may cause the Size/Time priority of an BI / Order + BDN to be re-set. As a general rule, if the amendment makes the BI / Order + BDN more executable the time priority will not be re-set.

For example, changing the “Valid Till” of a BI will not re-set the time priority.

Below is a summary of the main Order attributes and their amendment capabilities. Please note there is one exception stated below:

Book	Buy/Sell	Target Book	Symbol	Order Type	Price	Qty		MinQty MES		Valid Till	Exec Inst	Client Ref
						+	-	+	-			
Turquoise Plato™ Midpoint *	×	×	×	×	↓	↑	↓	↓	↓	✓	↓	✓
Turquoise Plato Block Discovery™	×	×	×	×	↓	↑	↓	↓	↓	✓	↓	✓

✓ Change allowed without affecting Size/Time priority

↑ Change allowed, increase in Size may improve Size/Time priority based on amended Order quantity

↓ Change allowed, decrease in Size may reduce Size/Time priority based on amended Order quantity

× Change not allowed, order must be cancelled and re-entered

* Orders and Orders + BDNs which have a TIF of GFA with an Execution Instruction of “Continuous and **Turquoise Plato Uncross™**” or “**Turquoise Plato Uncross™ Only**” are not amendable but can be cancelled. Any unfilled Quantity will automatically expire at the end of the randomised **Turquoise Plato Uncross™** for which the Order was intended to participate (or will act as an IOC “match and expire if not fully filled” in Continuous Trading if submitted between a **Turquoise Plato Uncross™** and start of an Order Submission Interval).

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Additionally, BIs / Orders + BDNs are cancelled by the system in the following circumstances:

- A BI / Order + BDN has reached its expiration as set by the Participant.
- A BI which has been matched will then be expired automatically.
- At market close (including Day and GTD/GTT with Time Expiry Order).
- A Participant disconnects from the trading gateway, if the Cancel-on-Disconnect feature is specified by the Participant or is mandatory as part of the interface being used.
- Turquoise Market Operations (MOPS) may in certain circumstances, including if requested by a Participant, intervene and cancel BIs / Orders + BDNs.
- If a Participant enters a Mass Cancellation, all BIs / Orders + BDNs within the same Trader Group are cancelled from a single FIX session (FIX specific).

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11.0 Matching Priority

BIs / BDNs with larger sizes will be given higher priority than BIs / BDNs of smaller sizes. Matching starts with the largest BI/BDN on the buy side of the book. Partial filling of a BDN will not result in the BDN losing its priority. BIs are expired automatically after a match.

Where two BIs / BDNs share the same Size priority, Time priority will then apply. Time priority is assigned at the point of entry and may be updated when the BI / BDN is modified (only for certain modification types).

If the Limit Price precludes a BI / BDN matching at the prevailing PMP, the Limit BI / BDN will retain its queue priority, but will be prevented from matching whilst the prevailing PMP is beyond the specified Limit.

For TGHL or TGHE Firms that opt into Member Priority Matching, once their BI / BDN has been selected for matching within **Turquoise Plato Block Discovery™**, an attempt to match against their own BIs / BDNs first will be made, before attempting to match any remaining quantity with BIs / BDNs from other Firms on a Size/Time priority basis. See [Section 9.8](#) for details of Member Priority Matching for **Turquoise Plato Block Discovery™**.

Size constraints (MES): Applies to all BIs / BDNs with Minimum Quantity specified.

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12.0 Trading Halts

Trading Halts are controlled by Turquoise Market Operations and will apply to Financial Instruments being matched within **Turquoise Plato Block Discovery™**. A Trading Halt may be followed by resumption of the Normal Trading session if the market is not closed before Market Operations deems a Financial Instrument tradable.

12.1 Within Turquoise

In response to information within Turquoise, Market Operations can halt Financial Instruments immediately via an ad-hoc change to a Financial Instrument's Trading Status.

12.2 Within Primary markets

Turquoise will ascertain from a Primary market's feed or a regulatory request whether a Trading Suspension/Halt was based on regulatory reasons, a volatility break or a technical fault and may halt a Financial Instrument if it considers there may be a dis-orderly market.

12.3 Impact of a Trading Halt

If a Trading Halt is enforced by Turquoise Market Operations, the matching within **Turquoise Plato Block Discovery™** for the Financial Instrument halted will be affected as follows:

- Existing BIs / Orders + BDNs will remain in their respective Books.
- New BIs / Orders + BDNs will be rejected, with appropriate error message.
- TGHL and TGHE Members will be able to cancel their BIs / Orders + BDNs, but no BI / Order + BDN amendment will be permitted.
- No matching will occur (updates to the PMP affecting the set of BIs / Orders + BDNs available for matching in **Turquoise Plato Block Discovery™** book will not result in any matches).

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13.0 Tariff Model

All executions take place in the **Turquoise Plato™** Order Book. For up-to-date tariff information, please refer to the [Tariff Schedule](#) document located on the Turquoise website.

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14.0 Interfaces and Information Dissemination

Turquoise provides gateways to enter BIs / Orders + BDNs into the trading system, receive market data, send trade reports, download own order and trade information.

The interfaces used for **Turquoise Plato Block Discovery™** are the same as those used by **Turquoise Plato™** for access to the **Turquoise Plato™** Order Book.

14.1 Native Trading Gateway

The Native trading gateway provides a low latency trading interface which allows Participants to send and manage BIs / Orders + BDN on the trading system. The interface enables Participants to perform the following activities:

- i) Submit an BI / Order + BDN
- ii) Cancel an BI / Order + BDN
- iii) Mass Cancel BIs / Order + BDNs
- iv) Cancel/Replace an BI / Order + BDN

The Native Trading Gateway uses a proprietary interface referred to as the Native interface. The Native interface consists of two channels. A Real-Time channel that provides the main order management functionality and a Recovery channel that allows Participants to subscribe to missed messages due to a disconnection from the Real-Time channel.

14.2 FIX Trading Gateway

The FIX trading gateway allows Participants to send and manage orders on the trading system. The interface enables Participants to perform the activities outlined below.

- i) Submit a BI / Order + BDN
- ii) Cancel a BI / Order + BDN
- iii) Mass Cancel BIs / Orders + BDNs
- iv) Cancel/Replace a BI / Order + BDN

The FIX Trading Gateway uses the FIX 5.0 SP2 protocol.

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14.3 FIX Drop Copy Gateway

Turquoise provides a gateway to receive additional copies of Execution Reports generated by the trading system. This will include Execution Reports generated as a result of using **Turquoise Plato Block Discovery™**. This gateway may also be used by Participants to download the current status of all their active BIs / Orders + BDNs in the event of a failure. The drop copy service cannot be used to submit BIs / Orders + BDNs or receive market data. The drop copy gateway uses the FIX 5.0 SP2 protocol.

14.4 FIX Post Trade Gateway

Turquoise provides a FIX post trade gateway that permits Participants to perform the activities outlined below:

- i) Receive real-time updates on executed non-displayed Midpoint Trades
- ii) Receive information on executed Trades via a query-based service to facilitate a recovery after a failure.

The entry of BIs / Orders + BDNs is not supported by the post trade gateway. The post trade gateway uses the FIX 5.0 SP2 protocol.

14.5 Market Data Gateway

No market data regarding BIs or Orders + BDNs is disseminated for **Turquoise Plato Block Discovery™**.

The Market Data gateway provides a stream of fixed width binary messages which provides the following real-time information:

- i) Price and volume for each executed on-book trade for the **Turquoise Plato™** Order Book.
- ii) Trading status of each Financial Instrument.
- iii) Call Market message to notify Participants of a **Turquoise Plato Uncross™** event in the **Turquoise Plato™** Order Book.

The feed also includes a daily download of the Financial Instrument list of **Turquoise** (Symbol Directory).

For further information on Turquoise Market Data, see [Section 14.8](#).

14.6 Detailed information regarding interfacing and information dissemination

For further information regarding interfacing with Turquoise please refer to the following documentation which can be found on the Turquoise website at the '[Document Library](#)':

- TQ102 – Connectivity Guide
- TQ201 – Trading Gateway (FIX 5.0)

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- TQ202 – Post Trade Gateway (FIX 5.0)
- TQ203 – Drop Copy Gateway (FIX 5.0)
- TQ301 – Trading Gateway (Native)
- TQ501 – Guide to Reference Data Services

14.7 Detailed information regarding 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 which can be found on the Turquoise website at the ['Document Library'](#):

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

14.8 Detailed information regarding LSEG's Group Ticker Plant and Turquoise

For further information regarding interfacing with LSEG's Group Ticker Plant (GTP) to receive Turquoise market data, please refer to the following documentation which can be found on the GTP website at the ['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

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