



## BMLL Data Feed

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### Trades Plus

**Date:** 2026-02-09

**Version:** 1.8

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## 1.1. Introduction

The BMLL Trades Plus product is a dataset that provides details of all events related to executions and trades across all Exchanges (primary and secondary markets) and Trade Reporting Facilities in a simple, normalised format.

It provides a trade-by-trade view of all important attributes of executions occurring on multiple systems. It also provides related data, such as the prevailing top-of-book price (single exchange, primary, and consolidated), spread, and pre-/post-trade markouts within the same view.

This dataset can be used to compute volume aggregations and market shares of trade classifications, as well as the impact of trades on best quotes at a granular intraday level.

## 1.2. Dataset schema

Basic Types

| Type          | Content                                                                                                                                                                                              | Text representation        |
|---------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------|
| BOOLEAN       | A True or False boolean value.                                                                                                                                                                       | 1,0                        |
| INT32         | A 32 bit signed integer.                                                                                                                                                                             | 12345                      |
| INT64         | A 64 bit signed integer.                                                                                                                                                                             | 12345                      |
| DOUBLE        | IEEE 64-bit floating point value.                                                                                                                                                                    | 123.4567                   |
| BYTE_ARRAY    | An arbitrarily long byte array.                                                                                                                                                                      | "VODAFONE GROUP"           |
| NUMBER        | A number with defined precision (total digits allowed) and scale (number of digits allowed to the right of the decimal point). Unless otherwise specified, the default is precision 38 and scale 0.  | 12345                      |
| VARCHAR       | Variable length string up to 500 characters. May contain quotes and special characters. All text will be utf8-encoded unless indicated differently. Ticker and ISO codes should be ASCII compatible. | "VODAFONE GROUP"           |
| TIMESTAMP_NTZ | Nanoseconds since 1970 in UTC. Timestamp will be represented in ISO format in text format.                                                                                                           | 20220302-11:23:57.12345789 |
| FLOAT         | IEEE 64-bit floating point value.                                                                                                                                                                    | 123.4567                   |

|      |                                                                                                           |            |
|------|-----------------------------------------------------------------------------------------------------------|------------|
| DATE | A calendar date consisting of a year, month, and day, without including any time or time zone components. | 2025-01-01 |
|------|-----------------------------------------------------------------------------------------------------------|------------|

### Schema

One row in the dataset corresponds to a single execution or trade during the trading day. Events can be order book executions, new trade reports, amendments, or cancellations.

Trade reports can include duplicate and alternative representations of the same trade from a different point of view. This dataset will only include printable trades.

Trade amendments are always preceded by trade cancellations, which always have a negative "Size" field. Aggregating all the printable trades on specific intervals gives an accurate vision of the volume traded during that interval.

| Field Name<br>(Snowflake /<br>Databricks) | Field Name<br>(Parquet) | Type<br>(Snowflake /<br>Databricks) | Type<br>(Parquet) | Description                                                                                                                          |
|-------------------------------------------|-------------------------|-------------------------------------|-------------------|--------------------------------------------------------------------------------------------------------------------------------------|
| EXCHANGE_TICKER                           | ExchangeTicker          | VARCHAR                             | BYTE_ARRAY        | Ticker as provided by the reporting venue.                                                                                           |
| TICKER                                    | Ticker                  | VARCHAR                             | BYTE_ARRAY        | FactSet ticker. It refers to the unique identifier used within the FactSet financial data platform to represent a specific security. |
| MIC                                       | MIC                     | VARCHAR                             | BYTE_ARRAY        | The Market Identifier Code (MIC) uniquely identifies the exchange for which the trade is reported.                                   |
| OPOL                                      | OPOL                    | VARCHAR                             | BYTE_ARRAY        | The MIC of the Original Place Of Listing for the instrument.                                                                         |
| ISO_COUNTRY_CODE                          | ISOCountryCode          | VARCHAR                             | BYTE_ARRAY        | The ISO country code of the primary listing exchange for the instrument.                                                             |
| SEGMENT_CODE                              | SegmentCode             | VARCHAR                             | BYTE_ARRAY        | The segment MIC identifies the segment of the exchange on which the trade was executed.                                              |

| Field Name<br>(Snowflake /<br>Databricks) | Field Name<br>(Parquet)   | Type<br>(Snowflake /<br>Databricks) | Type<br>(Parquet) | Description                                                                                                                                                                                              |
|-------------------------------------------|---------------------------|-------------------------------------|-------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| INSTRUMENT_CURRENCY_CODE                  | InstrumentCurrencyCode    | VARCHAR                             | BYTE_ARRAY        | The currency that the instrument quotes in.                                                                                                                                                              |
| LISTING_ID                                | ListingId                 | NUMBER                              | INT64             | The BMLL identifier represents the listing.                                                                                                                                                              |
| INSTRUMENT_ID                             | InstrumentId              | NUMBER                              | INT64             | If not 0, the BMLL identifier represents the instrument to which the listing belongs. BMLL Instrument IDs are different if the primary identifier is different, the currency or the region is different. |
| TRADE_DATE                                | TradeDate                 | DATE                                | INT32             | The specific date on which a trade was published - the date is derived from the LocalPublicationTimestamp.                                                                                               |
| TRADE_TIMESTAMP                           | TradeTimestamp            | TIMESTAMPNTZ                        | INT64             | Time at which the trade was executed. The Time Zone is UTC. This will always be populated, and is generally delivered at microsecond precision.                                                          |
| PUBLICATION_TIMESTAMP                     | PublicationTimestamp      | TIMESTAMPNTZ                        | INT64             | Time at which the trade was reported. The Time Zone is UTC. Generally delivered at microsecond precision.                                                                                                |
| LOCAL_TRADE_TIMESTAMP                     | LocalTradeTimestamp       | TIMESTAMPNTZ                        | INT64             | Time at which the trade was executed. The Time Zone is the local timezone of the reporting venue. Generally delivered at microsecond precision.                                                          |
| LOCAL_PUBLICATION_TIMESTAMP               | LocalPublicationTimestamp | TIMESTAMPNTZ                        | INT64             | Time at which the trade was reported. The Time Zone is the local time zone. Generally delivered at microsecond precision.                                                                                |
| TRADE_TIMESTAMP_NANOSECONDS               | TradeTimestampNanoseconds | NUMBER                              | INT64             | Time at which the trade was executed. The Time Zone is UTC. Nanosecond precision.                                                                                                                        |

| Field Name<br>(Snowflake /<br>Databricks) | Field Name<br>(Parquet)         | Type<br>(Snowflake /<br>Databricks) | Type<br>(Parquet) | Description                                                                                                                                                                                                                                                                                                             |
|-------------------------------------------|---------------------------------|-------------------------------------|-------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| PUBLICATION_TIMESTAMP_NANOSECONDS         | PublicationTimestampNanoseconds | NUMBER                              | INT64             | Time at which the trade was reported. The Time Zone is UTC. Nanosecond precision.                                                                                                                                                                                                                                       |
| TZ_OFFSET                                 | TZOffset                        | NUMBER                              | INT32             | The offset between the local timestamp and UTC in seconds. Note: This is based on the original listing location of the primary instrument. The format is +/- HHMM. This will be adjusted during the DST if such a change occurs.                                                                                        |
| TRADE_ID                                  | TradeId                         | VARCHAR                             | BYTE_ARRAY        | This is an ID representing the trades. This is provided directly from the exchange feed.                                                                                                                                                                                                                                |
| EXCHANGE_SEQUENCE_NO                      | ExchangeSequenceNo              | NUMBER                              | INT64             | The sequence number of the market state update, if provided by the exchange.                                                                                                                                                                                                                                            |
| BMLL_SEQUENCE_NO                          | BMLLSequenceNo                  | NUMBER                              | INT64             | Sequence number - synthetic incremental number allowing to reorder messages for a security on a specific date.                                                                                                                                                                                                          |
| BMLL_SEQUENCE_SOURCE                      | BMLLSequenceSource              | NUMBER                              | INT64             | The source of the sequence. Used if there is more than one feed, for example where there are off book and on book trade messages provided by different feeds                                                                                                                                                            |
| AGGRESSOR_SIDE                            | AggressorSide                   | NUMBER                              | INT64             | Side of the aggressive trade:<br>2: Quotes from the BID side are aggressed by an aggressive sell order.<br>1: Quotes from the ASK side are aggressed by an aggressive buy order.<br>0: Quotes where the aggressor's side is unavailable due to trade mechanism without the aggressor or information not being reported. |

| Field Name<br>(Snowflake /<br>Databricks) | Field Name<br>(Parquet) | Type<br>(Snowflake /<br>Databricks) | Type<br>(Parquet) | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
|-------------------------------------------|-------------------------|-------------------------------------|-------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| PRICE                                     | Price                   | DOUBLE                              | DOUBLE            | The price of the executed trade, expressed in CurrencyCode.                                                                                                                                                                                                                                                                                                                                                                                                               |
| SIZE                                      | Size                    | DOUBLE                              | DOUBLE            | The size of the execution. If the execution is a cancellation, then the size will be negative.                                                                                                                                                                                                                                                                                                                                                                            |
| CURRENCY_CODE                             | CurrencyCode            | VARCHAR                             | BYTE_ARRAY        | The currency that the trade executed in.                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| INSTRUMENT_CURRENCY_PRICE                 | InstrumentCurrencyPrice | DOUBLE                              | DOUBLE            | The price of the executed trade, expressed in InstrumentCurrencyCode.                                                                                                                                                                                                                                                                                                                                                                                                     |
| MINOR_CURRENCY_FACTOR                     | MinorCurrencyFactor     | DOUBLE                              | DOUBLE            | The scaling factor from the minor to the major currency, if InstrumentCurrencyCode is a minor                                                                                                                                                                                                                                                                                                                                                                             |
| EXECUTION_VENUE                           | ExecutionVenue          | VARCHAR                             | BYTE_ARRAY        | The MIC code of the venue on which the trade did occur. Note that this can be different to the MIC code provided. For example, a trade on Liquidnet reported via CBOE BXTR would have a MIC Code of BOTC but an ExecutionVenue of LIQU.                                                                                                                                                                                                                                   |
| ORIGINAL_TRADE_TYPE                       | OriginalTradeType       | VARCHAR                             | BYTE_ARRAY        | A concatenation of flags relating to trade type as reported by the exchange in their string representation. This field is exchange dependent. On European venues, there is only one column used as input this is generally original_trade_type and trade_type (on Euronext, AQSE), cross_type (on Nasdaq venues) and match_type (on EOBV venues such as XETRA, Vienna, Prague and Budapest). The exact set of flags for each venue can be accessed in the appendix below. |

| Field Name<br>(Snowflake /<br>Databricks) | Field Name<br>(Parquet) | Type<br>(Snowflake /<br>Databricks) | Type<br>(Parquet) | Description                                                                                                                                                                                                                                                                                                                                                                        |
|-------------------------------------------|-------------------------|-------------------------------------|-------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| MARKET_MECHANISM                          | MarketMechanism         | VARCHAR                             | BYTE_ARRAY        | MMT 1 Flag - Market Mechanism<br><br>1: Central Limit Order Book (CLOB)<br>2: Quote Driven Market<br>3: Dark Order Book<br>4: Off Book<br>5: Periodic Auction<br>6: Request For Quotes<br>7: Any other (including hybrid)                                                                                                                                                          |
| TRADING_MODE                              | TradingMode             | VARCHAR                             | BYTE_ARRAY        | MMT 2 Flag - Trading Mode<br><br>1 : Undefined Auction<br>0 : Opening Auction<br>K : Closing Auction<br>I : Intraday Auction<br>U : Unscheduled Auction<br>P: On Demand Auction<br>2 : Continuous Trading<br>3 : At Market Close Trading<br>4 : Out of Main Session Trading<br>5 : Trade Reporting - On Exchange<br>6 : Trade Reporting - Off exchange<br>7 : Trade Reporting (SI) |
| TRANSACTION_CATEGORY                      | TransactionCategory     | VARCHAR                             | BYTE_ARRAY        | MMT 3.1 Flag - Transaction Category<br><br>D : Dark Trade<br>R : Trade that received Price Improvement<br>Z : Package Trade (Excluding physical trades)<br>Y : Exchange for Physical Trade                                                                                                                                                                                         |
| NEGOTIATED_TRADE                          | NegotiatedTrade         | VARCHAR                             | BYTE_ARRAY        | MMT 3.2 Flag - Negotiation Indicator or Pre-Trade Transparency Waiver<br><br>N : Negotiated Trade                                                                                                                                                                                                                                                                                  |

| Field Name<br>(Snowflake /<br>Databricks) | Field Name<br>(Parquet) | Type<br>(Snowflake /<br>Databricks) | Type<br>(Parquet) | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
|-------------------------------------------|-------------------------|-------------------------------------|-------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                                           |                         |                                     |                   | 1 : NLIQ - Negotiated Trade in Liquid Financial Instruments<br>2 : OLIQ - Negotiated Trade in Illiquid Financial Instruments<br>3 : PRIC - Negotiated Trade subject to Conditions Other Than The Current Market Price<br>4 : ILQD - Pre-Trade Transparency Waiver for Illiquid Instruments on an SI<br>5 : SIZE - Pre-Trade Transparency Waiver for Above Standard Market Size on an SI<br>6 : ILQD,SIZE - Pre-Trade Transparency Waiver for Illiquide and Above Standard Market Size<br>7 : NTLS - Negotiated trade larger than LIS brought onto a venue<br>8 : NETW - Negotiated trade with pretrade transparency waiver<br>9 : NLIQ,NTLS - Negotiated trades in Liquid Financial Instrument<br>A : OLIQ,NTLS<br>B : PRIC,NTLS<br>C : NETW,NTLS |
| CROSSING_TRADE                            | CrossingTrade           | VARCHAR                             | BYTE_ARRAY        | MMT 3.3 Flag<br>Used to indicate if the trade was the result of a cross executed by the broker.<br><br>X: Agency Cross Trade                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| MODIFICATION_INDICATOR                    | ModificationIndicator   | VARCHAR                             | BYTE_ARRAY        | MMT 3.4 Flag - Modification Indicator<br>A: Trade Amendment<br>C: Trade Cancelled                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| BENCHMARK_INDICATOR                       | BenchmarkIndicator      | VARCHAR                             | BYTE_ARRAY        | MMT 3.5 Flag<br><br>B: Benchmark Trade                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |

| Field Name<br>(Snowflake /<br>Databricks) | Field Name<br>(Parquet)       | Type<br>(Snowflake /<br>Databricks) | Type<br>(Parquet) | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
|-------------------------------------------|-------------------------------|-------------------------------------|-------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                                           |                               |                                     |                   | S: Reference Price Trade                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| SPECIAL_DIVIDEND_IN<br>DICATOR            | SpecialDividendIndi<br>cator  | VARCHAR                             | BYTE_ARRAY        | MMT 3.6 Flag<br>E: Special Dividend Indicator                                                                                                                                                                                                                                                                                                                                                                                                                            |
| OFF_BOOK_AUTOMAT<br>ED_INDICATOR          | OffBookAutomated<br>Indicator | VARCHAR                             | BYTE_ARRAY        | MMT 3.7 Flag<br>M: Off-book manual<br>Q: Off-book automated                                                                                                                                                                                                                                                                                                                                                                                                              |
| PRICE_FORMATION                           | PriceFormation                | VARCHAR                             | BYTE_ARRAY        | MMT 3.8 Flag<br>P: Plain-Vanilla Trade<br>T: Non-Price Forming Trade<br>J: Trade not Contributing to<br>Price Discovery Process<br>N: Price is currently not<br>available - PENDING<br>Z: Price is Not Applicable                                                                                                                                                                                                                                                        |
| ALGORITHMIC_TRADE                         | AlgorithmicTrade              | VARCHAR                             | BYTE_ARRAY        | MMT 3.9 Flag<br>H: Algorithmic Trade                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| PUBLICATION_MODE                          | PublicationMode               | VARCHAR                             | BYTE_ARRAY        | MMT 4.1 Flag<br>1: Non-Immediate Publication<br>2: Non-Immediate Publication:<br>Deferral due to "Large In Scale"<br>3: Non-Immediate Publication:<br>Deferral due to "Illiquid<br>Instrument"<br>4: Non-Immediate Publication:<br>Deferral due to "Size Specific"<br>5 : Non-Immediate Publication<br>: Deferral due to "Illiquid<br>Instrument" and "Size Specific"<br>6 : Non-Immediate Publication<br>: Deferral due to "Illiquid<br>Instrument" and "Large In Size" |
| DEFERRAL_TYPE                             | DeferralType                  | VARCHAR                             | BYTE_ARRAY        | MMT 4.2 Flag<br>1: Limited Details Trade<br>2 : Daily Aggregated Trade<br>3 : Volume Omission Trade                                                                                                                                                                                                                                                                                                                                                                      |

| Field Name<br>(Snowflake /<br>Databricks) | Field Name<br>(Parquet) | Type<br>(Snowflake /<br>Databricks) | Type<br>(Parquet) | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
|-------------------------------------------|-------------------------|-------------------------------------|-------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                                           |                         |                                     |                   | 4 : Four Weeks Aggregation Trade<br>5 : Indefinite Aggregation Trade<br>6 : Volume Omission Trade, Eligible to Subsequent Enrichment in Aggregated Form<br>7 : Full details of Earlier "Limited Details Trade"<br>8 : Full details of Earlier "Daily Aggregated Trade"<br>9 : Full details of Earlier "Volume Omission Trade"<br>V : Full Details of Earlier "Four Weeks Aggregation Trade"<br>W : Full Details of Earlier "Volume Omission Trade, Eligible to Subsequent Enrichment in Aggregated Form" |
| DUPLICATIVE_INDICATOR                     | DuplicativeIndicator    | VARCHAR                             | BYTE_ARRAY        | MMT 5 Flag<br>Blank: Not a duplicate<br>-: Not a duplicate<br>1: If this is a duplicate of an existing trade report<br>2: Intra-Group Trade<br>3: Duplicate Trade Report & Intra-Group Trade<br>4: Cross-Border Duplicative Trade Report<br>5: Duplicate & Cross-Border Duplicate Trade Report<br>6: Duplicate & Intra-Group Trade & Cross-Border Duplicate Trade Report<br>7: Intra-Group Trade & Cross-Border Duplicate Trade Report                                                                   |
| BROKER_ID_BUYER                           | BrokerIdBuyer           | VARCHAR                             | BYTE_ARRAY        | Identifier of the broker behind the passive buy side of the trade, where provided by the exchange. Where a                                                                                                                                                                                                                                                                                                                                                                                               |

| Field Name<br>(Snowflake /<br>Databricks) | Field Name<br>(Parquet) | Type<br>(Snowflake /<br>Databricks) | Type<br>(Parquet) | Description                                                                                                                                                                                                                                                                                          |
|-------------------------------------------|-------------------------|-------------------------------------|-------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                                           |                         |                                     |                   | side-agnostic member participant ID is given, this is combined with the known passive side of the trade to fill in the buyer or seller ID.                                                                                                                                                           |
| BROKER_ID_SELLER                          | BrokerIdSeller          | VARCHAR                             | BYTE_ARRAY        | Identifier of the broker behind the passive sell side of the trade, where provided by the exchange. Where a side-agnostic member participant ID is given, this is combined with the known passive side of the trade to fill in the buyer or seller ID.                                               |
| JURISDICTION                              | Jurisdiction            | VARCHAR                             | BYTE_ARRAY        | The 2-letter ISO country code of the country of the execution or publication venue. For Europe, this takes the value 'EU'.                                                                                                                                                                           |
| MARKET_STATE                              | MarketState             | VARCHAR                             | BYTE_ARRAY        | The market state, normalised by BMLL.                                                                                                                                                                                                                                                                |
| MARKET_STATE_AT_PRIMARY                   | MarketStateAtPrimary    | VARCHAR                             | BYTE_ARRAY        | The market state of the primary exchange, normalised by BMLL.                                                                                                                                                                                                                                        |
| BMLL_TRADE_TYPE                           | BMLLTradeType           | VARCHAR                             | BYTE_ARRAY        | Standardised Trade type by BMLL                                                                                                                                                                                                                                                                      |
| CLASSIFICATION                            | Classification          | VARCHAR                             | BYTE_ARRAY        | The standardised classification, normalised by BMLL. This takes one of the 22 values present also in the daily classified trades product.<br><br>Note: The Off Book On Exchange classification will differ compared to the daily classified trades product. Please see section 1.5 for more details, |
| TRADE_NOTIONAL                            | TradeNotional           | DOUBLE                              | DOUBLE            | The notional value of the trade in the currency specified by CURRENCY_CODE.                                                                                                                                                                                                                          |

| Field Name<br>(Snowflake /<br>Databricks) | Field Name<br>(Parquet)   | Type<br>(Snowflake /<br>Databricks) | Type<br>(Parquet) | Description                                                                                                                                                                                                                                                                                                                                                                                                       |
|-------------------------------------------|---------------------------|-------------------------------------|-------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| TRADE_NOTIONAL_US<br>D                    | TradeNotionalUSD          | DOUBLE                              | DOUBLE            | The notional value of the trade in USD. The exchange rate used in the conversion is as of the date of publication of the trade.                                                                                                                                                                                                                                                                                   |
| TRADE_NOTIONAL_EU<br>R                    | TradeNotionalEUR          | DOUBLE                              | DOUBLE            | The notional value of the trade in EUR. The exchange rate used in the conversion is as of the date of publication of the trade.                                                                                                                                                                                                                                                                                   |
| BLOCK_SIZE                                | BlockSize                 | DOUBLE                              | DOUBLE            | The threshold size (in shares, if applicable) of a block trade depending on the conditions specified by the jurisdiction where the executing venue is located. Values will populate with NULL if not applicable or unknown.                                                                                                                                                                                       |
| BLOCK_NOTIONAL                            | BlockNotional             | DOUBLE                              | DOUBLE            | The threshold notional value (if applicable) of a block trade depending on the conditions specified by the jurisdiction where the executing venue is located. The currency of this threshold is based on the region where the security traded, Values will populate with NULL if not applicable or unknown. The block notional threshold is not based upon the block size threshold, and is an independent value. |
| BLOCK_NOTIONAL_CU<br>RRENCY               | BlockNotionalCurre<br>ncy | VARCHAR                             | BYTE_ARRAY        | The currency in which the block notional threshold is populated. This is region-specific (EUR for Europe/UK and USD for all other regions).                                                                                                                                                                                                                                                                       |
| TRADE_NOTIONAL_BL<br>OCK_BPS              | TradeNotionalBloc<br>kBps | DOUBLE                              | DOUBLE            | Trade notional as a percentage of set block threshold, expressed in basis points and calculated as                                                                                                                                                                                                                                                                                                                |

| Field Name<br>(Snowflake /<br>Databricks) | Field Name<br>(Parquet) | Type<br>(Snowflake /<br>Databricks) | Type<br>(Parquet) | Description                                                                                                                                                                                                                                                                                                                                                                      |
|-------------------------------------------|-------------------------|-------------------------------------|-------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                                           |                         |                                     |                   | 10,000 * (trade notional value in EUR or USD (depending on the region) / Block value). Values will populate with NaN if the block notional is unknown.                                                                                                                                                                                                                           |
| IS_BLOCK                                  | IsBlock                 | VARCHAR                             | BYTE_ARRAY        | An enum field depicting whether the trade was a block trade, not a block trade or unknown according to the definitions adopted for the respective market or region.<br><br>TRUE<br>FALSE<br>UNKNOWN                                                                                                                                                                              |
| LOT_TYPE                                  | LotType                 | VARCHAR                             | BYTE_ARRAY        | An enum field depicting whether the trade was of odd lot, round lot, mixed lot size or unknown. The odd lot threshold is region-specific.<br><br>ODD<br>ROUND<br>MIXED<br>UNKNOWN                                                                                                                                                                                                |
| PARTICIPANT_TYPE                          | ParticipantType         | VARCHAR                             | BYTE_ARRAY        | An enum field depicting whether the trade originated from a retail participant, non-retail participant, other specific participant type or unknown . This is derived from exchange-specific flags (where available) or heuristic methods.<br><br>RETAIL<br>THIRD_PARTIES (XMAD)<br>OWN_ACCOUNT (XMAD)<br>SPECIALIST (XMAD)<br>CUSTODIAN_PARTICIPANT (XNSE)<br>PROPRIETARY (XNSE) |

| Field Name<br>(Snowflake /<br>Databricks) | Field Name<br>(Parquet) | Type<br>(Snowflake /<br>Databricks) | Type<br>(Parquet) | Description                                                                                                                                                                                                                                                                                                                  |
|-------------------------------------------|-------------------------|-------------------------------------|-------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                                           |                         |                                     |                   | NON_CP_NON_PROPRIETARY<br>(XNSE)<br>UNKNOWN                                                                                                                                                                                                                                                                                  |
| BMLL_PARTICIPANT_T<br>YPE                 | BMLLParticipantTy<br>pe | VARCHAR                             | BYTE_ARRAY        | This is a normalised field<br>which takes<br>PARTICIPANT_TYPE and maps<br>to the following possible<br>values for global consistency:<br><br>INSTITUTIONAL<br>RETAIL<br>MARKET_MAKER<br>BROKER_DEALER<br>UNKNOWN                                                                                                             |
| BEST_BID_PRICE                            | BestBidPrice            | DOUBLE                              | DOUBLE            | The best bid price on the<br>Consolidated/National or<br>Primary exchange (as<br>determined by BMLL for<br>region/country - see section<br>1.5) as of the trade timestamp<br>(before the trade).                                                                                                                             |
| BEST_BID_SIZE                             | BestBidSize             | DOUBLE                              | DOUBLE            | The size available at the best<br>bid price on the<br>Consolidated/National or<br>Primary exchange (as<br>determined by BMLL for<br>region/country - see section<br>1.5) as of the trade timestamp<br>(before the trade). For the US<br>NBBO, this size is reflected in<br>the number of round lots,<br>converted to shares. |
| BEST_BID_VENUE                            | BestBidVenue            | VARCHAR                             | BYTE_ARRAY        | The venue displaying the<br>largest size at the<br>Consolidated/National best bid<br>price. Where multiple venues<br>display the best bid price, the<br>venue shown is a) the one<br>with the largest size b) the<br>one that provided the first<br>quote at that size.                                                      |

| Field Name<br>(Snowflake /<br>Databricks) | Field Name<br>(Parquet) | Type<br>(Snowflake /<br>Databricks) | Type<br>(Parquet) | Description                                                                                                                                                                                                                                                                                                   |
|-------------------------------------------|-------------------------|-------------------------------------|-------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                                           |                         |                                     |                   | For single market regions, this will be the Primary exchange.                                                                                                                                                                                                                                                 |
| BEST_ASK_PRICE                            | BestAskPrice            | DOUBLE                              | DOUBLE            | The best ask price on the Consolidated/National or Primary exchange (as determined by BMLL for region/country - see section 1.5) as of the trade timestamp (before the trade).                                                                                                                                |
| BEST_ASK_SIZE                             | BestAskSize             | DOUBLE                              | DOUBLE            | The size available at the best ask price on the Consolidated/National or Primary exchange (as determined by BMLL for region/country - see section 1.5) as of the trade timestamp (prior to trade). For the US NBBO, this size is reflected in the number of round lots, converted to shares.                  |
| BEST_ASK_VENUE                            | BestAskVenue            | VARCHAR                             | BYTE_ARRAY        | The venue displaying the largest size at the Consolidated/National best ask price. Where multiple venues display the best ask price, the venue shown is a) the one with the largest size b) the one that provided the first quote at that size. For single market regions, this will be the Primary exchange. |
| BEST_BID_PRICE_AT_VENUE                   | BestBidPriceAtVenue     | DOUBLE                              | DOUBLE            | The best bid price on the exchange represented by the MIC column, as of the trade timestamp (prior to trade). This is only populated for lit exchanges.                                                                                                                                                       |
| BEST_BID_SIZE_AT_VENUE                    | BestBidSizeAtVenue      | DOUBLE                              | DOUBLE            | The size available at the best bid price on the exchange represented by the MIC column, as of the trade timestamp (prior to trade).                                                                                                                                                                           |

| Field Name<br>(Snowflake /<br>Databricks) | Field Name<br>(Parquet) | Type<br>(Snowflake /<br>Databricks) | Type<br>(Parquet) | Description                                                                                                                                                                                                                                                                               |
|-------------------------------------------|-------------------------|-------------------------------------|-------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                                           |                         |                                     |                   | This is only populated for lit exchanges.                                                                                                                                                                                                                                                 |
| BEST_ASK_PRICE_AT_VENUE                   | BestAskPriceAtVenue     | DOUBLE                              | DOUBLE            | The best ask price on the exchange represented by the MIC column, as of the trade timestamp (prior to trade). This is only populated for lit exchanges.                                                                                                                                   |
| BEST_ASK_SIZE_AT_VENUE                    | BestAskSizeAtVenue      | DOUBLE                              | DOUBLE            | The size available at the best ask price on the exchange represented by the MIC column, as of the trade timestamp (prior to trade). This is only populated for lit exchanges.                                                                                                             |
| BEST_BID_PRICE_AT_PRIMARY                 | BestBidPriceAtPrimary   | DOUBLE                              | DOUBLE            | The best bid price on the primary exchange, as of the trade timestamp (prior to trade).                                                                                                                                                                                                   |
| BEST_BID_SIZE_AT_PRIMARY                  | BestBidSizeAtPrimary    | DOUBLE                              | DOUBLE            | The size available at the best bid price on the primary exchange, as of the trade timestamp (prior to trade).                                                                                                                                                                             |
| BEST_ASK_PRICE_AT_PRIMARY                 | BestAskPriceAtPrimary   | DOUBLE                              | DOUBLE            | The best ask price on the primary exchange, as of the trade timestamp (prior to trade).                                                                                                                                                                                                   |
| BEST_ASK_SIZE_AT_PRIMARY                  | BestAskSizeAtPrimary    | DOUBLE                              | DOUBLE            | The size available at the best ask price on the primary exchange, as of the trade timestamp (prior to trade).                                                                                                                                                                             |
| PRIOR_QUOTE_SIZE_RANK                     | PriorQuoteSizeRank      | NUMBER                              | INT64             | The rank of the trade execution venue (nth rank) based upon prevailing quote size prior to the trade. Provides quote rank amongst all Cross-listed venues. If the book of execution was not at BBO at the time of execution of the trade in question, a 0 will be used to denote that the |

| Field Name<br>(Snowflake /<br>Databricks)   | Field Name<br>(Parquet)          | Type<br>(Snowflake /<br>Databricks) | Type<br>(Parquet) | Description                                                                                                                                                                                                                                       |
|---------------------------------------------|----------------------------------|-------------------------------------|-------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                                             |                                  |                                     |                   | quoting venue was not at BB/BO. This will be available for lit trades only, for other trade types this field will be null.                                                                                                                        |
| PRE_TRADE_ELAPSED<br>_TIME_CHG              | PreTradeElapsedTimeChg           | NUMBER                              | INT64             | Elapsed time (nanoseconds, using exchange timestamps) since last price change on the Consolidated/National or Primary exchange (as determined by BMLL for region/country - see section 1.5) prior to this trade being executed                    |
| POST_TRADE_ELAPSED<br>D_TIME_CHG            | PostTradeElapsedTimeChg          | NUMBER                              | INT64             | Elapsed time (nanoseconds, using exchange timestamps) since last price change on the Consolidated/National or Primary exchange (as determined by BMLL for region/country - see section 1.5) after this trade is executed                          |
| PRE_TRADE_ELAPSED<br>_TIME_CHG_AT_PRIMARY   | PreTradeElapsedTimeChgAtPrimary  | NUMBER                              | INT64             | Elapsed time (in nanoseconds, using exchange timestamps) since last price change in Primary BBO before this trade is executed                                                                                                                     |
| POST_TRADE_ELAPSED<br>D_TIME_CHG_AT_PRIMARY | PostTradeElapsedTimeChgAtPrimary | NUMBER                              | INT64             | Elapsed time (in nanoseconds, using exchange timestamps) since last price change in Primary BBO after this trade is executed                                                                                                                      |
| PRICE_POINT                                 | PricePoint                       | DOUBLE                              | DOUBLE            | The executed price of the trade relative to the Consolidated/National or Primary exchange (as determined by BMLL for region/country - see section 1.5) <ul style="list-style-type: none"> <li>This is calculated as (Trade Price - Bid</li> </ul> |

| Field Name<br>(Snowflake /<br>Databricks) | Field Name<br>(Parquet) | Type<br>(Snowflake /<br>Databricks) | Type<br>(Parquet) | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
|-------------------------------------------|-------------------------|-------------------------------------|-------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                                           |                         |                                     |                   | $\text{Price} / (\text{Ask Price} - \text{Bid Price})$ <ul style="list-style-type: none"> <li>Note: in cases where Best Bid = Best Ask,</li> <li>If Price &gt; Best Bid, then PricePoint = 99999</li> <li>If Price &lt; Best Bid, then Price Point = -99999</li> <li>If Price = Best Bid, then PricePoint = 0.5</li> </ul>                                                                                                                                                                                                                                     |
| PRICE_POINT_AT_VENUE                      | PricePointAtVenue       | DOUBLE                              | DOUBLE            | <p>The executed price of the trade relative to the best bid/offer on the exchange represented by the MIC column. This is only populated for lit exchanges.</p> <ul style="list-style-type: none"> <li>This is calculated as <math>(\text{Trade Price} - \text{Bid Price}) / (\text{Ask Price} - \text{Bid Price})</math></li> <li>Note: in cases where Best Bid = Best Ask,</li> <li>If Price &gt; Best Bid, then PricePoint = 99999</li> <li>If Price &lt; Best Bid, then Price Point = -99999</li> <li>If Price = Best Bid, then PricePoint = 0.5</li> </ul> |
| PRICE_POINT_AT_PRIMARY                    | PricePointAtPrimary     | DOUBLE                              | DOUBLE            | <p>The executed price of the trade relative to the primary best bid/offer</p> <ul style="list-style-type: none"> <li>This is calculated as <math>(\text{Trade Price} - \text{Bid Price}) / (\text{Ask Price} - \text{Bid Price})</math></li> </ul>                                                                                                                                                                                                                                                                                                             |

| Field Name<br>(Snowflake /<br>Databricks) | Field Name<br>(Parquet) | Type<br>(Snowflake /<br>Databricks) | Type<br>(Parquet) | Description                                                                                                                                                                                                                                                                                                                                                                                                            |
|-------------------------------------------|-------------------------|-------------------------------------|-------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                                           |                         |                                     |                   | <ul style="list-style-type: none"> <li>Note: in cases where Best Bid = Best Ask,</li> <li>If Price &gt; Best Bid, then PricePoint = 99999</li> <li>If Price &lt; Best Bid, then Price Point = -99999</li> <li>If Price = Best Bid, then PricePoint = 0.5</li> </ul>                                                                                                                                                    |
| ORDER_REMAINING_QTY                       | OrderRemainingQty       | NUMBER                              | INT64             | Remaining quantity of passively executed order that participated in this trade. This will be available for lit on-book trades only, for other books this field will be null.                                                                                                                                                                                                                                           |
| BBO_REMAINING_QTY_AT_VENUE                | BBORemainingQtyAtVenue  | NUMBER                              | INT64             | <p>Remaining quantity left on the Best Bid Offer of the execution venue at the trade price after the trade. This value could be calculated either from the Bid or the Offer side only, depending on the aggressive order side.</p> <p>The field will return zero if no remaining quantity is observed at that price. This value will be populated for on-book executions, for other books this field will be null.</p> |
| PRE_TRADE_MID_30000MS                     | PreTradeMid30000ms      | DOUBLE                              | DOUBLE            | The mid-point price of the best bid/offer on the Consolidated/National or Primary exchange (as determined by BMLL for region/country - see section 1.5) at Xms prior to the time of trade, where X denotes an interval of time in milliseconds. This price can be used in a mark-out calculation.                                                                                                                      |
| PRE_TRADE_MID_60000MS                     | PreTradeMid60000ms      | DOUBLE                              | DOUBLE            |                                                                                                                                                                                                                                                                                                                                                                                                                        |
| PRE_TRADE_MID_30000MS                     | PreTradeMid30000ms      | DOUBLE                              | DOUBLE            |                                                                                                                                                                                                                                                                                                                                                                                                                        |
| PRE_TRADE_MID_15000MS                     | PreTradeMid15000ms      | DOUBLE                              | DOUBLE            |                                                                                                                                                                                                                                                                                                                                                                                                                        |

| Field Name<br>(Snowflake /<br>Databricks) | Field Name<br>(Parquet) | Type<br>(Snowflake /<br>Databricks) | Type<br>(Parquet) | Description                                                                                                                                                                                                                                                                   |
|-------------------------------------------|-------------------------|-------------------------------------|-------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| PRE_TRADE_MID_500<br>OMS                  | PreTradeMid5000<br>ms   | DOUBLE                              | DOUBLE            | There are 15 variations of this metric at the following intervals: 300,000ms (5m), 60000ms (1m), 30000 (30s), 15000 (15s), 5000ms (5s), 1000ms (1s), 500ms, 200ms, 100ms, 50ms, 25ms, 10ms, 5ms, 2ms, 1ms.                                                                    |
| PRE_TRADE_MID_100<br>OMS                  | PreTradeMid1000<br>ms   | DOUBLE                              | DOUBLE            |                                                                                                                                                                                                                                                                               |
| PRE_TRADE_MID_500<br>MS                   | PreTradeMid500m<br>s    | DOUBLE                              | DOUBLE            |                                                                                                                                                                                                                                                                               |
| PRE_TRADE_MID_200<br>MS                   | PreTradeMid200m<br>s    | DOUBLE                              | DOUBLE            |                                                                                                                                                                                                                                                                               |
| PRE_TRADE_MID_100<br>MS                   | PreTradeMid100ms        | DOUBLE                              | DOUBLE            |                                                                                                                                                                                                                                                                               |
| PRE_TRADE_MID_50M<br>S                    | PreTradeMid50ms         | DOUBLE                              | DOUBLE            |                                                                                                                                                                                                                                                                               |
| PRE_TRADE_MID_25M<br>S                    | PreTradeMid25ms         | DOUBLE                              | DOUBLE            |                                                                                                                                                                                                                                                                               |
| PRE_TRADE_MID_10M<br>S                    | PreTradeMid10ms         | DOUBLE                              | DOUBLE            |                                                                                                                                                                                                                                                                               |
| PRE_TRADE_MID_5MS                         | PreTradeMid5ms          | DOUBLE                              | DOUBLE            |                                                                                                                                                                                                                                                                               |
| PRE_TRADE_MID_2MS                         | PreTradeMid2ms          | DOUBLE                              | DOUBLE            |                                                                                                                                                                                                                                                                               |
| PRE_TRADE_MID_1MS                         | PreTradeMid1ms          | DOUBLE                              | DOUBLE            |                                                                                                                                                                                                                                                                               |
| POST_TRADE_MID_1M<br>S                    | PostTradeMid1ms         | DOUBLE                              | DOUBLE            | "The mid-point price of the best bid/offer on the Consolidated/National or Primary exchange (as determined by BMLL for region/country) at Xms after the time of trade, where X denotes an interval of time in milliseconds. This price can be used in a mark-out calculation. |
| POST_TRADE_MID_2M<br>S                    | PostTradeMid2ms         | DOUBLE                              | DOUBLE            |                                                                                                                                                                                                                                                                               |
| POST_TRADE_MID_5M<br>S                    | PostTradeMid5ms         | DOUBLE                              | DOUBLE            |                                                                                                                                                                                                                                                                               |
| POST_TRADE_MID_10<br>MS                   | PostTradeMid10ms        | DOUBLE                              | DOUBLE            |                                                                                                                                                                                                                                                                               |
| POST_TRADE_MID_25<br>MS                   | PostTradeMid25m<br>s    | DOUBLE                              | DOUBLE            |                                                                                                                                                                                                                                                                               |
| POST_TRADE_MID_50<br>MS                   | PostTradeMid50m<br>s    | DOUBLE                              | DOUBLE            |                                                                                                                                                                                                                                                                               |

| Field Name<br>(Snowflake /<br>Databricks) | Field Name<br>(Parquet)     | Type<br>(Snowflake /<br>Databricks) | Type<br>(Parquet) | Description                                                                                                                                                                                                                                                                                                                                                                                                                            |
|-------------------------------------------|-----------------------------|-------------------------------------|-------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| POST_TRADE_MID_10<br>OMS                  | PostTradeMid100ms           | DOUBLE                              | DOUBLE            | 5000ms (5s), 15000 (15s),<br>30000 (30s), 60000ms (1m),<br>300,000ms (5m)."                                                                                                                                                                                                                                                                                                                                                            |
| POST_TRADE_MID_20<br>OMS                  | PostTradeMid200ms           | DOUBLE                              | DOUBLE            |                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| POST_TRADE_MID_50<br>OMS                  | PostTradeMid500ms           | DOUBLE                              | DOUBLE            |                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| POST_TRADE_MID_10<br>00OMS                | PostTradeMid1000ms          | DOUBLE                              | DOUBLE            |                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| POST_TRADE_MID_50<br>00OMS                | PostTradeMid5000ms          | DOUBLE                              | DOUBLE            |                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| POST_TRADE_MID_15<br>000OMS               | PostTradeMid15000ms         | DOUBLE                              | DOUBLE            |                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| POST_TRADE_MID_30<br>000OMS               | PostTradeMid30000ms         | DOUBLE                              | DOUBLE            |                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| POST_TRADE_MID_60<br>000OMS               | PostTradeMid60000ms         | DOUBLE                              | DOUBLE            |                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| POST_TRADE_MID_30<br>0000OMS              | PostTradeMid300000ms        | DOUBLE                              | DOUBLE            |                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| PRE_TRADE_MID_300<br>000OMS_AT_PRIMARY    | PreTradeMid30000msAtPrimary | DOUBLE                              | DOUBLE            | <p>"The mid-point price of the best bid/offer on the Primary exchange at Xms prior to the time of trade, where X denotes an interval of time in milliseconds. This price can be used in a mark-out calculation.</p> <p>There are 15 variations of this metric at the following intervals: 300,000ms (5m), 60000ms (1m), 30000 (30s), 15000 (15s), 5000ms (5s), 1000ms (1s), 500ms, 200ms, 100ms, 50ms, 25ms, 10ms, 5ms, 2ms, 1ms."</p> |
| PRE_TRADE_MID_600<br>00OMS_AT_PRIMARY     | PreTradeMid60000msAtPrimary | DOUBLE                              | DOUBLE            |                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| PRE_TRADE_MID_300<br>00OMS_AT_PRIMARY     | PreTradeMid30000msAtPrimary | DOUBLE                              | DOUBLE            |                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| PRE_TRADE_MID_150<br>00OMS_AT_PRIMARY     | PreTradeMid15000msAtPrimary | DOUBLE                              | DOUBLE            |                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| PRE_TRADE_MID_500<br>OMS_AT_PRIMARY       | PreTradeMid5000msAtPrimary  | DOUBLE                              | DOUBLE            |                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| PRE_TRADE_MID_100<br>OMS_AT_PRIMARY       | PreTradeMid1000msAtPrimary  | DOUBLE                              | DOUBLE            |                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| PRE_TRADE_MID_500<br>MS_AT_PRIMARY        | PreTradeMid500msAtPrimary   | DOUBLE                              | DOUBLE            |                                                                                                                                                                                                                                                                                                                                                                                                                                        |

| Field Name<br>(Snowflake /<br>Databricks) | Field Name<br>(Parquet)    | Type<br>(Snowflake /<br>Databricks) | Type<br>(Parquet) | Description                                                                                                                                                                                                                                                                                                                                                                                                                         |
|-------------------------------------------|----------------------------|-------------------------------------|-------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| PRE_TRADE_MID_200MS_AT_PRIMARY            | PreTradeMid200msAtPrimary  | DOUBLE                              | DOUBLE            |                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| PRE_TRADE_MID_100MS_AT_PRIMARY            | PreTradeMid100msAtPrimary  | DOUBLE                              | DOUBLE            |                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| PRE_TRADE_MID_50MS_AT_PRIMARY             | PreTradeMid50msAtPrimary   | DOUBLE                              | DOUBLE            |                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| PRE_TRADE_MID_25MS_AT_PRIMARY             | PreTradeMid25msAtPrimary   | DOUBLE                              | DOUBLE            |                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| PRE_TRADE_MID_10MS_AT_PRIMARY             | PreTradeMid10msAtPrimary   | DOUBLE                              | DOUBLE            |                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| PRE_TRADE_MID_5MS_AT_PRIMARY              | PreTradeMid5msAtPrimary    | DOUBLE                              | DOUBLE            |                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| PRE_TRADE_MID_2MS_AT_PRIMARY              | PreTradeMid2msAtPrimary    | DOUBLE                              | DOUBLE            |                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| PRE_TRADE_MID_1MS_AT_PRIMARY              | PreTradeMid1msAtPrimary    | DOUBLE                              | DOUBLE            |                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| POST_TRADE_MID_1MS_AT_PRIMARY             | PostTradeMid1msAtPrimary   | DOUBLE                              | DOUBLE            | <p>"The mid-point price of the best bid/offer on the Primary exchange at Xms after the time of trade, where X denotes an interval of time in milliseconds. This price can be used in a mark-out calculation.</p> <p>There are 15 variations of this metric at the following intervals: 1ms, 2ms, 5ms, 10ms, 25ms, 50ms, 100ms, 200ms, 500ms, 1000ms (1s), 5000ms (5s), 15000 (15s), 30000 (30s), 60000ms (1m), 300,000ms (5m)."</p> |
| POST_TRADE_MID_2MS_AT_PRIMARY             | PostTradeMid2msAtPrimary   | DOUBLE                              | DOUBLE            |                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| POST_TRADE_MID_5MS_AT_PRIMARY             | PostTradeMid5msAtPrimary   | DOUBLE                              | DOUBLE            |                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| POST_TRADE_MID_10MS_AT_PRIMARY            | PostTradeMid10msAtPrimary  | DOUBLE                              | DOUBLE            |                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| POST_TRADE_MID_25MS_AT_PRIMARY            | PostTradeMid25msAtPrimary  | DOUBLE                              | DOUBLE            |                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| POST_TRADE_MID_50MS_AT_PRIMARY            | PostTradeMid50msAtPrimary  | DOUBLE                              | DOUBLE            |                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| POST_TRADE_MID_100MS_AT_PRIMARY           | PostTradeMid100msAtPrimary | DOUBLE                              | DOUBLE            |                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| POST_TRADE_MID_200MS_AT_PRIMARY           | PostTradeMid200msAtPrimary | DOUBLE                              | DOUBLE            |                                                                                                                                                                                                                                                                                                                                                                                                                                     |

| Field Name<br>(Snowflake /<br>Databricks) | Field Name<br>(Parquet)           | Type<br>(Snowflake /<br>Databricks) | Type<br>(Parquet) | Description                                                                                                                                                                                                                                     |
|-------------------------------------------|-----------------------------------|-------------------------------------|-------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| POST_TRADE_MID_50<br>OMS_AT_PRIMARY       | PostTradeMid500<br>msAtPrimary    | DOUBLE                              | DOUBLE            |                                                                                                                                                                                                                                                 |
| POST_TRADE_MID_10<br>OOMS_AT_PRIMARY      | PostTradeMid1000<br>msAtPrimary   | DOUBLE                              | DOUBLE            |                                                                                                                                                                                                                                                 |
| POST_TRADE_MID_50<br>OOMS_AT_PRIMARY      | PostTradeMid5000<br>msAtPrimary   | DOUBLE                              | DOUBLE            |                                                                                                                                                                                                                                                 |
| POST_TRADE_MID_15<br>OOMS_AT_PRIMARY      | PostTradeMid1500<br>OmsAtPrimary  | DOUBLE                              | DOUBLE            |                                                                                                                                                                                                                                                 |
| POST_TRADE_MID_30<br>OOMS_AT_PRIMARY      | PostTradeMid3000<br>OmsAtPrimary  | DOUBLE                              | DOUBLE            |                                                                                                                                                                                                                                                 |
| POST_TRADE_MID_60<br>OOMS_AT_PRIMARY      | PostTradeMid6000<br>OmsAtPrimary  | DOUBLE                              | DOUBLE            |                                                                                                                                                                                                                                                 |
| POST_TRADE_MID_30<br>OOOMS_AT_PRIMARY     | PostTradeMid3000<br>OOmsAtPrimary | DOUBLE                              | DOUBLE            |                                                                                                                                                                                                                                                 |
| POST_TRADE_MID                            | PostTradeMid                      | DOUBLE                              | DOUBLE            | The mid-point price of the best bid/offer on the Consolidated/National or Primary exchange (as determined by BMLL for region/country) after the trade.                                                                                          |
| POST_TRADE_MID_AT<br>_PRIMARY             | PostTradeMidAtPri<br>mary         | DOUBLE                              | DOUBLE            | The mid-point price of the best bid/offer on the Primary exchange after the trade.                                                                                                                                                              |
| POST_TRADE_BEST_BI<br>D_1V                | PostTradeBestBid1<br>V            | DOUBLE                              | DOUBLE            | The best bid on the Consolidated/National or Primary exchange (as determined by BMLL for region/country) after 1 times the volume of the trade is executed across all venues. The volume clock only counts lit continuous trades across venues. |
| POST_TRADE_BEST_A<br>SK_1V                | PostTradeBestAsk1<br>V            | DOUBLE                              | DOUBLE            | The best offer on the Consolidated/National or Primary exchange (as determined by BMLL for                                                                                                                                                      |

| Field Name<br>(Snowflake /<br>Databricks) | Field Name<br>(Parquet) | Type<br>(Snowflake /<br>Databricks) | Type<br>(Parquet) | Description                                                                                                                                                                                                                                                         |
|-------------------------------------------|-------------------------|-------------------------------------|-------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                                           |                         |                                     |                   | region/country - see Section 1.5) after 1 times the volume of the trade is executed across all venues. The volume clock only counts lit continuous trades across venues.                                                                                            |
| POST_TRADE_BEST_BID_3V                    | PostTradeBestBid3V      | DOUBLE                              | DOUBLE            | The best bid on the Consolidated/National or Primary exchange (as determined by BMLL for region/country) after 3 times the volume of the trade is executed across all venues. The volume clock only counts lit continuous trades across venues.                     |
| POST_TRADE_BEST_ASK_3V                    | PostTradeBestAsk3V      | DOUBLE                              | DOUBLE            | The best offer on the Consolidated/National or Primary exchange (as determined by BMLL for region/country - see Section 1.5) after 3 times the volume of the trade is executed across all venues. The volume clock only counts lit continuous trades across venues. |
| POST_TRADE_BEST_BID_10V                   | PostTradeBestBid10V     | DOUBLE                              | DOUBLE            | The best bid on the Consolidated/National or Primary exchange (as determined by BMLL for region/country) after 10 times the volume of the trade is executed across all venues. The volume clock only counts lit continuous trades across venues.                    |
| POST_TRADE_BEST_ASK_10V                   | PostTradeBestAsk10V     | DOUBLE                              | DOUBLE            | The best offer on the Consolidated/National or Primary exchange (as determined by BMLL for region/country - see Section 1.5) after 10 times the volume                                                                                                              |

| Field Name<br>(Snowflake /<br>Databricks) | Field Name<br>(Parquet) | Type<br>(Snowflake /<br>Databricks) | Type<br>(Parquet) | Description                                                                                                   |
|-------------------------------------------|-------------------------|-------------------------------------|-------------------|---------------------------------------------------------------------------------------------------------------|
|                                           |                         |                                     |                   | of the trade is executed across all venues. The volume clock only counts lit continuous trades across venues. |

### 1.3. Format and file structure

Data is delivered as a single file per market per date, as a parquet file.

- **{YYYY}**: Year
- **{MM}**: Month
- **{DD}**: Date
- **{Product}**: The product you are subscribing
  - TradesPlus
- **{Region}**: The region of the venue such as APAC, AMERICAS, and EMEA
- **{MIC}**: Market Identifier Code (MIC) is a unique four-character code that identifies stock markets and exchanges for trading and referencing computer systems

#### File Structure:

Trades-Plus/MIC/YYYY/MM/DD/trades-plus-MIC-YYYYMMDD.parquet

Note - For US and Canada, Trades Plus presents trades from multiple source venues in a single file. Although generally the value in the MIC column represents both the source of the data and the name of the file, in these two cases the MIC column will just have the singular values @SIP and @CCB respectively, to facilitate ease of access to all relevant trades in those jurisdictions. However, the Tradeld's displayed will be those from the source venues (the individual venue full-depth feeds).

### 1.4. Data arrival times

Full product coverage and arrival times are available at <https://data.bmlltech.com>.

### 1.5. Methodology & Data Decisions

**Aggressor side:** The aggressor side is only provided for executions that can be deterministically mapped to a side of the order book.

**Use of MMT flags:** Multiple flags are taken from the FIX MMT Standard (see <https://www.fixtrading.org/mmt/>). This is provided as is when MMT flags are provided. For venues where MMT is not provided, fields are normalised to that field (for example, the ModificationIndicator)

**BMLL Trade Classifications:** The definition of the Off Book On Exchange classification differs between BMLL's Daily Classified Trades (DCT) data set and Trades Plus for European listings. This change was introduced in Trades Plus to provide a more detailed breakdown of addressable and non-addressable volumes within this classification.

In DCT, the Off Book On Exchange classification includes OTC, Special Price, and Benchmark Price trade types. In Trades Plus, however, the Special Price and Benchmark Price components have been separated into their own classifications, leaving only OTC trades within Off Book On Exchange. The Special Price classification captures trades that may either be flagged as a Non Price Forming Trade (NPFT) or a Trade Not Contributing To Price Discovery (TNCP) - therefore non addressable.

By using a combination of Execution Venue and BMLL Trade Type to identify Off Book trades reported On Exchange, users can still align with the definition applied in Daily Classified Trades.

**Retail identification:** BMLL Trades Plus contains the columns ParticipantType and BMLLParticipantType that can be used to identify 'RETAIL' trades. These are tagged using exchange-specific flags or heuristic methods, where appropriate. The table below details these identifiers for each venue.

| MIC                                      | Indicator              | Notes                                                                                                                                          |
|------------------------------------------|------------------------|------------------------------------------------------------------------------------------------------------------------------------------------|
| XPAR, XAMS, XBRU, XDUB, XLIS, XOSL, XMIL | OriginalTradeType = 20 | This only includes Euronext Best of Book                                                                                                       |
| XSWX                                     | ExecutionVenue = XSEB  | This doesn't include retail trades that may get executed on Swiss-At-Mid (XSWM) or the SIX Central Limit Order Book (XSWX) prior to executions |

|                                                |                                                                                                                                                                                                                                                                                                                  |                                                                                                                                                                                                                                                                                   |
|------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                                                |                                                                                                                                                                                                                                                                                                                  | resulting with an ExecutionVenue of XSEB                                                                                                                                                                                                                                          |
| XEQT                                           | TradeType is 'B', 'S' (VBBO trades), 'b' or 's' (ALP order trades)                                                                                                                                                                                                                                               |                                                                                                                                                                                                                                                                                   |
| XLON                                           | Classification = OFF_BOOK_ON_EXCHANGE, during continuous trading hours, below Standard Market Size (€10,000)                                                                                                                                                                                                     | Inferred                                                                                                                                                                                                                                                                          |
| XETR                                           | TradeCondition = 743                                                                                                                                                                                                                                                                                             | Live from 2024-05-20                                                                                                                                                                                                                                                              |
| CHIX, CEUX                                     | BatsTradeTimingIndicator is 'G' (UK entity) or 'K' (EU entity)                                                                                                                                                                                                                                                   | Live from 2025-09-08                                                                                                                                                                                                                                                              |
| XMAD                                           | L2 feed → BuyTradeType or SellTradeType is '8' or '9'<br>L3 feed → RetailFlag = True                                                                                                                                                                                                                             |                                                                                                                                                                                                                                                                                   |
| XBER, XDUS, XFRA, XHAM, XHAN, XMUN, XSTU, XGAT | Flagged as entirely retail                                                                                                                                                                                                                                                                                       |                                                                                                                                                                                                                                                                                   |
| @SIP                                           | <p>If ExecutionVenue is EDGX or EPRL, then MPIDAttribution = 'RTAL'</p> <p>If ExecutionVenue is FINR, FINN, FINY or FINC, then odd lot (OriginalTradeType contains 'I'), trade price is inside the NBBO but not equal to the midpoint &amp; sub-decimal pricing (trade price has more than 2 decimal places)</p> | <p>This doesn't include PFOF trades by specific wholesalers, i.e. internally crossing aggregated retail orders against a counter-party</p> <p>The daily TRF data received through the SIP feed does not provide transparency on the underlying off-exchange execution venues.</p> |

|      |                                                                               |          |
|------|-------------------------------------------------------------------------------|----------|
| XNSE | AlgoIndicator = 1 (Non-Algo)<br>and ClientIndicator = 3<br>(Non-CP, Non Prop) | Inferred |
| BVMF | OriginalTradeType = 25                                                        |          |

**US Enrichment:** In the US, there are two potential sources of on-exchange trades data - the TAQ feed from the US Consolidated Tape (i.e. the SIP) and the full-depth feeds from the individual venues. The SIP provides condition codes not seen on the venues, while the venues provide colour on lit/dark/periodic auction distribution, as well as aggressor sides. In general, a trade report on the SIP can be matched exactly to a trade published by a venue (except on NYSE prior to 2025-08-25, where the printable trades are added directly from the venue to provide the same level of detail). In cases where the two sources do not match due to fundamental differences in the raw data, the values shown will reflect the data provided by the SIP.

While Trades Plus in the US provides extra colour on lit/dark/periodic auction trades, there are certain trades (marked by specific trade condition codes originating from the SIP) that point to potentially non-addressable or non-price forming activity. Depending on the specific condition code, such trades have been assigned normalised trade types of SpecialPrice or BenchmarkPrice. The relevant codes and their corresponding normalisation are listed below.

| BMLLTradeType | OriginalTradeType<br>(contains) | Meaning                       | Description                                                                                                                                 |
|---------------|---------------------------------|-------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------|
| SpecialPrice  | '7'                             | Qualified<br>Contingent Trade | Execution<br>contingent on all<br>components being<br>executed together;<br>pricing based on<br>relationships<br>among component<br>orders. |
|               | '4'                             | Derivatively Priced           | Trade executed at a<br>price not based on                                                                                                   |

|                |     |                       |                                                                                                                  |
|----------------|-----|-----------------------|------------------------------------------------------------------------------------------------------------------|
|                |     |                       | quoted price and with material terms not reasonably determinable at order commitment (REG NMS 611b7).            |
|                | 'R' | Seller                | Seller's Option transaction: seller can deliver within two to sixty days, often at lower price than Regular Way. |
|                | 'C' | Cash                  | Securities delivered and payment made on the same day.                                                           |
|                | 'Z' | Sold. Out of Sequence | Trade printed or reported out of sequence and at a time other than actual execution time.                        |
|                | 'N' | Next Day Trade        | Securities delivered the first business day after trade date.                                                    |
|                | 'B' | Bunched Trades.       | Multiple odd-lot or round-lot orders combined for simultaneous execution (also called Block trades).             |
| BenchmarkPrice | 'W' | Average Price         | Price reported is based on the                                                                                   |

|  |     |                       |                                                                                  |
|--|-----|-----------------------|----------------------------------------------------------------------------------|
|  |     |                       | average price of all or part of the trading day's transactions.                  |
|  | 'P' | Prior Reference Price | Trade based on a previous price (e.g., more than 90 seconds before report time). |

**US Pre-Open Auctions:** Some US exchanges such as NYSE Arca (ARCX) and NYSE American (XASE) can have auctions in the pre-open session. These can be identified as rows with values BMLLTradeType 'UNCROSSING' and MarketState 'PRE\_OPEN'. These trades have been assigned a classification of AUCTION\_ON\_DEMAND (given that they are scheduled), but can still be differentiated from regular intraday periodic auction trades (such as those on CBOE BYX, BATY) using the MarketState field.

**Primary/Consolidated/National Best Bid Offer:** Quote based fields for fragmented markets are calculated on a region-specific consolidated best bid/offer. For the US and Canada, this is the National Best Bid Offer (NBBO). Note that the Canadian NBBO only provides timestamps up to microsecond precision, so some trades may refer to the same NBBO update. For all other fragmented markets, this is the Consolidated Best Bid Offer (CBBO). For non-fragmented markets, the Primary (equivalent to Venue) Best Bid Offer is referenced.

There is a small subset of trades where the venue BBO will not match with the consolidated BBO even though they are for the same venue. These trades, despite being flagged as lit, cannot be uniquely joined to specific order executions from the lit order book. In this case, the lifted quotes cannot be deterministically identified. Hence the exact state of the consolidated BBO order book view cannot be deterministically identified. To determine the prevailing venue BBO, we use the exchange sequence numbers to reconstruct the sequence of quotes as we receive them from the raw data feed (detailed below). Due to these necessary but different approaches for the generation of BBO and consolidated BBO values, the BBO and consolidated BBO will appear different. for this small subset of trades.

**BBO determination for multi-level sweep trades:** When multiple order book price levels are targeted and reflected as part of one atomic event (same timestamp) in the data - we use the Sequence number along with Trade Timestamp to determine the order of trade events. The Event Number helps to explain whether trades happened as part of one atomic event.

Example:

An aggressive buy order @ market is sent for 300 shares at time stamp 10:00:00.00000. 3 trades occur all at the same time, taking the top 3 levels of the book

| Best Bid Cum Qty | Best Bid Size | Best Bid Price | Best Offer Price | Best Offer Size | Best Offer Cum Qty |
|------------------|---------------|----------------|------------------|-----------------|--------------------|
| 100              | 100           | 100            | 101              | 100             | 100                |
| 200              | 100           | 99             | 102              | 100             | 200                |
| 300              | 100           | 98             | 103              | 100             | 300                |
| 400              | 100           |                |                  | 100             | 400                |
| 500              | 100           |                |                  | 100             | 500                |
| 600              | 100           |                |                  | 100             | 600                |

BBO calculation:

| # | Trade Time     | Event No | End Of Event | Sequence No | Trade Price | Trade Size | Best Bid Price Before | Best Bid Size Before | Best Offer Price Before | Best Offer Size Before |
|---|----------------|----------|--------------|-------------|-------------|------------|-----------------------|----------------------|-------------------------|------------------------|
| 1 | 10:00:00.00000 | 1        |              | 1           | 101         | 100        | 100                   | 100                  | 101                     | 100                    |
| 2 | 10:00:00.00000 | 1        |              | 2           | 102         | 100        | 101                   | 100                  | 102                     | 100                    |
| 3 | 10:00:00.00000 | 1        |              | 3           | 103         | 100        | 102                   | 100                  | 103                     | 100                    |

The BBO can be adjusted to account for the removal of liquidity. Trade Price in this example matches what the Best Offer Price and Size would be after liquidity has been removed.

**Round Lots:** For US markets, the prevailing quote size is provided in terms of number of round lots (converted to shares using the lot size for the instrument) for the National Best Bid Offer (NBBO) based fields, i.e. BestBidSize and BestAskSize. For venue

specific and primary Best Bid Offer, quote size is provided in terms of number of shares, exactly as provided by the underlying data sources.

**OPOL Determination:** The Original Place of Listing (OPOL) may not be available from European data sources in limited scenarios. When the primary market is not known, populating primary and consolidated quote-based fields and analytics is not possible. We therefore determine primary markets for these impacted listings using a heuristic.

In this scenario, fungible listings are established using ISIN and InstrumentCurrencyCode combinations, which may result in listings across 2 or more European primary exchanges. In the example below, the instrument has listings across XAMS, XMIL or XETR, any of which could be the OPOL.

| ISIN         | Ticker | MIC  | Currency |
|--------------|--------|------|----------|
| IE00B945VV12 | VGEU   | XETR | EUR      |
| IE00B945VV12 | VEUR   | XAMS | EUR      |
| IE00B945VV12 | VEUR   | XMIL | EUR      |

We will set the primary based upon a pre-ordered preference of venues for a given currency. For an ISIN trading in EUR (as above), the preference would result in XETR being set as the OPOL - if it appears among the list of fungible venues. The preference of venues has been determined in order of most liquid primary for that currency.

Below is a list of currencies and the order in which an OPOL is determined:

| Currency | OPOL (Preference Order)                              |
|----------|------------------------------------------------------|
| GBP, GBp | XLON, XSWX, XETR, XPAR, XAMS                         |
| CHF      | XSWX, XETR, XPAR, XAMS                               |
| EUR      | XETR, XMIL, XPAR, XAMS, XMAD, XHEL, XCSE, XTAL, XLIS |
| USD      | XLON, XSWX, XAMS, XETR, XPAR, XBRU                   |
| JPY      | XSWX, XAMS, XPAR                                     |
| Other    | XCSE, XSTO, XSWX, XWAR, XBUD                         |

Despite this heuristic to determine an OPOL, the OPOL field within Trades Plus will remain unpopulated - to ensure consistency with what is actually available from source in our reference dataset.

**Classification:** Trades Plus will redefine the Classification of Off Book On Exchange trades to map to trades with BMLLTradeType of OTC only and with ExecutionVenue MIC other than SINT or XOFF. This diverges from the Daily Classified Trades dataset which additionally includes within its designation the following BMLLTradeTypes - Special Price and Benchmark Price. This divergence has been implemented to facilitate a more granular view of Off Book On Exchange activity and segregate the proportion that would generally be considered non-addressable under Special Price and Benchmark Price Classifications, leaving the addressable activity under Off Book On Exchange.

Some markets have pre-open and post-close sessions. Their dynamics vary, depending on the type of trade allowed (continuous order matching/auction/trade at closing price). Where these sessions exist, they have been classified accordingly as follows

| Region | MICs                                                                                           | BMLLTradeType | MarketState | Classification   |
|--------|------------------------------------------------------------------------------------------------|---------------|-------------|------------------|
| US     | EDGA, XCIS, XNAS, XBOS, XNYS, ARCX, BATS, XASE, XPSX, BATY, EDGX, IEXG, MEMX, EPRL, XCHI, LTSE | LIT           | PRE_OPEN    | LIT_PRE_OPEN     |
|        |                                                                                                | LIT           | POST_TRADE  | LIT_POST_TRADE   |
|        | ARCX, XASE                                                                                     | UNCROSSING    | PRE_OPEN    | PRE_OPEN_AUCTION |
| CA     | XCNQ, XCX2, NEON, LYNX, XTSX, XATS, OMGA, CHIC, NEOE, CSE2                                     | LIT           | PRE_OPEN    | LIT_PRE_OPEN     |
|        | XCNQ, XCX2, NEON, LYNX, XTSX, OMGA, XATS, CHIC, XTSE, NEOE,                                    | LIT           | POST_TRADE  | LIT_POST_TRADE   |

|    |                                    |     |            |                     |
|----|------------------------------------|-----|------------|---------------------|
|    | CSE2, XATX                         |     |            |                     |
| IN | XNSE, XBOM                         | LIT | PRE_OPEN   | LIT_OPENING_AUCTION |
| EU | XPAR, XLIS, XMIL, XOSL, XAMS, XBRU | LIT | POST_TRADE | LIT_POST_TRADE      |
|    | XMAD                               | LIT | POST_TRADE | CLOSING_PRICE       |
| KR | XKRX                               | LIT | POST_TRADE | LIT_POST_TRADE      |
| TW | ROCO                               | LIT | POST_TRADE | LIT_POST_TRADE      |
| MX | XMEX                               | LIT | POST_TRADE | CLOSING_PRICE       |
| JP | SBIJ                               | LIT | POST_TRADE | LIT_POST_TRADE      |
| TH | XBKK                               | LIT | POST_TRADE | LIT_POST_TRADE      |

**Markouts and Timestamps:** The publication of trades can be delayed for non-lit venues by a few milliseconds, which is reflected as a difference between TradeTimestampNanoseconds and PublicationTimestampNanoseconds. In order to accurately account for the pre-trade quotes as well as the markouts, we have chosen to merge the trades with the quotes as of the trade timestamp (where necessary). Where the difference between the trade and publication times is more than one day, the quotes and markouts will be null.

Furthermore mid-prices will not be populated where:

- BMLL Trade Type does not fall under LIT, OTC, DARK, REQUEST\_FOR\_QUOTE or UNCROSSING (all trades are counted for US/Canada).
- Market State is outside CONTINUOUS TRADING, AUCTION\_ON\_DEMAND, CONDITIONAL or NOT\_APPLICABLE. For the US and Canada, mid prices are populated whenever an NBBO is available, irrespective of market state. Primary mid prices are populated except at intervals when the market is in an auction state.
- Any amendments or cancellations

### 1.6. Market State Normalisation

BMLL provides a consistent normalisation for market state messages, in order to make cross-venue analysis quick and easy.

The following normalisation states are available

#### Market State

| Value                             | Description                                                                                                                                                                                                                                                |
|-----------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| AUCTION_ON_DEMAND                 | Auctions which take place alongside CONTINUOUS_TRADING. Includes order entry and uncrossing periods.                                                                                                                                                       |
| CLOSED                            | The market is closed so no trading activity can take place.                                                                                                                                                                                                |
| CLOSING_AUCTION                   | Includes order entry and uncrossing periods.                                                                                                                                                                                                               |
| CONDITIONAL                       | An uncrossing state for specific market mechanisms e.g. Turquoise Plato Uncross.                                                                                                                                                                           |
| CONTINUOUS_TRADING                | Main continuous trading session in which orders can be placed and matched. Separate continuous trading occurring before the primary open or after close will be generally indicated with PRE_TRADE and POST_TRADE.                                         |
| CONTINUOUS_TRADING_PRIMARY_CLOSED | A continuous trading session in which orders can be placed and matched on secondary markets, but the primary market is CLOSED. Used for secondary markets only (e.g. a multilateral trading facility in the EU, or alternative trading system in the USA). |
| HALTED                            | Unscheduled trading halts, for example, when a circuit breaker is triggered.                                                                                                                                                                               |
| INTRADAY_AUCTION                  | Scheduled auctions which interrupt CONTINUOUS_TRADING. Includes order entry and uncrossing periods.                                                                                                                                                        |
| NOT_APPLICABLE                    | Used for venues such as trade reporting facilities where the concept of market phase does not apply, as there are no specific market hours.                                                                                                                |
| OPENING_AUCTION                   | Includes order entry and uncrossing periods.                                                                                                                                                                                                               |
| POST_TRADE                        | Market phase following CONTINUOUS_TRADING phase, and generally occurring after the primary CLOSING_AUCTION. This includes trade-at-last phases; such trades can be distinguished using the CLOSING_PRICE bml_trade_type.                                   |

|                     |                                                                                                       |
|---------------------|-------------------------------------------------------------------------------------------------------|
| PRE_OPEN            | Market phase preceding CONTINUOUS_TRADING, and generally prior to OPENING_AUCTION when applicable.    |
| UNKNOWN             | Used when the market phase could not be resolved into one of the known states listed here.            |
| UNSCHEDULED_AUCTION | Unscheduled auctions which interrupt CONTINUOUS_TRADING. Includes order entry and uncrossing periods. |

### BMLL Trade Type

| Value                         | Description                                                                                                                                                                                                                      |
|-------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| BENCHMARK_PRICE               | Trades executed at a publicly available reference price. This includes VWAP, TWAP, EBB0, PBB0, auction reference price trades and other trades marked BENC under MIFID II.                                                       |
| CLOSING_PRICE                 | A trade executed at the closing price resulting from a Market-on-Close (MOC) order.                                                                                                                                              |
| DARK                          | Dark trades result from matches on a dark order book which has either limited pre-trade transparency or is exempt from pre-trade transparency disclosure. An example of this is trades executed on a mid-price book.             |
| LIT                           | Lit trades result from a match on a lit order book with full pre-trade transparency. This group will also include executions of hidden orders that cannot be distinguished from standard lit executions, such as iceberg orders. |
| OTC                           | An over-the-counter (OTC) trade agreed bilaterally between two parties and reported to a trade reporting facility.                                                                                                               |
| REQUEST_FOR_QUOTE             | A trade resulting from a request for quote (RFQ).                                                                                                                                                                                |
| SPECIAL_PRICE                 | Trades which execute at a special price. This includes: negotiated trades, Non Price Contribution to Discovery Indicators trades (marked TNCP under MIFID II), dividends and other technical trades.                             |
| UNCROSSING                    | Uncrossing trades occur when paired quantities are matched at the end of an auction market phase.                                                                                                                                |
| UNKNOWN                       | Used for trades which could not be resolved into one of the known trade types listed here.                                                                                                                                       |
| EXCHANGE_FOR_RELATED_POSITION | Arrangement between two parties whereby a futures position is exchanged for related positions or vice versa.                                                                                                                     |

## 1.7. Venue-specific Original Trade Type

### EUROPE

| Venues                                       | Name of source columns | Description of possible values in original trade type                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
|----------------------------------------------|------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| XETR,<br>XWBO,<br>XBUD,<br>XPRA              | match_type             | 13 : Liquidity Improvement - Cross Trade<br>3 : Manual Trade<br>5 : Uncrossing Trade<br>7 : Auction Trade                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| XAMS<br>XBRU<br>XLIS<br>XMIL<br>XOSL<br>XPAR | original_trade_type    | 1 - Conventional Trade (Cash and Derivatives)<br>2 - Large in Scale (LiS) Trade (Derivatives Only)<br>3 - Basis Trade (Derivatives Only)<br>4 - Large in Scale (LiS) Package Trade (Derivatives Only)<br>5 - Guaranteed Cross Trade (Cash and Derivatives)<br>6 - Against Actual Trade (Derivatives Only)<br>7 - Asset Allocation Trade (Derivatives Only)<br>9 - Exchange for Swap Trade (Derivatives Only)<br>10 - Exchange for Physical Trade - Cash Leg (Cash Only)<br>20 - BoB Trade (Cash Only)<br>21 - SI Trade (Cash Only)<br>22 - AtomX Trade (Derivatives Only)<br>24 - Trade Cancellation (Cash and Derivatives)<br>25 - Out of Market Trade (Cash Only)<br>26 - Delta Neutral Trade - Underlying Cash Leg (Cash Only)<br>27 - Market VWAP Operation Trade (Cash Only)<br>28 - Euronext Fund Service Trade (Cash Only)<br>29 - Secondary Listing Trade (Cash Only)<br>30 - Request for Cross Trade (Derivatives Only)<br>31 - Request for cross strategy Leg Trade (Derivatives Only)<br>32 - Trade Publication (Cash Only)<br>33 - Dark Trade (Cash Only)<br>34 - Delta Neutral Trade - Underlying Future Leg (Derivatives Only) |

|                                                        |            |                                                                                                                                                                                                                                                                                                                                                                                   |
|--------------------------------------------------------|------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| XSTO,<br>XCSE<br>XHEL,<br>XICE,<br>XLIT, XRIS,<br>XTAL | cross_type | 'O': Opening Cross.<br>'I': Scheduled Intraday Cross.<br>'C': Closing Cross.<br>'H': Cross for halted securities.<br>'A': Auction On Demand.                                                                                                                                                                                                                                      |
| XEQT                                                   | trade_type | 'B' – VBBO trade (buy-side aggressor)<br>'S' – VBBO trade (sell side aggressor)<br>'A' – Auction trade<br>'O' – Opening cross trade<br>'C' – Closing cross trade<br>'U' – Uncrossing trade<br>'T' – Consolidated trade (Market by Limit)<br>'N' – Off-book, on-Exchange trade report<br>'b' - ALP order trade (buy-side aggressor)<br>'s' - ALP order trade (sell side aggressor) |

### AMERICAS

| Venues                                | Name of source columns | Description of possible values in original trade type                                                                                                                                                                                                    |
|---------------------------------------|------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| XNYS,<br>ARCX,<br>XASE, XCIS,<br>XCHI | trade_cond_1           | '@' – Regular Sale<br>' ' – (Blank) Regular Sale (NYSE and NYSE MKT only)<br>'C' – Cash (NYSE and NYSE MKT only)<br>'N' – Next Day Trade (NYSE and NYSE MKT only)<br>'R' – Seller (NYSE and NYSE MKT only)                                               |
| XNYS,<br>ARCX,<br>XASE, XCIS,<br>XCHI | trade_cond_2           | ' ' – N/A (space or blank)<br>4 – Derivatively Priced<br>5 – Market Centre Reopening Trade<br>6 – Market Centre Closing Trade<br>9 – Corrected Last Sale Price<br>F – Intermarket Sweep Order (NYSE only)<br>O – Market Center Opening Trade (NYSE only) |
| XNYS,<br>ARCX,<br>XASE, XCIS,<br>XCHI | trade_cond_3           | ' ' – (space) N/A<br>Z – Sold<br>L – Sold Last (NYSE only)<br>T – Extended Hours Trade (Arca, American and National only)<br>U – Extended Hours Sold (Out of Sequence) (Arca, American and National only)                                                |

|                                       |                       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
|---------------------------------------|-----------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| XNYS,<br>ARCX,<br>XASE, XCIS,<br>XCHI | trade_cond_4          | I – Odd Lot Trade<br>' ' – (space, or 0x20) N/A<br>H – Aberrant Trade (NYSE/NYSE MKT only)<br>K – Rule 127 (NYSE/NYSE MKT only)<br>@ – Regular Sale (Arca, American and National only)<br>M – Official Closing Price (Arca, American and National only)<br>Q – Official Open Price (Arca, American and National only)<br>B – Average Price Trade (Arca only)<br>E – Automatic Execution (Arca only)<br>H – Price Variation Trade (Arca only)<br>P – Prior Reference Price (Arca only)<br>V – Stock-Option Trade (Arca only)<br>X – Cross Trade (Arca only) |
| XNAS,<br>XPSX,<br>XBOS                | original_trade_type   | P - Non-displayed trade<br>Q - Cross Trade                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| BATS, BATY,<br>EDGA, EDGX             | original_trade_type   | '0' - Lit.<br>'42' - Hidden Liquidity.<br>'43' - Hidden Liquidity.<br>'150' - Auction On Demand.                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| MEMX,<br>EPRL                         | msg_original_type     | '0' – Lit<br>'10' – Dark Trade<br>'14' – Dark Trade                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| @SIP                                  | sequence_type         | <space> - No extended hours or sold out of sequence.<br>L - sold last (late reporting).<br>T - Extended hours trade (Form T).<br>U - Extended hours sold. Out of sequence.<br>Z - Sold. Out of sequence.                                                                                                                                                                                                                                                                                                                                                   |
| @SIP                                  | settlement_conditions | <space> or @ - For regular trades.<br>C - Cash trades.<br>N - Next day trades.<br>R - Seller trades.<br>Y - Yellow flag.                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| @SIP                                  | sro_trade_detail      | UTP origin only<br>1 - Stopped stock.<br>A - Acquisition<br>B - Bunched trade.<br>D - Distribution.<br>G - Bunched sold trade.                                                                                                                                                                                                                                                                                                                                                                                                                             |

|            |                      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
|------------|----------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|            |                      | <p>K - Rule 155.<br/>S - Split trade.<br/>W - Average price.</p> <p>CTA origin only<br/>B - Average price.<br/>K - Rule 127 (Nyse Only) or Rule 155 (Nyse American only).</p> <p>Both of them<br/>&lt;space&gt; - No SRO required trade detail.<br/>E - Automation execution.<br/>H - Price variation trade.<br/>I - Odd lot trade.<br/>M - Market centre official close price.<br/>P - Prior reference price.<br/>Q - Market centre official open price.<br/>V - Contingent trade.<br/>X - Cross trade.</p> |
| @SIP       | trade_through_reason | <p>&lt;space&gt; - No trade through exempt reason.<br/>F - Intermarket sweep order.<br/>O - Market centre opening trade.<br/>4 - Derivatively priced.<br/>5 - Market centre reopening trade.<br/>6 - Market centre closing trade.<br/>7 - Qualified contingent trade (QCT).<br/>8 - Placeholder for 611 exemption.</p>                                                                                                                                                                                       |
| XTSE, XTSX | trade_type           | <p>1 – Trade<br/>1018 – Odd Lot Trade. This trade was between two orders on the odd lot book.<br/>1009 – After Hours. This trade was during the extended trading session<br/>1000 – Block. This trade was a block trade, i.e. has volume greater than or equal to 10,000 shares</p>                                                                                                                                                                                                                          |
| XTSE, XTSX | cross_type           | <p>0 – Not applicable<br/>1 – Internal<br/>2 – Basis<br/>3 – Contingent<br/>4 – Special Trading Session<br/>5 – VWAP<br/>6 – Regular</p>                                                                                                                                                                                                                                                                                                                                                                     |

|                        |                 |                                                                                                                                                                                          |
|------------------------|-----------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| CHIC                   | trade_cond_1    | 0 – Regular Trade<br>1 – Bypass (Crosses Only)<br>2 – M-ELO (From 2024-12-16 only)<br>3 – CXD Pure-Stream (From 2024-12-16 only)                                                         |
| CHIC                   | trade_cond_2    | 0 – Regular Trade<br>1 – Basis<br>3 – VWAP<br>5 – Contingent<br>6 – Internal<br>12 – Derivative Related<br>16 – Intentional                                                              |
| XCX2                   | hidden_trade    | 'H' – Hidden Trade                                                                                                                                                                       |
| XCX2                   | cross_type      | 'B' – Basis Cross Trade<br>'C' – Contingent Cross Trade<br>'D' – Derivative Related Cross Trade<br>'I' – Internal Cross Trade<br>'V' – VWAP Cross Trade<br>'X' – Intentional Cross Trade |
| XCX2                   | trade_attribute | 'B' – Bypass Trade<br>'C' – Market-on-Close Trade<br>'L' – Midpoint Extended Life Order (M-ELO) Trade                                                                                    |
| NEOE,<br>NEON,<br>NEOD | order_book_type | 3 – NEO-L<br>4 – NEO-N<br>5 – NEO-D<br>6 – Cross<br>7 – SST                                                                                                                              |
| NEOE,<br>NEON,<br>NEOD | trade_type      | 0 – Post-Open Trade (Continuous Trade)<br>1 – Auction Trade Bulk<br>2 – Auction Trade, Individual<br>9 – Trade Cancellation<br>11 – Trade Correction                                     |
| NEOE,<br>NEON,<br>NEOD | cross_type      | 5 – Internal Cross<br>11 – Basis Cross<br>12 – Contingent Cross<br>14 – VWAP Cross<br>15 – National Cross<br>16 – Bypass Cross<br>17 – Non-NEO Cross                                     |

|      |                 |                                                                                                                                                                                                                                                                |
|------|-----------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|      |                 | 18 – Derivative Cross<br>19 – Closing Price Publication (Closing Price broadcast, not a trade)                                                                                                                                                                 |
| XCNQ | trade_cond_2    | Bit-like string field, with each digit representing a trade condition flag.<br>Digit value 1 = False, 2 = True<br>1xxxx – Sets Last<br>x1xxx – Opening Trade<br>xx1xx – CCP<br>xxx1x – Bypass<br>xxxx1 – Odd Lot                                               |
| LYNX | hidden_trade    | 'H' – Hidden Trade                                                                                                                                                                                                                                             |
| LYNX | cross_type      | 'D' – Derivative Cross Trade<br>'I' – Internal Cross Trade<br>'M' – Intentional Cross Trade                                                                                                                                                                    |
| LYNX | trade_attribute | 'B' – Bypass trade                                                                                                                                                                                                                                             |
| OMGA | trade_cond_1    | 0 – No conditions<br>1 – Basis<br>2 – Special Trading Session<br>3 – VWAP<br>4 – Dark Pool Trade<br>5 – Contingent Cross<br>6 – Internal Cross<br>7 – National Cross<br>11 – Regular Cross<br>13 – Odd Lot Trade<br>16 – Intentional<br>18 – CCP Closing Price |
| XATS | trade_cond_1    | 0 – No conditions<br>1 – Basis<br>2 – Special Trading Session<br>3 – VWAP<br>4 – Dark Pool Trade<br>5 – Contingent Cross<br>6 – Internal Cross<br>7 – National Cross                                                                                           |

|      |               |                                                                                                                                                                                            |
|------|---------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|      |               | 11 – Regular Cross<br>13 – Odd Lot Trade<br>16 – Intentional<br>18 – CCP Closing Price                                                                                                     |
| @CCB | trade_cond_1  | 0 – No conditions<br>1 – Basis<br>2 – Special Trading Session<br>3 – VWAP<br>4 – Dark Pool Trade<br>5 – Contingent Cross<br>6 – Internal Cross<br>7 – National Cross<br>11 – Regular Cross |
| BVMF | auction_trade | True – Is an auction trade<br>False – Is not an auction trade                                                                                                                              |
| BVMF | trade_cond_1  | 0 – Trade made in electronic session<br>1 – Cross Trade<br>24 – After-Market Trade<br>25 – Retail Liquidity Trade - Private Book<br>26 – Out-of-Sequence Trade                             |

### MIDDLE EAST & AFRICA

| Venues | Name of source columns | Description of possible values in original trade type                                                                                                                                                                                                                       |
|--------|------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| XJSE   | original_trade_type    | 0 – Unknown<br>1 – Trade<br>17 – Post Contra Trade (Correction of previous day's published off-book trade)<br>65 – Volatility Auction<br>67 – Closing Auction<br>69 – Reopening Auction<br>75 – Intra-Day Auction<br>76 – Futures Close Out Auction<br>79 – Opening Auction |

|      |              |                                                                                                                                                                                                                                                                                                                                                       |
|------|--------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|      |              | 2001 – Block Trade<br>2002 – Corporate Finance Trade<br>2003 – Late Trade (After Hours Trade)<br>2006 – Off Order Book Principal Trade<br>2009 – Portfolio Trade<br>3001 – Book Build                                                                                                                                                                 |
| A2XX | trade_type   | 2 – A trade against hidden or reserve quantity in the continuous trading order book<br>3 – Market at Close (MaC) Trade<br>4 – LIS Cross Trade<br>5 – Benchmark Cross Trade<br>6 – Auction on Demand (AoD) Trade                                                                                                                                       |
| XIST | trade_cond_1 | 1 – Automatch Trade<br>Other – 4 big classes of trading conditions <ul style="list-style-type: none"> <li>• Trade report cannot be done</li> <li>• Trade report for wholesale transactions</li> <li>• Trade report can be done from last traded price</li> <li>• Trade report can be done from last price with a +/- change in price range</li> </ul> |
| XTAE | trade_source | 2 – Dark Book                                                                                                                                                                                                                                                                                                                                         |

### ASIA PACIFIC

| Venues | Name of source columns | Description of possible values in original trade type                |
|--------|------------------------|----------------------------------------------------------------------|
| XBOM   | trade_cond_1           | NOT AVAILABLE CURRENTLY<br><br>0 – No Condition<br>1 – Odd Lot Trade |
| XBOM   | trade_cond_5           | 0 – No Condition<br>1 – Bunched Trade Indicator                      |

|      |                                 |                                                                                                                                                                                                                  |
|------|---------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| XHKG | original_trade_type             | 0 – Automatch Normal<br>4 – Late Trade<br>22 – Non-Direct Off Exchange<br>100 – Automatch Internalised<br>101 – Direct Off Exchange<br>102 – Odd Lot<br>103 – Auction<br>104 – Overseas                          |
| XTKS | message_id                      | C – Order Executed with Price<br>E – Order Executed<br>K – Execution Summary<br>TI – ToSTNeT                                                                                                                     |
| XTKS | pricing_method                  | 0 – –<br>1 – Itayose Method                                                                                                                                                                                      |
| XTKS | triggered_side                  | B – Buy Order<br>S – Sell Order                                                                                                                                                                                  |
| XTKS | market_identification_flag      | 1 – Single Issue Transaction<br>2 – Basket Transaction<br>3 – Closing Price Transaction<br>4 – (from BMLL) Off-Auction Own Share Repurchase Trading                                                              |
| XTKS | transaction_identification_flag | " – Ordinary Transaction<br>1 – Day Transaction<br>2 – Ordinary Transaction (VWAP Transaction)<br>3 – Day Transaction (VWAP Transaction)                                                                         |
| XTKS | price_code                      | " – For transactions other than closing price transactions, trading halts and releases from trading halts<br>01 – Previous Day Closing Price<br>11 – Morning Session Closing Price<br>31 – Today's Closing Price |
| XASX | trade_source                    | 1 – Lit Book<br>2 – Dark Book                                                                                                                                                                                    |

|      |                   |                                                                                                                                                                                                                                                                                                                         |
|------|-------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| XASX | occurred_at_cross | Y – Yes, trade occurred in an auction<br>N – No, trade occurred in continuous matching                                                                                                                                                                                                                                  |
| CHIA | trade_report_type | B – Block Trade<br>P – Large Portfolio Trade<br>T – Large Principal Transaction<br>S – Trades with Price Improvement<br>L – Permitted Trade During Post Trading Hours Period<br>M – Permitted Trade During Pre Trading Hours Period<br>E – Out of Hours Trade<br>F – ETF Trade Report for Unit Creations or Redemptions |
| CHIA | trade_designation | Valid only for on-exchange executions, space otherwise<br><br>C – CXAC (Limit)<br>P – CXAP (Midpoint)<br>N – CXAN (Near Point)<br>F – CXAF (Far Point)<br>M – CXAM (MOC)<br>B – CXAB (BIDS Block Size)<br>I – CXAI (BIDS Price Improved)                                                                                |
| CHIA | trade_source      | 1 – Lit Book<br>2 – Dark Book<br>3 – Off Book                                                                                                                                                                                                                                                                           |
| XSES | trade_cond_1      | 0 – No Condition<br>1 – Late Trade<br>2 – Internal Trading/Crossing<br>4 – Bulletin Board Table<br>17 – Off Market<br>22 – Buy White                                                                                                                                                                                    |
| XSES | trade_cond_3      | 0 – No Information<br>1 – Married Trade<br>2 – All Or None<br>4 – Part of a Combo Match                                                                                                                                                                                                                                 |
| XSES | trade_cond_5      | 1 – Matched by system automatically<br>3 – Matched outside exchange, different brokers, trade report; married trade<br>5 – Matched outside exchange, one broker, trade report, crossing; married trade<br>20 – Deal made at the end of an auction                                                                       |

|      |                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
|------|-------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| ROCO | trade_cond_1      | 0 – Ordinary Transaction (Normal Trade), Ordinary Buy, Ordinary Sell<br>1 – Ordinary Transaction (Normal Trade), Ordinary Buy, Floor Sell<br>2 – Ordinary Transaction (Normal Trade), Ordinary Buy, Ceiling Sell<br>3 – Ordinary Transaction (Normal Trade), Floor Buy, Ordinary Sell<br>4 – Ordinary Transaction (Normal Trade), Floor Buy, Floor Sell<br>5 – Ordinary Transaction (Normal Trade), Floor Buy, Ceiling Sell<br>6 – Ordinary Transaction (Normal Trade), Ceiling Buy, Ordinary Sell<br>7 – Ordinary Transaction (Normal Trade), Ceiling Buy, Floor Sell<br>10 – Ordinary Transaction (Normal Trade), Ceiling Buy, Ceiling Sell<br>11 – Floor Transaction (Down Limit Trade), Ordinary Buy, Ordinary Sell<br>12 – Floor Transaction (Down Limit Trade), Ordinary Buy, Floor Sell<br>13 – Floor Transaction (Down Limit Trade), Ordinary Buy, Ceiling Sell<br>14 – Floor Transaction (Down Limit Trade), Floor Buy, Ordinary Sell<br>15 – Floor Transaction (Down Limit Trade), Floor Buy, Floor Sell<br>16 – Floor Transaction (Down Limit Trade), Floor Buy, Ceiling Sell<br>17 – Floor Transaction (Down Limit Trade), Ceiling Buy, Ordinary Sell<br>20 – Floor Transaction (Down Limit Trade), Ceiling Buy, Floor Sell<br>21 – Floor Transaction (Down Limit Trade), Ceiling Buy, Ceiling Sell<br>22 – Ceiling Transaction (Up Limit Trade), Ordinary Buy, Ordinary Sell<br>23 – Ceiling Transaction (Up Limit Trade), Ordinary Buy, Floor Sell<br>24 – Ceiling Transaction (Up Limit Trade), Ordinary Buy, Ceiling Sell<br>25 – Ceiling Transaction (Up Limit Trade), Floor Buy, Ordinary Sell<br>26 – Ceiling Transaction (Up Limit Trade), Floor Buy, Floor Sell<br>27 – Ceiling Transaction (Up Limit Trade), Floor Buy, Ceiling Sell<br>30 – Ceiling Transaction (Up Limit Trade), Ceiling Buy, Ordinary Sell<br>31 – Ceiling Transaction (Up Limit Trade), Ceiling Buy, Floor Sell<br>32 – Ceiling Transaction (Up Limit Trade), Ceiling Buy, Ceiling Sell<br>33 – Ordinary Transaction (Normal Trade), Odd Lot Trade<br>34 – Floor Transaction (Down Limit Trade), Odd Lot Trade<br>35 – Ceiling Transaction (Up Limit Trade), Odd Lot Trade<br>40 – Off Market Trade<br>41 – Auction Trade during pre-open or closing auction |
| ROCO | trade_block_count | Number of block trades for the session                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| XBKK | trade_cond_1      | 0 – Auto Match<br>1 – Trade Report<br>2 – Auction<br>3 – Combo to Combo<br>4 – Odd Lot Trade                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| XBKK | trade_cond_2      | 0 – Auction Deal / Automatic Match<br>10-19 – TR_BIGLOT<br>20-29 – TR_BUYIN<br>30-39 – TR_OFFHOUR<br>40-49 – TR_FOREIGN                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |

|  |  |                                                                       |
|--|--|-----------------------------------------------------------------------|
|  |  | 50-99 – Other<br>100-199 – Normal<br>200-229 – EFP<br>230-249 – Other |
|--|--|-----------------------------------------------------------------------|

### 1.8. Classification Types

BMLL provides volumes segmented by normalised trade classifications determined using a possible combination of MMT flags, market states and proprietary exchange fields. This provides an intuitive way to analyse and understand liquidity fragmentation trends and changes to market structure.

The following classifications are available

#### Classifications

| Value                      | Description                                                                                                                                                              |
|----------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| AUCTION_ON_DEMAND          | Trade executed in an auction that occurs in an order book separate from the main order book (not blocking continuous trading). This is also known as a periodic auction. |
| BENCHMARK_PRICE            | Trade executed on exchange according to a mechanism where reference price is determined in advance.                                                                      |
| CLOSING_PRICE              | Trade executed on exchange at closing price.                                                                                                                             |
| DARK_ABOVE_LIS             | Trade executed on a non-lit venue above large in scale threshold (LIS).                                                                                                  |
| DARK_BELOW_LIS             | Trade executed on a non-lit venue below large in scale threshold (LIS).                                                                                                  |
| DARK_CONDITIONAL_ABOVE_LIS | Trade executed on a non-lit venue above LIS when initial matching was potentially subject to other conditions (cf. Plato Block Discovery + Plato Uncross).               |
| DARK_CONDITIONAL_BELOW_LIS | Trade executed on a non-lit venue below LIS when initial matching was potentially subject to other conditions (cf. Plato Block Discovery + Plato Uncross).               |
| LIT_CLOSING_AUCTION        | Trade executed during the primary closing auction.                                                                                                                       |

|                              |                                                                                                                                                                                                                      |
|------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| LIT_CONTINUOUS               | Traditional lit continuous trading.                                                                                                                                                                                  |
| LIT_INTRADAY_AUCTION         | Trade executed during a scheduled auction during the day which is not the opening or the closing auction and that blocks continuous trading.                                                                         |
| LIT_OPENING_AUCTION          | Trade executed during the primary opening auction.                                                                                                                                                                   |
| LIT_UNSCHEDULED_AUCTION      | Trade executed during an auction during the day which is not the opening or the closing auction, blocks continuous trading and is not normally scheduled. This is typically a volatility or circuit breaker auction. |
| LIT_PRE_OPEN                 | Trade executed during the pre-open session in continuous order matching form.                                                                                                                                        |
| LIT_POST_TRADE               | Trade executed during the post-trade session in continuous order matching form.                                                                                                                                      |
| OFF_BOOK_ON_EXCHANGE         | Trade off book on exchange, complying with on exchange rules.                                                                                                                                                        |
| OTC                          | Over the counter trade.                                                                                                                                                                                              |
| POST_TRADE_UNCROSSING        | Uncrossing running concurrently to primary closing auction. An example would be the CBOE 3C mechanism.                                                                                                               |
| PRE_OPEN_AUCTION             | Trade executed during the pre-open session through an auction.                                                                                                                                                       |
| REQUEST_FOR_QUOTE_ABOVE_LIS  | Trade executed via a request for quote mechanism and a notional value above LIS.                                                                                                                                     |
| REQUEST_FOR_QUOTE_BELOW_LIS  | Trade executed via a request for quote mechanism and a notional value below LIS.                                                                                                                                     |
| SI_ADDRESSABLE_ABOVE_LIS     | Trade executed on an SI above LIS and matched the definition of addressable.                                                                                                                                         |
| SI_ADDRESSABLE_BELOW_LIS     | Trade executed on an SI below LIS and matched the definition of addressable.                                                                                                                                         |
| SI_NON_ADDRESSABLE_ABOVE_LIS | Trade executed on an SI above LIS and didn't match the definition of addressable.                                                                                                                                    |
| SI_NON_ADDRESSABLE_BELOW_LIS | Trade executed on an SI below LIS and didn't match the definition of addressable.                                                                                                                                    |
| SPECIAL_PRICE                | Other special price: Negotiated trades, dividends, generally not accessible to all market participants.                                                                                                              |