Cboe Titanium Europe Delayed Transparency Files Specification

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Contents

1 Glossary

Term	Definition
APA	Approved Publication Arrangement – a service authorised to publish trade reports on behalf of investment firms
BXE	Cboe Europe equities exchange operating under UK regulation
CXE	Cboe Europe equities exchange operating under UK regulation
DXE	Cboe Europe equities exchange operating under EU regulation (Netherlands)
ESMA	European Securities and Markets Authority – the EU securities and markets regulatory body
ETC	Exchange Traded Commodity – a debt security tracking commodity prices
ETF	Exchange Traded Fund – a pooled investment security that tracks an index, sector, or asset
ETN	Exchange Traded Note – an unsecured debt security tracking an underlying asset or index
FCA	Financial Conduct Authority – the UK financial regulatory body
ISIN	International Securities Identification Number – a 12-character alphanumeric code uniquely identifying a security
MIC	Market Identifier Code – a 4-character code identifying trading venues and markets
MiFID II	Markets in Financial Instruments Directive II – EU legislation governing investment services
MiFIR	Markets in Financial Instruments Regulation – EU regulation on market transparency
PAB	Periodic Auction Book – a trading mechanism where orders are matched at discrete intervals
RTS 1	ESMA Commission Delegated Regulation 2017/587 (EU) and FCA RTS 1 (UK), specifying pre-trade and post-trade transparency requirements for equity instruments (shares, depositary receipts, ETFs, certificates and other similar financial instruments)
RTS 2	ESMA Commission Delegated Regulation 2017/583 (EU) and FCA RTS 2 (UK), specifying pre-trade and post-trade transparency requirements for non-equity instruments (including ETCs and ETNs)
SI	Systematic Internaliser – an investment firm executing client orders on own account outside a trading venue
3C	Cboe Closing Cross – Lit auction available after continuous trading ceases

2 Introduction

2.1 Overview

This specification describes the Cboe Europe Delayed Transparency Files, which provide 15-minute delayed pre-trade and post-trade transparency data in accordance with EU and UK regulatory requirements under MiFIR and the RTS on Reasonable Commercial Basis (RTS RCB).

The Delayed Transparency Files deliver data for:

- **Equities and ETFs** – according to RTS 1 regulations.
- **ETCs and ETNs** – according to RTS 2 regulations.

On all Cboe Europe trading venues (BXE, CXE, DXE), Cboe Europe APA facilities for off-exchange trade reports, and Systematic Internaliser quoting.

2.2 Regulatory Context

The Delayed Transparency Files are designed to comply with the following regulatory requirements:

- **RTS RCB** – Commission Delegated Regulation on Reasonable Commercial Basis, Articles 23-25, specifying access to delayed market data
- **Article 13 MiFIR** – Obligation to make pre-trade and post-trade data available on a reasonable commercial basis
- **RTS 1** – Post-trade transparency requirements for equity instruments
- **RTS 2** – Post-trade transparency requirements for non-equity instruments

2.3 Key Requirements

Per RTS RCB, the delayed market data will be:

- Made available **free of charge**
- Provided **15 minutes after** real-time publication
- Accessible **without registration** or user identification
- Available in **machine-readable and human-readable** format
- Provided on a **non-discriminatory basis**

2.4 Document Conventions

Throughout this document:

- Field names are shown in **bold**
- ASCII field values use `monospace` formatting
- EU-specific requirements are marked with [EU]
- UK-specific requirements are marked with [UK]

2.5 File Variants

This specification covers the 15-minute delayed transparency files. A separate specification exists for the commercially available real-time files: *Cboe Europe Aggregated Depth File Specification*.

3 Files Overview

3.1 Delay Mechanism

All data in the Delayed Transparency Files is published 15 minutes after the corresponding real-time publication, in compliance with the definition of “delayed market data” under Article 1(c) RTS RCB.

3.2 Data Delivery

3.2.1 File-Based Access

Delayed data is delivered via publicly accessible files:

- **Update frequency**: New data made available in new per-minute files throughout the trading day
- **Daily file**: Where applicable, contains all delayed data for the trading day, available at the end of the day
- **Availability**: Data available until and including the next business day
- **Format**: CSV (comma-separated values)

3.2.2 Access Method

- **Public webpage**: Available at: `https://www.cboe.com/europe/equities/transparency_data/`
- **No registration**: No login, password, or user identification required
- **No restrictions**: No CAPTCHA, geo-blocking, or throttling

Data will remain available until and including the following business day.

3.3 Data Scope

3.3.1 Pre-Trade Transparency Data

Delayed pre-trade transparency data consists of Cboe proprietary information based on trading activities observed in real-time, with publication delayed by 15 minutes:

- Continuous limit order book (CLOB) trading: the aggregate number of orders and the shares, depositary receipts, ETFs, certificates and other similar financial instruments that they represent at each price level for up to the five best bid and offer price levels
- Periodic auction systems (PAB): the price at which the auction trading system would best satisfy its trading algorithm in respect of shares, depositary receipts, ETFs, certificates and other similar financial instruments traded on the exchange and the volume that would potentially be executable at that price by participants in that system
- Systematic Internaliser quotes: best bid and offer prices with quantities

Note: Dark books are exempt from pre-trade transparency requirements and therefore are not included in the pre-trade transparency data.

3.3.2 Post-Trade Transparency Data

Post-trade transparency data consists of executed transaction information, delayed by 15 minutes. See Section 5 for the complete field definitions.

3.4 Regulatory References

This files message formats complies with the following regulatory technical standards:

- **RTS 1** – Commission Delegated Regulation (EU) 2017/587, as amended
  - Pre-trade: Table 1b (actionable indications of interest for equity instruments)
  - Post-trade: Annex I Table 3 (details of transactions in equity instruments)
- **RTS 2** – Commission Delegated Regulation (EU) 2017/583, as amended
  - Pre-trade: Table 1 (pre-trade transparency for non-equity instruments)
  - Post-trade: Table 2 (details of transactions in non-equity instruments)

For UK venues, the files complies with the equivalent FCA requirements which are substantively aligned with the EU regulations listed above.

3.5 Venues Covered

Venue	Segment MIC	Description
BXE	BATS	Cboe Europe – BXE Lit Book
CXE	CHIX	Cboe Europe – CXE Lit Book
DXE	CEUX	Cboe Europe – DXE Lit Book
BXE	BATD	Cboe Europe – BXE Dark Book
CXE	CHID	Cboe Europe – CXE Dark Book
DXE	CEUD	Cboe Europe – DXE Dark Book
BXE	BATP	Cboe Europe – BXE Periodic Auction Book
DXE	BEUP	Cboe Europe – DXE Periodic Auction Book
BXE	BATF	Cboe Europe – BXE Off-Book Trade Reports
CXE	CHIO	Cboe Europe – CXE Off-Book Trade Reports
DXE	CEUO	Cboe Europe – DXE Off-Book Trade Reports
BXE	LISX	Cboe BIDS Europe – BIDS UK LIS MTF Trade Reports
DXE	LISZ	Cboe BIDS Europe – BIDS Europe LIS MTF Trade Reports
BXE	XWAP	Cboe BIDS Europe – BIDS UK VWAP MTF Trade Reports
DXE	VWAP	Cboe BIDS Europe – BIDS Europe VWAP MTF Trade Reports
SIS	SINT	Cboe Systematic Internaliser Quoting Venue
APA	CAPA	Cboe NL APA Trade Reports
APA	BOTC	Cboe UK APA Trade Reports

Cboe supports reporting of other MTF services' trade reports (e.g., MTF dark book trades) via Cboe's APA services. Where MTFs report trades via Cboe's APAs, these shall be reported with the venue of execution field populated as the MTF's segment MIC. These trades are specifically are referred to as **MTF Trade Reports** subsequently in this specification.

N.B. For Systematic Internaliser quotes (i.e. pre-trade messages), a single MIC is not applicable as each Systematic Internaliser firm will be quoting under its own MIC.

3.6 Data Format

The Delayed Transparency Files deliver data in ASCII format with the following characteristics:

- **Character encoding**: UTF-8

- **Field separator**: Comma (,)
- **Record separator**: Newline (LF)
- **Date/Time format**: ISO 8601 with microsecond precision (YYYY-MM-DD HH:MM:SS.ffffff)
- **Numeric values**: Decimal notation without thousands separators
- **Price values**: Decimal notation without thousands separators. Prices will be reported with 4 decimal places for on-exchange trades, 6 decimal places for SI quotes, and 7 decimal places for APA trade reports
- **Field lengths**: Fields are variable length up to the maximum length specified in the field tables

4 Pre-Trade Transparency Data

This section defines the pre-trade transparency fields for delayed data. Pre-trade data provides current order book information including bid/offer prices and depths, delayed by 15 minutes.

4.1 On-Exchange Trading

On-exchange pre-trade data covers three trading mechanisms: Lit continuous limit order book (CLOB) trading, Periodic Auction Book (PAB) trading, and Cboe's Closing Cross (3C) auctions. All three mechanisms share the message format described below, and are identified via the Trading System and Trading System Phase fields (see Section 8).

Depth of book reporting varies by venue and mechanism – see Section 4.3 for full detail.

Price Level Invalidation: For pre-trade files reporting prices to a depth greater than top-of-book - when a previously reported price level moves outside of the top depth display or is removed (e.g., due to execution, modification, or cancellation), it will be reported as a price level row for the corresponding invalidated price with a quantity and order count of zero.

Note: Dark books are exempt from pre-trade transparency requirements and therefore are not included in the pre-trade transparency data.

#	Field	Max Length	Description
1	Update Date and Time	26	Date and time when the order was received, cancelled, or modified. Specified to microsecond precision in the form YYYY-MM-DD HH:mm:ss.ffffff.
2	Instrument Identification Code	12	ISIN identifying the financial instrument
3	UMTF Symbol	8	Uniform symbol name identifying traded symbol and its primary listing exchange
4	Side	4	Order book side: `BUYL` (buy) or `SELL` (sell)
5	Price	18	Price of orders excluding commission and accrued interest. Provided for 5 levels of depth.
6	Price Currency	3	ISO 4217 currency code (e.g., `EUR`, `GBP`)
7	Price Notation	4	`MONE` (monetary value), `PERC` (percentage), `YIEL` (yield), or `BAPO` (basis points)
8	Quantity	18	Number of units at the price level
9	Quantity Currency	3	Currency if quantity is expressed as nominal/-monetary value
10	Aggregated Number of Orders and Quotes	18	Number of aggregated orders and quotes at the price level
11	Venue	4	Segment MIC of the trading venue
12	Trading System	4	Type of trading system (see Section 8): `CLOB`, `QDTS`, `PATS`, `RFQT`, `HYBR`, or `OTHR`
13	Trading System Phase	4	Current trading phase (see Section 8): `COTR`, `SOAU`, `SCAU`, `ODAU`, `OMST`, etc.
14	Publication Date and Time	26	Timestamp when data was published. Specified to microsecond precision in the form YYYY-MM-DD HH:mm:ss.ffffff.

Example Message:

```
2026-01-08 14:30:15.123456,DE0005190003,BMWd,BUYL,125.5000,EUR,MONE,1500,EUR,12,CEUX,CLOB,COTR
↪ ,2026-01-08 14:30:15.123457
```

Example 5 Level of Depth Display:

```
2026-01-08 14:30:15.123456,DE0005190003,BMWd,SELL,119.5000,EUR,MONE,1500,EUR,1,CEUX,CLOB,COTR
↪ ,2026-01-08 14:30:15.123457
2026-01-08 14:30:15.123457,DE0005190003,BMWd,SELL,120.0000,EUR,MONE,1500,EUR,5,CEUX,CLOB,COTR
↪ ,2026-01-08 14:30:15.123458
2026-01-08 14:30:15.123458,DE0005190003,BMWd,SELL,120.2500,EUR,MONE,1500,EUR,8,CEUX,CLOB,COTR
↪ ,2026-01-08 14:30:15.123459
2026-01-08 14:30:15.123459,DE0005190003,BMWd,SELL,120.5000,EUR,MONE,1500,EUR,3,CEUX,CLOB,COTR
↪ ,2026-01-08 14:30:15.123460
2026-01-08 14:30:15.123460,DE0005190003,BMWd,SELL,121.0000,EUR,MONE,1500,EUR,5,CEUX,CLOB,COTR
↪ ,2026-01-08 14:30:15.123461
```

Example Periodic Auction Message:

```
2026-01-08 14:35:25.123456,DE0005190003,BMWd,BUYL,123.2500,EUR,MONE,5500,EUR,10,BEUP,PATS,ODAU
↪ ,2026-01-08 14:35:25.123457
```

Example Closing Cross Message:

```
2026-01-08 16:35:15.123456,DE0005190003,BMWd,SELL,121.7500,EUR,MONE,600,EUR,1,CEUX,PATS,OMST
↪ ,2026-01-08 16:35:15.123457
```

Example Price Level Invalidation Message:

```
2026-01-08 14:30:20.123456,DE0005190003,BMWd,SELL,121.0000,EUR,MONE,0,EUR,0,CEUX,CLOB,COTR
↪ ,2026-01-08 14:30:20.123457
```

4.2 SI Quotes

SI quotes are published as one row per side, for each distinct registered Systematic Internaliser, distinguished by the Venue field (i.e. each SI's MIC forms part of the row's key). As noted above, no price level invalidation will be shown for prices moving outside of the top-of-book. The prices will be replaced by a subsequent row indicating the new top-of-book price.

#	Field	Max Length	Description
1	Update Date and Time	26	Date and time of quote update. Specified to microsecond precision in the form YYYY-MM-DD HH:mm:ss.ffffff.
2	Instrument Identification Code	12	ISIN identifying the financial instrument
3	UMTF Symbol	8	Uniform symbol name identifying traded symbol and its primary listing exchange
4	Side	4	Order book side: `BUYL` (buy) or `SELL` (sell)
5	Price	18	Quoted price for the given side
6	Price Currency	3	ISO 4217 currency code
7	Quantity	18	Quoted quantity for the given side
8	Venue	4	MIC of the Systematic Internaliser
9	Publication Date and Time	26	Timestamp when data was published. Specified to microsecond precision in the form YYYY-MM-DD HH:mm:ss.ffffff.

Example Message:

```
2026-01-08 14:45:00.123456,GB00B16GWD56,BARCl,BUYL,125.4500,GBP,5000,GSIL,2026-01-08
↪ 14:45:00.123457
2026-01-08 14:45:00.123456,GB00B16GWD56,BARCl,SELL,125.5500,GBP,5000,GSIL,2026-01-08
↪ 14:45:00.123457
```


4.3 Regulatory Applicability

Pre-trade transparency data complies with the regulatory tables specified in Section 3.4 for both ESMA (EU) and FCA (UK) regulations. While UK regulations have fewer mandatory fields (e.g., Trading System, Trading System Phase), all fields are included for consistency across all venues.

4.3.1 Depth of Book by Venue and Mechanism

The number of price level rows reported per side depends on both the venue's regulatory jurisdiction and the trading mechanism:

Venue / Mechanism	Depth Reported	Notes
BXE / CXE Lit CLOB	Up to 5 levels	UK Lit limit order book
DXE Lit CLOB	Top-of-book	EU Lit limit order book
BXE / DXE PAB	Single row	Indicative auction price and size
BXE / CXE / DXE 3C	Single row	Indicative closing cross price and size
SI Quotes (all registered SIs)	Top-of-book	One row per side, per SI firm

5 Post-Trade Transparency Data

This section defines the post-trade transparency fields for delayed data. Post-trade data provides information about executed transactions, delayed by 15 minutes.

Post-trade data is separated by trading type (on-exchange trading or APA trade reports) and by instrument class (Equities and ETFs, or ETCs and ETNs):

- **On-Exchange Trading** – Trades executed on BXE, CXE, DXE venues (Lit, Dark, PAB, 3C) and on-exchange MTF Trade Reports
- **APA Trade Reports** – Off-Exchange and SI trades published via Cboe APA facilities

5.1 On-Exchange Trading

On-exchange post-trade data is published for trades executed on Cboe's BXE, CXE, and DXE venues (Lit, Dark, PAB, and 3C), including off-book exchange trades reported to Cboe's trading venues, and MTF Trade Reports from other MTF services reported via Cboe's APAs.

5.1.1 Equities & ETFs

Post-trade fields for equity and ETF on-exchange trades:

#	Field	Max Length	Description
1	Trading Date and Time	26	Date and time when transaction was executed. Specified to microsecond precision in the form YYYY-MM-DD HH:mm:ss.ffffff.
2	Instrument Identification Code	12	ISIN identifying the financial instrument
3	Price	18	Traded price
4	Price Currency	3	ISO 4217 currency code
5	Price Notation	4	`MONE`, `PERC`, `YIEL`, or `BAPO`
6	Quantity	18	Number of units traded
7	Venue of Execution	4	Segment MIC where transaction executed.
8	Trading System	4	Type of trading system (see Section 8): `CLOB`, `QDTS`, `PATS`, `RFQT`, `HYBR`, or `OTHR`
9	Publication Date and Time	26	Date and time when the transaction was published. Specified to microsecond precision in the form YYYY-MM-DD HH:mm:ss.ffffff.
10	Venue of Publication	4	MIC of publishing venue/APA
11	Transaction Identification Code	52	Alphanumeric transaction identification code
12	Flags	Var	Double-quoted, comma-separated list of four-character trade flags (see Section 7)

Example Message:

```
2026-01-08 14:30:15.123456,DE0005190003,125.5000,EUR,MONE,1500,CEUX,CLOB,2026-01-08
↪ 14:30:15.123457,CEUX,ABCD12345,"ALGO"
```

Example Message (Cancelled Trade):

```
2026-01-08 14:35:22.456789,DE0005190003,142.7500,EUR,MONE,800,BATE,CLOB,2026-01-08 14:35:22.456790,
↪ BATE,EFGH67890,"CANC"
```

5.1.2 ETNs & ETCs

Post-trade fields for ETN and ETC on-exchange trades:

#	Field	Max Length	Description
1	Trading Date and Time	26	Date and time when transaction was executed. Specified to microsecond precision in the form YYYY-MM-DD HH:mm:ss.ffffff.
2	Instrument Identification Code	12	ISIN identifying the financial instrument
3	Price	18	Traded price
4	Missing Price	4	`PNDG` if price is pending, otherwise shall be left blank
5	Price Currency	3	ISO 4217 currency code
6	Price Notation	4	`MONE`, `PERC`, `YIEL`, or `BAPO`
7	Quantity	18	Number of units traded
8	Notional Amount	18	Notional value of the instrument
9	Notional Currency	3	Currency of notional amount
10	Venue of Execution	4	Segment MIC where transaction executed.
11	Trading System	4	Type of trading system (see Section 8): `CLOB`, `QDTS`, `PATS`, `RFQT`, `HYBR`, or `OTHR`
12	Publication Date and Time	26	Date and time when the transaction was published. Specified to microsecond precision in the form YYYY-MM-DD HH:mm:ss.ffffff.
13	Venue of Publication	4	MIC of publishing venue/APA
14	Transaction Identification Code	52	Alphanumeric transaction identification code
15	Number of Transactions	8	Number of transactions reported (aggregation indicator)
16	Flags	Var	Double-quoted, comma-separated list of four-character trade flags (see Section 7)

Example Message:

```
2026-01-08 11:45:22.345678,XS2399364319,185.2000,,EUR,MONE,200,37040.0000,EUR,CEUX,CLOB,2026-01-08
↪ 11:45:22.345679,CEUX,ABCD12345,1,"BENC"
```

5.2 APA Trade Reports

APA Trade reports are published from Cboe NL APA (CAPA) or Cboe UK APA (BOTC) for off-exchange and SI trades. APA Trade reports have the following characteristics:

- Venue of Execution is `SINT` (Systematic Internaliser), `XOFF` (off-exchange).
- Third-country venue field shall only be populated when a trade executed on a third-country venue

5.2.1 Equity & ETF APA Trade Reports

Post-trade fields for equity and ETF APA trade reports:

#	Field	Max Length	Description
1	Trading Date and Time	26	Date and time when transaction was executed. Specified to microsecond precision in the form YYYY-MM-DD HH:mm:ss.ffffff.
2	Instrument Identification Code	12	ISIN identifying the financial instrument
3	Price	18	Traded price
4	Missing Price	4	`PNDG` if price is pending, otherwise shall be left blank
5	Price Currency	3	ISO 4217 currency code
6	Price Notation	4	`MONE`, `PERC`, `YIEL`, or `BAPO`
7	Quantity	18	Number of units traded
8	Venue of Execution	4	`SINT` for Systematic Internaliser trades, `XOFF` for off-venue trades.
9	Third-Country Trading Venue of Execution	4	MIC of third-country trading venue where transaction was executed. Shall be left blank if not executed on a third-country venue.
10	Publication Date and Time	26	Date and time when the transaction was published. Specified to microsecond precision in the form YYYY-MM-DD HH:mm:ss.ffffff.
11	Venue of Publication	4	MIC of publishing venue/APA
12	Transaction Identification Code	52	Alphanumeric transaction identification code
13	Flags	Var	Double-quoted, comma-separated list of four-character trade flags (see Section 7)

Example Message (SI Trade):

```
2026-01-08 10:15:30.123456,GB00B16GWD56,142.3500000,,GBP,MONE,2500,SINT,,2026-01-08
↪ 10:15:30.123457,CAPA,XYZABC123,"ALGO"
```

Example Message (Off-Exchange Trade Report):

```
2026-01-08 11:22:45.987654,GB0031348658,185.2000000,,GBP,MONE,1000,XOFF,,2026-01-08
↪ 11:22:45.987655,BOTC,DEFGH456,"NEGO"
```

Example Message (Amended Trade Report):

```
2026-01-08 12:45:10.111222,GB00B16GWD56,658.4000000,,GBP,MONE,3500,SINT,,2026-01-08
↪ 12:45:10.111223,BOTC,LMNOP789,"AMND"
```

5.2.2 ETN & ETC APA Trade Reports

Post-trade fields for ETN and ETC APA trade reports:

#	Field	Max Length	Description
1	Trading Date and Time	26	Date and time when transaction was executed. Specified to microsecond precision in the form YYYY-MM-DD HH:mm:ss.ffffff.
2	Instrument Identification Code	12	ISIN identifying the financial instrument
3	Price	18	Traded price
4	Missing Price	4	`PNDG` if price is pending, otherwise shall be left blank
5	Price Currency	3	ISO 4217 currency code

#	Field	Max Length	Description
6	Price Notation	4	`MONE`, `PERC`, `YIEL`, or `BAPO`
7	Quantity	18	Number of units traded
8	Notional Amount	18	Notional value of the instrument
9	Notional Currency	3	Currency of notional amount
10	Venue of Execution	4	`SINT` for Systematic Internaliser trades, `XOFF` for off-venue trades.
11	Third-Country Trading Venue of Execution	4	MIC of third-country trading venue where transaction was executed. Shall be left blank if not executed on a third-country venue.
12	Publication Date and Time	26	Date and time when the transaction was published. Specified to microsecond precision in the form YYYY-MM-DD HH:mm:ss.ffffff.
13	Venue of Publication	4	MIC of publishing venue/APA
14	Transaction Identification Code	52	Alphanumeric transaction identification code
15	Flags	Var	Double-quoted, comma-separated list of four-character trade flags (see Section 7)

Example Message (SI Trade):

```
2026-01-08 10:15:30.123456,XS2399369201,185.2000000,,EUR,MONE,200,37040.0000000,EUR,SINT
↪ ,,2026-01-08 10:15:30.123457,CAPA,XYZABC123,"LRGS"
```

Example Message (Off-Exchange Trade Report):

```
2026-01-08 11:22:45.987654,XS2399364319,142.5000000,,EUR,MONE,500,71250.0000000,EUR,XOFF
↪ ,,2026-01-08 11:22:45.987655,BOTC,DEFGH456,"PRIC"
```

5.3 Post-Trade Field Applicability

The following matrix summarises which fields are present in each post-trade message format.

Field	On-Exchange Equity/ETF	On-Exchange ETN/ETC	APA Equity/ETF	APA ETN/ETC
Trading Date and Time	✓	✓	✓	✓
Instrument Identification Code	✓	✓	✓	✓
Price	✓	✓	✓	✓
Missing Price		✓	✓	✓
Price Currency	✓	✓	✓	✓
Price Notation	✓	✓	✓	✓
Quantity	✓	✓	✓	✓
Notional Amount		✓		✓
Notional Currency		✓		✓
Venue of Execution	✓	✓	✓	✓
Third-Country Trading Venue			✓	✓
Trading System	✓	✓		
Publication Date and Time	✓	✓	✓	✓
Venue of Publication	✓	✓	✓	✓
Transaction Identification Code	✓	✓	✓	✓
Number of Transactions		✓		
Flags	✓	✓	✓	✓

5.4 Regulatory Applicability

The files message format provides a consistent field structure across all venues. Minor regulatory differences (e.g., UK does not require `NOAP` for Missing Price field, Trading System, or Price Notation fields) are accommodated by including all fields for consistency.

6 File Format

6.1 File Naming Convention

Daily files follow this naming pattern:

```
[asset_class]_[trade|pretrade]_[venue_mic]_YYYYMMDD.csv
```

Examples:

- eqt_pretrade_CEUX_20260108.csv
- neqt_trade_BATE_20260108.csv

6.2 File Structure

6.2.1 Header Row

The first published file of each day for each feed variant, and any full day published files will begin with a header row containing field names:

```
UpdateDateTime,InstrumentID,UMTFSymbol,Side,Price,...
```

6.2.2 Data Rows

Data rows follow the header on the first published file or full day files, with one transaction/quote per row:

```
2026-01-08 09:15:30.123456,DE0005190003,BMWd,BUYL,125.5000,...
```

Otherwise minutely files shall only contain data rows.

6.3 Update Schedule

- Files are updated every minute during trading hours
- If no new delayed data is available, the files are not updated
- Files remain available until the end of the next business day

7 Post-Trade Flags

Post-trade transparency requires publication of applicable flags to identify special trade circumstances. The following flags are defined per RTS 1 and RTS 2, and shall be published on this feed.

7.1 Amendment Flags

Flag	Description
CANC	Cancellation – previously published trade has been cancelled
AMND	Amendment – previously published trade has been amended

7.2 Trade Type Flags

Flag	Description
BENC	Benchmark transaction
NPFT	Non-price forming transaction
TNCP	Transaction not contributing to the price discovery process
SDIV	Special dividend transaction
ALGO	Algorithmic transaction
PRIC	Price reference waiver
NEGO	Negotiated transaction
NLIQ	Negotiated transaction in liquid instruments
OILQ	Negotiated transaction in illiquid instruments
NETW	Negotiated transaction subject to conditions other than the current market price

7.3 Deferral Flags

Flag	Description
LRGS	Large in scale deferral
ILQD	Illiquid instrument transaction
SIZE	Size specific transaction
DEFF	Deferred publication

8 Trading System and Trading System Phase Flags

Pre- and post-trade transparency data can include Trading System and Trading System Phase fields to identify the type of trading system and their current operational phase. These fields are required per RTS 1 (equities) and RTS 2 (non-equities), and shall be populated as defined below where applicable.

8.1 Trading System

The Trading System field identifies the type of trading system on which the order book or transaction data originates. The following values are defined per RTS 1 Annex I:

Code	Description
CLOB	**Central Limit Order Book** – A continuous order book trading system where orders are matched based on price-time priority. This includes trading systems that combine elements of a continuous order book and a periodic auction trading system (such systems shall be classified as CLOB, not HYBR).
QDTS	**Quote Driven Trading System** – A trading system where transactions are concluded on the basis of firm quotes that are continuously made available to participants, requiring market makers to maintain quotes within published spreads.
PATS	**Periodic Auction Trading System** – A system that matches orders on the basis of a periodic auction and a trading algorithm operated without human intervention. This includes the Periodic Auction Book (PAB) and Cboe Closing Cross (3C).
RFQT	**Request For Quote Trading System** – A trading system where a quote or quotes are provided in response to a request for quote submitted by one or more members or participants. The quote is executable exclusively by the requesting member or market participant.
HYBR	**Hybrid Trading System** – A trading system that falls into two or more of the above categories. Note: A trading system combining elements of a continuous order book trading system (CLOB) and of a periodic auction trading system (PATS) shall *not* be considered a hybrid system but shall be classified as CLOB.
OTHR	**Other Trading System** – Any other type of trading system not covered by the above categories.

8.1.1 Cboe Europe Trading System Mapping

The following table shows how Cboe Europe venues and trading mechanisms map to Trading System values:

Venue/Mechanism	Trading System	Notes
BXE/CXE/DXE Lit Book	CLOB	Lit Continuous limit order book trading
BXE/CXE/DXE Dark Book	CLOB	Dark pools classified as CLOB per ESMA guidance
Periodic Auction Book (PAB)	PATS	Frequent batch auctions
Cboe Closing Cross (3C)	PATS	End-of-day auction mechanism
BXE/CXE/DXE Off-Book Trade Reports	OTHR	On-exchange, off-book trade reports to Cboe's trading venues
MTF Trade Reports	As Reported	Trading System value will reflect the book/venue information supplied by the MTF

Venue/Mechanism	Trading System	Notes
APA Trade Reports	N/A	Trading System not populated for off-venue trades

Note: For post-trade transparency, when the Venue of Execution field is populated with SINT (Systematic Internaliser) or XOFF (off-venue), the Trading System field shall not be populated.

8.2 Trading System Phase

The Trading System Phase field identifies the current operational phase of the trading system. This field provides context for the pre-trade transparency data, indicating whether the system is in continuous trading, auction, or another phase.

Code	Description
COTR	**Continuous Trading** – The trading system is operating in continuous trading mode where orders are matched immediately upon arrival based on price-time priority. This is the standard phase for continuous order book trading.
SOAU	**Scheduled Opening Auction** – The trading system is in a scheduled opening auction phase, occurring at market open. Orders accumulate and are matched at a single clearing price.
SCAU	**Scheduled Closing Auction** – The trading system is in a scheduled closing auction phase, occurring at market close.
SIAU	**Scheduled Intraday Auction** – The trading system is in a scheduled intraday auction phase, occurring at predetermined times during the trading day.
UAUC	**Unscheduled Auction** – The trading system is in an unscheduled auction phase, triggered by market events such as volatility interruptions or circuit breakers.
ODAU	**On-Demand Auction** – The trading system is operating a frequent batch auction (on-demand auction), where auctions are triggered by incoming order flow. This applies to the Periodic Auction Book (PAB).
UDUC	**Undefined Auction** – An auction phase that does not fall into any of the other defined auction categories.
MACT	**At Market Close Trading** – Trading occurring at or around market close, outside of the main continuous trading session.
OMST	**Out of Main Session Trading** – Trading occurring outside of the main trading session hours, such as pre-market or after-hours trading. This includes Cboe's Closing Cross (3C) auctions.
OTSP	**Other Phase** – Any other trading phase not covered by the above categories.

8.2.1 Cboe Europe Trading Phase Mapping

The following table highlights how Cboe Europe trading phases shall map to Trading System Phase values:

Trading Phase	Phase Code	Notes
Continuous Trading	COTR	On-exchange limit order book trading
Opening Auction	SOAU	Market open auction
Closing Auction	SCAU	Market close auction
Cboe Closing Cross (3C)	OMST	Out of main session trading
Periodic Auction (PAB)	ODAU	On-demand frequent batch auction
Volatility Auction	UAUC	Circuit breaker triggered auction

8.3 UK Regulatory Notes

UK MiFIR (as implemented by the FCA) does not mandate the Trading System or Trading System Phase fields for pre-trade or post-trade transparency. However, Cboe includes these fields in the feed for all venues to maintain consistency and to support participants who may have EU reporting obligations.

For UK-only participants, these fields may be ignored when processing feed data for UK regulatory purposes.

Revision History

15 January 2026	Version 1.0.0 Initial version of the Delayed Transparency Feed Specification.
22 January 2026	Version 1.0.1 Update continuous trading sections to clarify applicability to Dark, and add Dark segment MICs.
30 January 2026	Version 1.0.2 Rename specification, change timestamp precision from nanoseconds to microseconds.
8 April 2026	Version 1.0.3 Align message structures with Aggregated Depth Feed Specification: adopt unified 14-field pre-trade message, align APA trade report field tables, add regulatory references, update venues table, update examples to use ISINs. Remove unused Quantity in Measurement field types from ETN/ETC formats. Add post-trade field applicability matrix.
15 May 2026	Version 1.0.4 Clarify pre-trade depth levels across UK and EU jurisdictions, and price level invalidation behaviour.
04 June 2026	Version 1.0.5 Coalesce access information, update web-page access URL, and example file formats.
09 June 2026	Version 1.0.6 Clarify pre-trade depth-of-book descriptions, add high-level mechanism overview in Section 4, and depth matrix by venue/mechanism in Section 4.3.1. Clarify SI quote keying by Venue MIC.
31 July 2026	Version 1.0.7 Clarify csv header display on RTS file output.