



# **Cboe Europe Regulatory Transaction Reporting Service Description**

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# 1 Overview

This document describes the Cboe Regulatory Transaction Reporting service. Article 26 of MiFID II's accompanying regulation, MiFIR[1], imposes an obligation on all investment firms to report details of transactions in relevant instruments, which includes all instruments that are traded on EEA regulated markets and MTFs to their home regulator. Paragraph 5 of that article goes on to say that operators of trading venues must report details of transactions that have taken place on their venues where the firm is not subject to a transaction reporting obligation in their own right. The contents of those transaction reports are set out in Regulatory Technical Standard (RTS) 22[3], a piece of secondary legislation.

In order for Cboe to meet its obligations, it has to gather the required information from Participants. Because of the level of detail and the nature of the information required, which will not always be known at the point of order submission, it is not possible to collect all information on orders. Cboe is also mindful that affected Participants will also be required to submit the same type of information to multiple other EEA venues. Accordingly, Cboe has adopted the format for reports that has been developed by ESMA for MiFID Participants[2].

This transaction reporting obligation applies to both Cboe Europe venues (with BXE and CXE constituting one venue and DXE the other). Thus, the transaction reporting gateway provides a mechanism for Participants to transaction report through either of the two Cboe Europe venues to their respective NCA. The UK has onshored Mifid under the EU Withdrawal Act, as a result of which the duty to transaction report to the Financial Conduct Authority ("FCA") remains in force after Brexit.

In particular, the following three scenarios may arise (depending on the terms of the withdrawal agreement between the EU and the UK and future relationship):

- Cboe NL needing to transaction report to the Dutch Authority for the Financial Markets ("AFM") for trades on Cboe Europe B.V. conducted by UK based firms.
- Cboe UK needing to transaction report to the FCA for trades on Cboe Europe Limited conducted by EEA based firms.
- Cboe UK needing to transaction report to the FCA and Cboe NL needing to transaction report to the AFM for business conducted on those venues by non-UK, non EU-27 based firms (Swiss/Cayman/Australian etc) and firms that are not authorised (under MiFID or the UK equivalent).

In all of these cases, affected Participants will need to submit transaction reporting information to the relevant Cboe venue to allow the venue to fulfill its transaction reporting obligation. In the latter case, the Participant will need to upload two separate files to the reporting gateway, one to report transactions to the FCA and the other to report transactions to the AFM.

## 2 Operational Details

Participants are required to submit transaction reports for activity on Day T by 11am London local time on Day T+1. Participants may upload files at any time, however please note that there may be planned maintenance windows during which the service is unavailable for up to 3 hours. Participants are advised to automatically retry file submission overnight in order to minimise disruption caused by any such downtime, however Trade Desk support will be unavailable outside of core trading hours as indicated in the Participant Manual[6].

### 2.1 Day T

- Participants submit transaction reports to the Regulatory Transaction Reporting SFTP site for trades on Day T.
- During the hours of operation for Regulatory Transaction Reporting:
  - Cboe carries out initial validation of the files, including extracting transactions for reconciliation.

- Transaction reports are forwarded to the relevant NCA for validation on Day  $T + 1$  (once instrument reference data is published by ESMA).

## 2.2 Day $T + 1$

- All transaction reports must be uploaded by 11am (London local time).
- During the morning of day  $T + 1$  the NCA validates the supplied transactions against the instrument reference data list published by ESMA.
- Cboe checks Participants' submission and reconciliation status. In the event that all transactions are accounted for, no further action is required.
- In the event that there are rejected submissions or volume / notional that is not reconciled with our records, we will inform Participants, providing details of the error. See Section 4.6 for more details.
- Participants submit Regulatory Transaction Reporting corrections which are processed intraday.
- All errors must be corrected by the end of Day  $T + 1$ .

## 2.3 Disaster recovery

In the event of site failover to our secondary data center, Participants will be automatically redirected to the secondary data center. In this situation, Participants may be asked to manually resubmit files that were uploaded prior to the failover but not successfully processed.

# 3 Security and Personally Identifiable Information

It is important to note that the submitted transaction reports, by their nature, contain Personally Identifiable Information (PII). Cboe takes the security of this information seriously and has adopted the following procedures to safeguard this information:

- File transfer between Participants and Cboe will be by SFTP, authenticated by private key;
- IP white-listing is used to control access to the SFTP host;
- All Participant submission files and files forwarded by Cboe to the relevant NCA are encrypted after they are processed;
- The decryption key to gain access to Production data is stored in a separate system to our normal operational system and there is no programmatic access to this key.

Note that these measures apply to the Production environment only. Data submitted to the Certification environment will not be as stringently encrypted for ease of debugging during client testing. Accordingly Participants must submit dummy data that does not contain any PII to the Certification system. In the event that the UK leaves the EU, Cboe will continue to comply with the EU General Data Protection Regulation 2016/679 ("GDPR"), or other legislation in the UK, if introduced, in connection with its customer agreements. We refer to the Brexit privacy notice of 8 April 2019 [7].

# 4 Technical details

Cboe requires Participants to submit the required data to Cboe by 11am on Day  $T + 1$  for transactions which occurred on Day  $T$ . This will allow Cboe to perform appropriate validation and comply with its own obligation to submit the reports to its regulator on Day  $T + 1$ .

The interface for Regulatory Transaction Reporting follows, where possible, the interface defined by ESMA for transaction reporting. Details of this are given in the guidance published by ESMA [2]. Some additional guidance and clarifications specific to the Cboe implementation are given in Section 4.8.

In addition to forwarding the supplied reports on to the relevant NCA, the Regulatory Transaction Reporting system carries out initial validation of the reports as well as reconciling the transaction reports with our own records of the executed volume and notional for the day. In order to meet the reporting requirements set out by ESMA, we require all records to have been reconciled by COB on day  $T + 1$ . The error reporting and escalation procedure is described in Section 4.6.

## 4.1 Connecting to the service

Participant files must be supplied via SFTP. Authentication will be carried out via public key authentication only; no password based access will be possible. As part of the process of getting setup on the system, Participants will be supplied with instructions for generating a key to use when accessing the service.

## 4.2 SFTP directory structure

Upon logging in to the SFTP server, participants will be placed in their home directory which has the following structure:

- uk/ top-level directory – for transaction reporting to the FCA:
  - /uk/inbound/dattra: Transaction reports from Participants to be forwarded to the FCA should be placed in this directory.
  - /uk/outbound/fdbtra: Feedback files from the FCA will be placed in this directory.
- eu/ top-level directory – for transaction reporting to the AFM:
  - /eu/inbound/dattra: Transaction reports from Participants to be forwarded to the AFM should be placed in this directory.
  - /eu/outbound/fdbtra: Feedback files from the AFM will be placed in this directory

It is the responsibility of the firm uploading files to place them in the appropriate directory for the regulator the transaction reports should be submitted to, as well as naming them appropriately. Trading in the BXE and CXE environments should always be uploaded to the uk directory and trading in the DXE environment should always be uploaded to the eu directory.

## 4.3 Transaction Report Contents

The list of transaction report attributes is described in Chapter 7 of the Regulatory and Technical Implementing Standards[3]. Further information can be found in the ESMA guideline documentation on Transaction Reporting[2].

### 4.3.1 Schema versions

The XML schema for the transaction reports is available from ESMA [4]. Note that the schema version in use by the reporting gateway will change in line with the systems of the relevant NCA's and details of these schema changes will be communicated by Cboe. It is not guaranteed that the two regulators will implement schema changes at the same time, so Participants should be mindful that it may be necessary to upload transaction reports using different versions of the schemas to the different regulators.

## 4.4 File submission

Participants must submit their transaction report files by uploading them to the `inbound/dattra` directory for the appropriate venue on the SFTP site. Note that Participants will only have write access to the `inbound` directories so it will not be possible to overwrite or delete existing files. The expected naming convention for the files is:

I<Participant LEI>\_DATTRA\_T<venue>\_<sequence number>\_<submission year>.zip

where:

Field	Description
Participant LEI	LEI of the Participant submitting the transaction reports.
Venue	Venue transaction reports are being submitted to (BCXE for the UK venue, CCXE for the EU venue)
Sequence number	Sequence number of the submission, left padded with zeros to 6 figures.
Submission year	The two digit year (eg 19 for 2019) in which the submission file was generated.

Table 1: File naming convention

The zip file should contain a single xml file with name exactly matching that of the containing zip archive apart from the extension which should be `.xml` instead of `.zip`.

Note that this naming convention is strictly enforced and that any files that deviate from it will be rejected and no further processing of the contents of that file will be carried out. Note that the associated Business Message Identifier to be used in identifying the files sent to Cboe and which will be populated in the feedback files we provide will be taken from the file name and consist of `<sequence number>_<submission year>`.

## 4.5 Successful file submissions

Participants will be notified of successful file submissions by a feedback file placed in the corresponding `outbound/fdbtra` directory on the SFTP server. In the event of the successful submission of transaction reports, this file should be present within an hour of submission although the timings of this are dependent on the response time of the NCA.

## 4.6 Error Scenarios

There are three possible types of error, detailed in Table 2.

Error Type	Description	Handling	Action Required
<b>File Errors</b>	High-level errors (including schema validation errors) that mean that a file can not be processed.	These will be caught by Cboe prior to submission to the NCA. In this case, Cboe will notify Participants via email.	Where the entire file is invalid (eg due to schema validation errors), the file should be resubmitted with an incremented sequence number.
<b>Content Errors</b>	Rejection of individual transactions from a report due to, for example, the currency being invalid.	Cboe will not carry out content validation. This will be carried out by the relevant NCA and the Regulatory Transaction Reporting system will communicate these errors via feedback files placed in the relevant outbound/fdbtra directory on the SFTP site	Submit a new transaction report with an incremented sequence number correcting the data.
<b>Reconciliation Errors</b>	When the volume and / or notional covered by Transaction Reports accepted by the NCA does not match Cboe records (See Section 5).	Cboe provide details of outstanding reconciliation issues via a WEB API (See Section 6).	Submit a new transaction report with an incremented sequence number to account for the discrepancy.

Table 2: Different Error Scenarios

## 4.7 Transaction Amendment and Cancellation

The correction of an erroneous transaction record is carried out by submitting a report with a Transaction Reference Number that duplicates a previously accepted report that needs to be corrected. For example, if a transaction report with Transaction Reference Number 'TRANSACTIONREPORT1' has been accepted, and then that Transaction Reference Number ('TRANSACTIONREPORT1') appears in a subsequent file, then the initial transaction report will be cancelled and the new one submitted in its place.

In some cases it may be necessary to cancel a transaction report that has been submitted in error without needing to replace it with updated data. In this case, an explicit Cancellation (<Cx1>) record must be submitted. An example cancellation file for TRANSACTION1 will contain the following data (in addition to the standard header information):

```

<FinInstrmRptgTxRpt>
  <Tx>
    <Cx1>
      <TxId>TRANSACTION1</TxId>
      <ExctgPty>PARTICIPANTLEI</ExctgPty>
      <SubmitgPty>CBOEEUROPELEI</SubmitgPty>
    </Cx1>
  </Tx>
</FinInstrmRptgTxRpt>

```

Further details on cancellations can be found in the ESMA Transaction Reporting Guidelines [2]. Note that the ESMA documentation discusses an approach to amendments based on first submitting a cancellation and then an amended transaction report. This approach is also supported by the Regulatory Transaction Reporting Gateway.

Further, ESMA advise against the submission of <Cx1> and <New> records in the same file due to the potential ambiguity in processing the response file. Cboe enforces this:

- Cancellations (<Cx1> records) must be submitted in a separate file to new transaction reports (<New> records).

Submissions that do not obey this requirement will result in a File Error, as described above.

## 4.8 Implementation guidance

This section provides clarification on the technical details of the requirements set out by ESMA in [2] and some additional details specific to the implementation of the Regulatory Transaction Reporting system.

### 4.8.1 Clarifications

- **Transaction Reference Numbers** (contents of the TxId field in the XML schema): Must be unique for all time. It is recommended that this field be composed of the date as well as a reference number for the transaction unique to that day.
- **Trading Venue Identifiers**: The Trading Venue Identifier for each transaction should be the corresponding Segment MIC for the venue of execution and should not be aggregated to the Operating MIC.
- **Execution IDs**: Cboe Execution IDs (contents of the <TradPlcMtchgId> in the XML schema) are to be provided in base 36. As such Participants reading BOE messages will need to convert the Execution IDs from base ten to base 36.
- **Trading Date Time**: Specifies the date/time on which the trade was executed [3] (contents of the TradDt field in the XML schema). This represents the date/time at which the trade occurred on the relevant Cboe venue (and that is sent back on FIX [8]/BOE [9]). This value should be specified in Microseconds and reported in UTC.
- **Feedback files**: Although the specification allows for one feedback file to contain references to multiple submission files, all feedback files produced by Cboe will contain information on a single submission file only.
- **outbound/fdbtra directories**: Participants may delete feedback files from the outbound/fdbtra directories once they have been processed. Cboe will automatically delete feedback files after 7 days.

### 4.8.2 Additional Details

- **Pending Transactions**: Any transactions that are marked as 'Pending' by the relevant NCA in the feedback files placed in the outbound/fdbtra directories on the SFTP site should be considered accepted by Participants unless those transactions are specifically flagged by our reconciliation process (see Section 5).
- **Aggregate Transactions and Pending Allocation**: For any order flagged (at order entry) as PNAL or AGGR (using the reserved short codes as defined in the FIX [8] and BOE [9] specification documents), Cboe expects to see the following:
  - A market side transaction report covering the on exchange execution (with <TradPlcMtchgId> containing the relevant Cboe Execution ID)
  - One or more client side transaction reports (with no <TradPlcMtchgId>)

The sum of the number of shares covered by the client side reports must add up to the number of shares in the market side report and the price should be set to the average price given to the client, including non-Cboe executions.

- **Participants with multiple trading desks**: The responsibility to transaction report is applicable to the Participant. Participants with multiple trading desks will be issued with a single log in and must submit their transaction reports using this login; note that these transaction reports can be in multiple files divided by trading desk provided they obey the correct sequence numbering.



- **Trading activity exempt from transaction reporting:** Certain on-exchange activity may be exempt from transaction reporting. Accordingly, Cboe will not require Participants that are not an investment firm or credit institution to provide reports for exempt cross-jurisdictional activity. If a Participant believes that an exemption applies it should contact Cboe and confirm that the activity is exempt. If Cboe agrees that the activity is exempt, the Participant must separate all exempt activity through the use of a separate Bank Code. Exemptions are listed in Article 5 of RTS 22 [3] and include contracts arising exclusively for clearing or settlement purposes.

## 5 Reconciliation

In order for Cboe to meet its regulatory obligation to transaction report, Cboe reconciles transaction reports submitted via the Regulatory Transaction Reporting Gateway against all *Reportable Trading Activity*.

*Reportable Trading Activity* consists of:

- All order book trades
- Exchange Trade Reports (ETRs), unless they are exempt according to Article 5 of RTS 22 [3]. (Exempt ETRs will need to be sent in on a dedicated clearing identifier (PSID), as detailed in the Participant Manual [6].)

It is possible for Participants to obtain a complete list of all trading activity that Cboe expects to receive transaction reports for using the Trade Data download facility on the Cboe Website. Details of how to access this and the contents of the file are described in the Trade Data File Specification [12]. Note that the contents of this file are limited to the clearing identifiers that the user downloading has access to, so it is important that the person downloading this file has access to all clearing identifiers for the firm. Note that this file will include exempt ETRs. These can be filtered out based on the 'PSID' column in the trade data file for any clearing identifier that is used for exempt reports.

The contents of the 'Execution Id' column in this file are what Cboe uses for the purpose of matching submitted Marketside transaction reports to trading activity and should appear in the <TradP1cMtchgId> element in the transaction report. The reconciliation for individual reports is conducted using the logic below:

1. Cboe reconciles the following data points between our two matching sets i.e. Market Side Transaction Reports = Cboe trade records.
  - ISIN
  - Capacity
  - Price
  - Size
  - Currency
  - Side (derived from LEI of the CCP, for order book executions only)
2. For *Reportable Trading Activity* flagged as PNAL or AGGR, Cboe *additionally* reconciles the following data points for Client Side Transaction Reports:
  - ISIN
  - Currency
  - Sum of size

## 6 Reconciliation API

Cboe provides a web-based API for programmatic access to up-to-date details on transaction reporting reconciliation issues. A browser interface for this data is also available on the Cboe Europe client portal.

Further details for connecting to the reconciliation API can be found in [13]. Any automated processes will need to utilise the API authentication procedures as outlined in that document. There are different URLs for the production and certification (UAT) environments.

Whilst the URLs provided are correct at the time of writing, Cboe reserves the right to change the URLs at any time, although we will endeavour to ensure backwards compatibility. Participants should ensure that any automated processes are configured to follow redirections.

Note that usage of the API will be throttled.

### 6.1 URLs and Access

The URLs for access to this data are given below.

Production API	<a href="https://api.batstrading.co.uk/account/transaction_reporting/">https://api.batstrading.co.uk/account/transaction_reporting/</a>
Production Client Portal	<a href="https://batstrading.co.uk/account/transaction_reporting/">https://batstrading.co.uk/account/transaction_reporting/</a>
Certification API	<a href="https://api.certification.batstrading.co.uk/account/transaction_reporting/">https://api.certification.batstrading.co.uk/account/transaction_reporting/</a>
Certification Client Portal	<a href="https://certification.batstrading.co.uk/account/transaction_reporting/">https://certification.batstrading.co.uk/account/transaction_reporting/</a>

In order for a user to access the reconciliation API or portal, they will need to be assigned the 'Transaction Reporting API' privilege by their account admin.

### 6.2 End points

The API supports two end points: `viewDates` (to get a list of all dates with errors) and `viewErrors` (to see a paginated list of errors for a specified date). Typical usage of the API will involve getting a list of all dates with errors, then cycling through all pages for each date to see the associated errors.

#### 6.2.1 viewDates

The `viewDates` command does not take any parameters. An example `viewDates` API call is:

```
/account/transaction_reporting/?command=viewDates
```

This will return a JSON object like the below:

```
{
  "data": [
    {
      "dt": "2019-10-14",
      "error_count": 136438
    },
    {
      "dt": "2019-10-17",
      "error_count": 1
    }
  ]
}
```

```

    },
  ]
}

```

That is, data will be a list of one or more elements, each element of which will contain a date and a count of recorded errors for that date. It is important to note that the number of recorded errors here may differ to that reported by a subsequent call to `viewErrors` if additional files have been processed during the elapsed period between the two API calls.

### 6.2.2 viewErrors

Due to the potentially large number of reconciliation errors, the results from this command are paginated. The `viewErrors` command takes two parameters: `dt` (an isoformat date) and `offset` (the numeric offset for the number of errors). The maximum number of items on each page is returned in the errors response and may change in the future. If the count is the same as the page size, further pages can be retrieved by incrementing the offset with the page size. If the total number of errors retrieved across multiple calls is not the same as the count returned by the `viewDates` response, previously retrieved errors for that date should be discarded and retrieval should be restarted from a zero offset. An example `viewErrors` call is:

```
/account/transaction_reporting/?command=viewErrors&dt=2019-10-14&offset=50000
```

Example output from an API call can be seen below. Note that some fields are elided for brevity. The keys and values present in the 'properties' field may vary from what is being shown in the example.

```

{
  "dt": "2019-10-14",
  "data": [
    {
      "error_type": "MissingMarketSideTransactionReport",
      "properties": {
        "regulator": "UK",
        "trading_place_matching_id": "OC8Q0000P",
        "side": "B",
        "trading_venue_mic": "BATE",
      },
      "updated": "2019-10-14T12:39:37.767+01:00"
    },
    {
      "error_type": "MultipleMarketSideReports",
      "properties": {
        "regulator": "UK",
        "trading_place_matching_id": "OC4Q0000A",
        "side": "B",
        "trading_venue_mic": "BATL",
      },
      "updated": "2019-10-14T12:39:37.767+01:00"
    }
  ],
  "count": 2,
  "offset": 0,
  "page_size": 50000,
  "error_types" : {
    "MissingMarketSideTransactionReport": "Missing Market Side Transaction Report",
    "MultipleMarketSideReports": "Multiple market side reports with same exec_id"
  },
}

```

```

"processed_files": [
  "I00000000000000000000LEI_DATTRA_TBCXE_000022_20.xml"
]
}

```

The meaning of the fields are as follows:

- **dt:** The date the errors are for
- **data:** A list of containing reconciliation errors for that date. Each reconciliation error will contain the following details:
  - **error\_type:** A unique key identifying the type of error
  - **properties:** Additional details specific to the error to aid in identifying the corresponding trade or transaction report and the associated issue
  - **updated:** The timestamp for when the error was last updated
- **count:** The number of errors returned in the current page. The maximum value for this cannot exceed **page\_size**.
- **offset:** The numeric offset used in generating this list of errors, starting at zero.
- **page\_size:** The maximum number of errors returned in any page
- **error\_types:** A list of all possible Error Types with a free text description of each error
- **processed\_files:** A list of submission files relevant to the day that have been processed by Cboe and for which at least one feedback file has been received from the relevant NCA.

### 6.3 Additional Considerations

This section contains some additional clarifications that may aid in understanding the data from the API.

- *Identifying transaction reports and corresponding trades:* Where possible, any error reported via the API will have both a **trading\_place\_matching\_id** and **transaction\_reference\_number** in the **properties**. However, in some cases, this is not possible (where either transaction reports are missing or transaction reports can not be matched to activity on Cboe). In this case one or other of the two identifying fields will be present. There is one exception to this as detailed in the next bullet point.
- *Client side aggregate issues:* When reconciling client side transaction reports, there is not sufficient information in the transaction reports to link them to a specific **trading\_place\_matching\_id**. In this case, the reconciliation is aggregated by ISIN and Currency and a group of **trading\_place\_matching\_ids** and **transaction\_reference\_numbers** will be reported instead.
- *Reconciliation status may change over time:* Transaction reports can be put into a Pending state by the relevant NCA's transaction reporting system for up to 7 days which means that, in exceptional circumstances, reconciliation status can change up to 7 days after the trading date of the transaction report. Additionally, accidental reuse of a transaction reference number could affect the reconciliation status for past days.
- *Error types* Cboe Europe reserves the right to introduce new error types without advance notification.

### 6.4 Possible Reconciliation Errors

The table below contains a complete list of reconciliation errors that you may see through the API and some possible causes of these errors. Please note that the list of possible causes is not exhaustive.

Error type	Explanation
MissingMarketSideTransactionReport	As described in the section on Reconciliation, Cboe expects a market side transaction report for all <i>Reportable Trading Activity</i> . We identify market side transaction reports by the TVTIC (also known as <code>trading_place_matching_id</code> based on the naming in the ESMA XML Schema). This error indicates that there is a trade that Cboe has a record of for your firm that has not been included in the files submitted by your firm up to this point in time.
MissingClientSideTransactionReports	For PNAL or AGGR trades, Cboe also expects to see client side transaction reports (identified by the absence of a <code>trading_place_matching_id</code> ). These are aggregated at the ISIN and currency level and we check this against trading activity that was flagged as PNAL / AGGR at point of order entry. This error indicates some <i>Reportable Trading Activity</i> was flagged as PNAL / AGGR at order entry and the corresponding client side transaction reports were not found.
TransactionReportRejectedByNca	A market side transaction report that we have successfully matched to for all <i>Reportable Trading Activity</i> on Cboe was rejected by the NCA. The reason for the rejection will be in the NCA feedback file (for RTRG users) or else should be visible via UnaVista (for UnaVista users).
MarketSideReportSubmittedToWrongRegulator	A transaction report that should have been submitted to the AFM was submitted to the FCA or vice-versa. This is probably because a file was uploaded to the wrong inbound directory on the SFTP site.
MarketSideTransactionReportHasIncorrectValue	Once Cboe has matched a market side transaction report to the corresponding trade based on the TVTIC, we validate properties of the transaction report as described in the Reconciliation section. One common source of error is where GBX trades are reported as GBP without an appropriate price conversion.
UnMatchedMarketSideReport	A transaction report (with a <code>trading_place_matching_id</code> ) has been submitted to Cboe and accepted by the NCA but Cboe is unable to match it (based on <code>trading_place_matching_id</code> ) to <i>Reportable Trading Activity</i> . This could be because the <code>trading_place_matching_id</code> is not in the correct format (specified in base 36) or has had additional data added to it (such as suffixing the id with B or S for Buy / Sell).
UnMatchedClientSideReport	Transaction reports without a <code>trading_place_matching_id</code> have been supplied to Cboe but there were no trades on the relevant day where the orders were flagged as PNAL or AGGR at order entry in the relevant ISIN and currency. This error often arises when a transaction report that is not for a PNAL or AGGR trade is supplied without a <code>trading_place_matching_id</code> .

ClientSideReportSharesDoNotMatch	As described in the Reconciliation section, Cboe aggregates shares at the ISIN and currency level and compares this to <i>Reportable Trading Activity</i> for PNAL and AGGR orders to ensure all activity is accounted for.
MarketSideReportThatDoesNotHaveLEIOfCCPAsOneSide	For all anonymous order book activity we would expect, in line with RTS 22, to have the LEI of the CCP as one side of the transaction report.
CCPLEINotSuppliedForBIDSTrade	BIDS trades are also matched on an anonymous order book, so the expectation here is that we would also have the LEI of the CCP as one side of the transaction report.

## 7 Registration and testing

In order to gain access to the service, Participants will need to contact Cboe Trade Desk. They will be asked to provide details including the IP from which they will be connecting to the system in order to allow this to be added to the IP whitelist. They will then be provided with the hostname of the SFTP server and a username. They will be provided with detailed instructions for Regulatory Transaction Reporting as well as a conformance test plan that they will need to complete in order to certify to connect to the production system. Please note that the UAT system forwards files to the relevant NCA's test systems. These systems do not have the same guaranteed level of service as the production system so the time taken for feedback files to be placed in the `outbound/fdbtra` directories on the sftp server are not guaranteed. Please note that certification activity needs to be representative of the trading profile of the Participant i.e. make considerations for exempt activity, ETRs and AGGR / PNAL executions.

Cboe offers two different ways for Participant certification:

1. Accepted transaction reports are then reconciled against trades in Certification, allowing Participants to test the whole service interface in Certification. In this case, a check will be run to ensure that the certification covers activity representative of the trading profile of the Participant.
2. Participants affected by Brexit may opt into certifying through submitting a full day's worth of transaction reports corresponding to their Production environment activity.

It is important to reiterate that Certification test data should not contain any PII as it will not be protected using the same methodology as the Production system. Please note that this also applies to the production data approach above; the transaction reports should not contain actual PII. Instead of using the PII provided on the order, Participants should use example PII in the correct format from the ESMA transaction reporting guidelines [2].

The transaction reporting guidelines can be found on ESMA's Website.

Participants will only be granted access to the production system after they have successfully completed the conformance testing.

## 8 Contact Details

If you have any queries regarding the Regulatory Transaction Reporting, please contact Cboe Trade Desk. Other useful numbers are set out below.

### Sales Team

SalesEurope@cboe.com

Phone: +44.207.012.8906

**Participant Services**

ParticipantServicesEurope@cboe.com

Phone: +44.207.012.8902

**Trade Desk**

TradeDeskEurope@cboe.com

Phone: +44.207.012.8901

## 9 Appendices

### 9.1 FAQs

#### **Is there a link between the sequence number in the Feedback file and the submitted sequence number?**

No. Because of Pending transaction reports, each submitted transaction report can have multiple feedback files associated with it. The number in the feedback file name is a unique incrementing sequence number for feedback files.

#### **What time are feedback files produced?**

The production of T+1 feedback files is determined by the time in which the NCA's system begins processing the ESMA FIRDS data. The ESMA FIRDS data is nominally meant to be supplied at 8am CET. In practice, it is often delayed. As such, Cboe can offer no fixed time by which transaction reporting response files will be present. Therefore the recommended approach is to poll the `uk` or `eu` `outbound/fdbtra` folders periodically to receive the feedback files.

#### **Does Cboe have an XSD schema?**

Please refer to 4.3 which references the ESMA transaction reporting webpage.

#### **Why do cancels need to be in separate files?**

ESMA recommends that cancels are placed within separate files and Cboe has followed that recommendation. A new transaction record contains a report on a trade from an investment firm. A cancellation record contains a cancellation of a transaction record which has already been sent or was included in the same file before the cancellation record. It implies that transaction reports should be included in the file in the respective order and processed in the same order they are included in the file. Nevertheless, it is recommended to report new transaction and cancellation of the same transaction in two separate files. This will allow to avoid any problems related to the identification of the validation results in the feedback status advice file which, in case of submitting new and cancellation in one file, will have the same transaction identification but will not indicate if it relates to new or cancellation.

#### **What time does the recon logic run?**

The reconciliation logic is triggered for a given day any time a feedback file received from the relevant NCA containing data affecting that day.

#### **What does a permission denied(status\_code=3) error mean?**

This may indicate that the upload directory is incorrect and does not exist on the RTRG SFTP site or that you are trying to upload a file to a directory (such as the outbound directory) to which you do not have write permissions.

#### **How should the buyer / seller for an on venue execution be represented?**

Where the trade has been conducted on an anonymous order book, then the other side of the execution should be identified by the LEI of the CCP used for the transaction. Where the counterparty is known (e.g. an ETR transaction) then the counterparty should be identified via its LEI.

#### **What timezone should be used for the date/time at which the trade was executed?**

GMT

#### **In which situations is a client side transaction report expected?**

A client side transaction report (identified as a transaction report that does not have `<TradPlcMtchgId>` populated) is expected only for trades / ETRs that were flagged as PNAL/AGGR on order entry

#### **What is the `<TradVn>` (Trading venue) field to be populated with?**

This field shall be populated with the appropriate Cboe segment MIC for the transaction. The appropriate segment MIC is returned in the `acc.` message in the last market field on FIX/BOE. An overview of Cboe MICs is available on the Cboe website [10].

#### **What is the `<TradPlcMtchgId>` (Trading place matching identifier) aka TVTIC field to be populated with?**



For market side transaction reports, the TVTIC is defined within the Cboe Participant Manual. (Note: BOE execution identifiers are base 10 so must be converted to base 36 for this purpose.) For client side transaction reports this should be left blank.

**How do I obtain the Trading place matching identifier (TVTIC) for a BIDS ETR?**

How this value can be obtained on FIX is described in section 6.1.5 of the LIS FIX spec [11]. Alternatively, this value can be found in the Cboe Trade Data File.

**How should the <TxId> (Transaction Identifier) field be populated?**

This field should be populated with an identifier that is unique to the Participant over all time. That is, a given Transaction Identifier should allow the Participant to uniquely identify the transaction report and should not be reused on subsequent days.

**Can trades be reported in the minor currency?**

No, all transaction reports need to be in the major (ISO) currency. In particular and most common; GBX needs to be converted to GBP.

## 9.2 Connectivity Issues

If you encounter connectivity issues, please check the following:

- Ensure the port being used is 4022 and not 22 (which is the SSH port);
- The private key is being included in the sftp command (not the public key);
- The request is coming from a source IP that was permissioned by Cboe during the on boarding process;  
and
- The username being used in the command is the `****_sftp_user` provided by the desk.

If the above has been confirmed and there is still connectivity issues then please contact the trade desk with a traceroute output, the command being used and the source IP.

## References

- [1] European Commission, *Markets in Financial Instruments (MiFIR) - Regulation (EU) No 600/2014* available from [https://ec.europa.eu/info/law/markets-financial-instruments-mifir-regulation-eu-no-600-2014\\_en](https://ec.europa.eu/info/law/markets-financial-instruments-mifir-regulation-eu-no-600-2014_en)
- [2] European Securities and Markets Authority. *Technical Reporting Instructions: MiFIR Transaction Reporting, 26 October 2016* available from [https://www.esma.europa.eu/sites/default/files/library/2016-1521\\_mifir\\_transaction\\_reporting\\_technical\\_reporting\\_instructions.pdf](https://www.esma.europa.eu/sites/default/files/library/2016-1521_mifir_transaction_reporting_technical_reporting_instructions.pdf)
- [3] European Securities and Markets Authority, *Regulatory technical and implementing standards - Annex 1, 28 September 2015* available from [https://www.esma.europa.eu/sites/default/files/library/2015/11/2015-esma-1464\\_annex\\_i\\_-\\_draft\\_rts\\_and\\_its\\_on\\_mifid\\_ii\\_and\\_mifir.pdf](https://www.esma.europa.eu/sites/default/files/library/2015/11/2015-esma-1464_annex_i_-_draft_rts_and_its_on_mifid_ii_and_mifir.pdf)
- [4] MiFIR Reporting Instructions available from <https://www.esma.europa.eu/policy-rules/mifid-ii-and-mifir/mifir-reporting-instructions>
- [5] Cboe Europe Reference Data file available from [https://markets.cboe.com/europe/equities/support/reference\\_data/](https://markets.cboe.com/europe/equities/support/reference_data/)
- [6] Cboe Europe Participant Manual [http://cdn.batstrading.com/resources/participant\\_resources/BATS\\_Chi-X\\_Europe\\_Participant\\_Manual.pdf](http://cdn.batstrading.com/resources/participant_resources/BATS_Chi-X_Europe_Participant_Manual.pdf)
- [7] Cboe Europe Brexit Privacy Notice Update [https://markets.cboe.com/europe/equities/notices/160437/release\\_notes/](https://markets.cboe.com/europe/equities/notices/160437/release_notes/)
- [8] Cboe Europe FIX Specification [https://cdn.cboe.com/resources/participant\\_resources/BATS\\_Europe\\_FIX\\_Specification.pdf](https://cdn.cboe.com/resources/participant_resources/BATS_Europe_FIX_Specification.pdf)
- [9] Cboe Europe BOE Specification [https://cdn.cboe.com/resources/participant\\_resources/BATS\\_Europe\\_BOE2\\_Specification.pdf](https://cdn.cboe.com/resources/participant_resources/BATS_Europe_BOE2_Specification.pdf)
- [10] Cboe Europe Segment MICs [https://markets.cboe.com/europe/equities/clearing/market\\_codes/](https://markets.cboe.com/europe/equities/clearing/market_codes/)
- [11] Cboe Europe LIS FIX Specification [https://cdn.cboe.com/resources/participant\\_resources/Cboe-LIS-FIX-Specification.pdf](https://cdn.cboe.com/resources/participant_resources/Cboe-LIS-FIX-Specification.pdf)
- [12] Cboe Europe Trade Data File Specification [https://cdn.cboe.com/resources/participant\\_resources/BATS\\_Europe\\_Trade\\_Data\\_File.pdf](https://cdn.cboe.com/resources/participant_resources/BATS_Europe_Trade_Data_File.pdf)
- [13] Cboe Europe Limited, *Cboe Europe Secure Web API* available from [http://cdn.batstrading.com/resources/participant\\_resources/BATSEuro\\_Secure\\_Web\\_API.pdf](http://cdn.batstrading.com/resources/participant_resources/BATSEuro_Secure_Web_API.pdf)

## Revision History

20th July, 2017	Version 1.0 Publication Version.
3rd August, 2017	Version 1.1 Add additional information on schema versions.
15th September, 2017	Version 1.2 Clarification on filename format, certification setup, and transaction amendment.
27th September, 2017	Version 1.3 Clarify that zip files should be uploaded. Cancellation files must only contain transactions for a single trade date.
23rd November, 2017	Version 1.4 Extend file submission window to 6am.
20th December, 2018	Version 1.5 Account for submission to multiple regulators as a result of Brexit. Remove references to draft XML schema versions. Update links.
22nd February, 2019	Version 1.6 Relax restrictions on cancellations. Extend file submission window to 11am
26th March, 2019	Version 1.7 Remove requirement that TRNs contain the Participant's MPID
2nd May, 2019	Version 1.8 Add explicit example of cancellation, add FAQs
31st May, 2019	Version 1.9 Update to describe DXE
4th September, 2019	Version 1.10 Clarification of execution id format
19th September, 2019	Version 1.11 Add details of Reconciliation process and additional FAQs
11th October, 2019	Version 1.12 Add discussion of trade data file, and clarification of which Date/Time to supply
18th October, 2019	Version 2.0 Document new approach to amendment of reports, remove example of manual amendment
5th November, 2019	Version 2.1 Execution IDs are no longer of length 9 but of varying length. Participants no longer have to left pad with zeroes.
12th August, 2020	Version 2.2 Refer to Participant Manual for definition of TVTIC
6th November, 2020	Version 2.3 Include description of reconciliation API, relax requirements around submitted trading date time values
22nd December, 2020	Version 2.4 Add explicit documentation for every reconciliation error type