›eex

Trade Entry Link (TEL) v1.1
Interface Specification

Document history

Date	Version	By	Reason
2019-02-18	1.0	S. Flegel	Initial Implementation
2023-11-20	1.1	S. Flegel	Implementation of Commencement Time field, introduction of T7 release 12.0

Public

Definitions and Abbreviations

Term	Definition / Explanation
EEX	European Energy Exchange AG
ECC	European Commodity Clearing AG
TEL	Trade Entry Link
TIG	Trade Import Gateway
T7	Derivative Trading System used by EEX for its own and other serviced markets
Partner	Partner exchange, straight-through-processing clearing solution provider or individual broker connected to TEL
Trade Side ID	Unique Trade Side Identifier
Member ID	ID of a member in the T7 system
Trader ID	ID of an invidual trader belonging to a member in the T7 system
XML	eXtended Mark-up Language
XSD	XML Schema Definition
TES	Trade Entry Service of the T7 system
AMQP	Advanced Message Queuing Protocol

Public

Table of Content

Public

1. Introduction

The Trade Entry Link (TEL) is EEX's central trade interface for automated trade registration in spot and derivatives products listed on EEX primary trading platform T7. The interface is designed for connecting partner exchanges, brokers and straight-through-processing Trade Registration solutions.

TEL facilitates the registration of exchange trades, bilateral Trade Registrations and brokered Trade Registrations. For exchange trades and brokered Trade Registrations the registration is anonymous for the respective buyer and seller.

TEL offers an open standard messaging interface (AMQP) for the submission of trade files and the dissemination of status information. Partners connect to the interface via dedicated leased lines or VPN.

Public

2. Overview

2.1 Public Message Interface

The TEL message interface for the transmission of trade files and resulting status information uses the *Advanced Message Queuing Protocol* (AMQP) as transport layer. A summary of the technical requirements for connecting to TEL via AMQP is given in chapter 3 of this document, further technical details can be found in the DBAG document 'TIG - Public Message Interface'.

2.2 Trade File

TEL processes XML trade files. The current trade file schema supports the trade types "E" (exchange trades), "O" (bilateral TES trades), and "B" (Brokered, i.e. multilateral trades).

The trade file schema covers all relevant fields to submit futures and options trades of any of the three types. Fields which are only relevant for a specific product category or trade type are optional and can be omitted for the other category or trade types. Required fields and contents are validated by TEL and TES while a trade file is processed.

The trade processing is dependent on the trade type:

- Exchange trades (trade type "E") are registered as such in the T7 system. The trade is booked into the Clearing System in the same way as if it had been matched within the T7 system, after the verification of members, products and member to product assignment. Member status and maximum order quantitiesare optionally verified, if so required for the specific Partner Exchange. The trade type is anonymous.
- Bilateral TES trades (trade type "O") are registered as TES trades between the buyer and the seller but otherwise identically to Exchange trades (trade type "E") in terms of validation.
- Brokered trades (trade type "B") are registered as multilateral transactions where the broker provides the trade details and the buyer and the seller confirm the trade. Depending on the broker to buyer/seller relationships, the counterparties have to confirm the trade in the T7 system either via the *TES Trade Approval* function (direct trade sides) or via a *Take-up* (give-up trade sides) in the clearing system. The procedural difference between the two is that while the trade is pending, the execution risk is either borne by the opposite counterparty (direct trades) or by the broker (give-up trades). Confirmation of entered broker trades (i.e. approval or take-up) by both counterparties can be automated. Default settings for Automatic Confirmation are established in the rules and regulations of EEX and the respective partner exchange as well as the Clearing Conditions of ECC. In addition counterparties can request individual settings for the Automatic Confirmation in a respective EEX customer form. The trade type is anonymous in respect to the buyer and the seller but no vis-à-vis the broker.

Trade types "E" and "O" are reserved to partner exchanges operating their own matching and trade registration systems; trade type "B" can be used by partner exchanges, straight-through-processing clearing solution providers, or directly by a broker.

The field configuration and the processing of trade files are described in chapter 4.

2.3 Trade File Validation

Before the actual processing of the trade file a structural validation of the request is performed. This validation includes:

- The payload of the AMQP request is a well-formed XML message
- The XML message validates against the referenced Trade File XSD schema

- TEL is available for processing the XML message
- The counterparties and the product referenced in the trade file are set up in T7 with the necessary details required for further processing
- The user submitting the trade file is assigned to the origin exchange referenced in the trade file and the referenced trade type is enabled for this partner.

If these checks are unsuccessful an Error Response is sent via the AMQP response channel. For an overview of typical error responses, please refer to Appendix A.

Otherwise the trade entry and further processing in T7 is attempted with dedicated Trade Status information provided along the way and when the processing has reached its final state.

2.4 Trade Status Information

Subsequent to the technical validation of the trade file, TEL disseminates status information by sending XML status files. One XSD schema is used for status messages related to all three trade types but depending on the trade type not all fields may be included or filled.

The first status file is sent after TEL has executed all processing steps which do not require user intervention:

- For the trade types "E" and "O" no manual processing steps are required, hence only one status file is sent, depicting the final outcome of the trade registration process ("Success" vs. "Failure").
- For the trade type "B" prior to this final status message, one or two further status information *may be sent* whenever manual confirmation of one or both trade sides is required.

The status information contains at least the following information

- the Trade Side ID(s) of the trade,
- a status value indicating if the process chain has ended or if an error occurred,
- a status text giving further details about the status of the trade or what action is required,
- separate result fields for the buy and the sell side of the trade.

The TEL status events and the contents of the status file are covered in chapter 5. The standard setting will be the short status information according to 5.2.

3. Public Message Interface

3.1 Introduction

The TEL Public Message Interface allows clients to upload trades to the TEL and to subscribe to a private trade status notification broadcast stream. The communication is based on the *Advanced Message Queuing Protocol* (AMQP) as a transport layer. AMQP is a platform- and language-neutral open standard for the wire protocol.

Further technical information about the AMQP interface can be found in the DBAG document 'TIG - Public Message Interface'.

If a partner newly connects to TEL, EEX will set up required AMQP interface components and provide the partner with the connection details (username, password, server hosts, port and virtual host as well as an SSL security certificate incl. password + SSL Trust Store incl. password). The partner needs to download the AMQP client library and implement client software connecting to the AMQP server.

For failover purposes, TEL provides two broker instances with different IP addresses (all other connection details like port, username, password, client certificate, virtual host are the same). In a standard operating phase, both brokers are active and can be used to connect.

3.2 Message Exchange Patterns

Two basic patterns of message exchange between the client and the TEL are supported:

- Send Request: to submit trade files (this type of communication is initiated by the client)
- Broadcasts: to receive technical responses and trade status files (this type of communication is initiated by TEL)

Send Trade Requests

The general steps for submitting a trade are as follows:

- Create a TEL XML-encoded trade file (as described in chapter 4) and put it into the message body
- Set message attribute *user-id* containing the partner's user-id.
- Set message attribute *correlation-id* to a unique request ID that can be used to match responses with requests. The uniqueness of the correlation-id is handled by each client. The TEL System will not check the uniqueness of the correlation-id sent by the clients.
- Optionally, set message attribute *expiration* to a time stamp when the message should expire.
- Send the message to the AMQP exchange `tig.request.`

Receive Trade Status

The submission of a trade triggers a set of trade status messages depending on the trade type and its processing steps (see chapter 5 for details).

Status messages for a trade are sent to the private queue of the partner which has sent the request (`tig.responseQueue.<exchange_name>`). Users' private broadcast queues are durable queues which are already setup at the AMQP Server. Any client can register a consumer for its private queue to subscribe for broadcasts.

A message consumed from the private broadcast queue must be acknowledged to the server as soon as it has been received. Otherwise, the server side queue gets filled with unacknowledged messages which might lead to high memory consumption.

3.3 Security

For connecting to the AMQP server a username and password is required which will be configured and provided to the partner by EEX.

In addition a security certificate for encrypting the network connection will be provided.

3.4 Operations

TEL is not available overnight. In the time between **19:00 and 07:30 CET** client applications should not monitor the heartbeat queue and should generally not try to communicate with TEL.

When TEL restarts – after overnight downtime or due to a any other reason – it purges all queues. Correspondingly, clients connected to TEL queues must establish an automated detection of server-side cancellation of queues (for further details, please refer to: http://www.rabbitmq.com/consumer-cancel.html). In case a queue is cancelled (purged), the client application shall automatically reconnect the respective queue.

A client application connected to TEL needs to monitor the heartbeat queue to determine, if TEL is working. If there are no heartbeats for **more than 2 minutes** (one per minute is the regular behaviour) it must be assumed that TEL is down. In this case the client should not submit any trades until the queues have been reconnected and heartbeats are received again. All trades submitted to TEL, for which no initial status message has been received, must be marked as suspect. These trades need to be manually checked by EEX because processing may have caused a technical problem or processing has not started and the trades are purged from the queue on restart.

In addition all trades for which no initial status message is received **within 15 minutes** should generally be marked as suspect. As long as TEL is still sending heartbeats the most likely reason for this is that T7 is not available (e.g. is a trade is sent out of trading hours).

A suspect trade may be resubmitted, with identical trade details and **same trade ID**. Depending on the situation of the original suspect trade:

- Processing will kick-off (original trade never reached TEL)
- Processing will be re-tried (original trade reached TEL but was not completed successfully)
- An error message is returned (original trade is still being processed or was completed successfully)

4. Trade File

4.1 Trade Types

TEL facilitates three different types of trade registration processes for different business purposes. The "Trade type" field indicates the type of registration process and defines what further process related information is expected in the trade file.

The available trade types are:

- "E" for exchange trades,
- "O" for bilateral TES trades, and
- "B" for brokered trades.

 The use of a trade type is dependent on the authorisation of the connected partner and a corresponding legal agreement with EEX. Consequently not all partners have access to all trade types.

4.2 XML Schema

File format (Example for Trade Type E – Exchange Trade)

```xml
<?xml version="1.0" encoding="UTF-8"?>
<tradeloader xmlns="http://schemas.deutsche-boerse.com/tig"
      xmlns:xsi=http://www.w3.org/2001/XMLSchema-instance>

      <trade>
            <origin>
                  <originExchange>PXPX</originExchange>
                  <originTradeId>trade00</originTradeId>
            </origin>
            <destination>
                  <destinationExchange>XEEE</destinationExchange>
            </destination>
            <product>
                  <productId>DEBY</productId>
                  <future>
                        <expirationMonth>01</expirationMonth>
                        <expirationYear>2024</expirationYear>
                  </future>
            </product>
            <tradeInfo>
                  <tradeType>E</tradeType>
                        <price>
                              <matchingPrice>4970</matchingPrice>
                              <decimalAdjustment>2</decimalAdjustment>
                              <currency>EUR</currency>
                        </price>
                  <quantity>
                        <amount>10</amount>
                  </quantity>
            </tradeInfo>
            <buyer>
                  <companyId>ABCEX</companyId>
                  <accountTypCod>A</accountTypCod>
                  <accountTypNo>1</accountTypNo>
                  <reference1></reference1>
                  <reference2>PX Test</reference2>
```

```
                    <ocIndicator>O</ocIndicator>
            </buyer>
            <seller>
                    <companyId>AAAEX</companyId>
                    <accountTypCod>P</accountTypCod>
                    <accountTypNo>1</accountTypNo>
                    <reference1></reference1>
                    <reference2>PX Test</reference2>
                    <ocIndicator>O</ocIndicator>
            </seller>
        </trade>
</tradeloader>
```

File format (Example for Trade Type B – Brokered Trade)

```
<?xml version="1.0" encoding="UTF-8"?>
<tradeloader xmlns="http://schemas.deutsche-boerse.com/tig"
        xmlns:xsi=http://www.w3.org/2001/XMLSchema-instance>

        <trade>
                <origin>
                        <originExchange>STPX</originExchange>
                        <originTradeId>ABC1234567</originTradeId>
                </origin>
                <destination>
                        <destinationExchange>XEEE</destinationExchange>
                </destination>
                <product>
                        <productId>F1BY</productId>
                        <future>
                                <expirationMonth>01</expirationMonth>
                                <expirationYear>2014</expirationYear>
                        </future>
                </product>
                <tradeInfo>
                        <tradeType>B</tradeType>
                        <price>
                                <matchingPrice>4970</matchingPrice>
                                <decimalAdjustment>2</decimalAdjustment>
                                <currency>EUR</currency>
                        </price>
                        <quantity>
                                <amount>10</amount>
                        </quantity>
                        <TransBkdTime>169882756000</TransBkdTime>
                        <resend>false</resend>
                </tradeInfo>
                <broker>
                        <companyId>XYZEX</companyId>
                </broker>
                <buyer>
                    <companyId>ABCEX</companyId>
                    <traderId>TRD001</traderId>
                    <accountTypCod>A</accountTypCod>
                    <accountTypNo>1</accountTypNo>
                    <reference1></reference1>
                    <reference2>STP Test</reference2>
                    <ocIndicator>O</ocIndicator>
                    <automaticallyMatched>true</automaticallyMatched>
                    <alreadyConfirmed>true</alreadyConfirmed>
                    <performGiveUp>false</performGiveUp>
```

Public

```
                  <investmentDecisionMakerQualifier>HUMAN</investmentDecisionMakerQualifier>
                  <investmentDecisionMaker>45678</investmentDecisionMaker>
                  <executingTraderQualifier>HUMAN</executingTraderQualifier>
                  <executingTrader>56789</executingTrader>
                  <commodityHedging>false</commodityHedging>
            </buyer>
            <seller>
                  <companyId>AAAEX</companyId>
                  <traderId>OTC001</traderId><accountTypCod>P</accountTypCod>
                  <accountTypNo>1</accountTypNo>
                  <reference1></reference1>
                  <reference2>STP Test</reference2>
                  <ocIndicator>O</ocIndicator>
                  <automaticallyMatched>true</automaticallyMatched>
                  <alreadyConfirmed>true</alreadyConfirmed>
                  <performGiveUp>true</performGiveUp>
                  <investmentDecisionMakerQualifier>ALGO</investmentDecisionMakerQualifier>
                  <investmentDecisionMaker>45678</investmentDecisionMaker>
                  <executingTraderQualifier>ALGO</executingTraderQualifier>
                  <executingTrader>56789</executingTrader>
                  <commodityHedging>true</commodityHedging>
                  <clientId>5678</clientId>
                  <tradingCapacity>DEAL</tradingCapacity>
            </seller>
      </trade>
</tradeloader>
```

Field list

The trade file schema contains the following fields:

#	Fieldname	Format	Importance	Example value	Remark
1	Origin Exchange	Exchange/Market Identifier Codes	Mandatory	PXPX	Abbreviation for the partner exchange / broker interface; assigned by EEX and static for all trades of a partner
2	Origin Trade ID	CHAR(12)	Mandatory	121245-GJZ24 or ABC1234567	Unique key, generated by the trading platform of the connected partner. For Trade Type "B" the first digit should indicate the respective broker mnemonic and the following digits can be chosen freely
3	Destination Exchange	Exchange/Market Identifier Codes	Mandatory	XEEE	Technical short code for EEX (*static for all trades, not processed further*)
4	Product ID	CHAR(30)	Mandatory	DEBY	Exchange product ID
5	(Future/Option) Expiration Month	CHAR(2)	Mandatory	1	Expiry month of the contract
6	(Future/Option) Expiration Year	CHAR(4)	Mandatory	2024	Expiry year of the contract
7	(Option) Contract Class Code	CHAR(1)	Mandatory for Options	C	Call (C) or Put (P)
8	(Option) Contract Exercise Price	CHAR(6)	Mandatory for Options	123400	Options contract exercise price with decimal places without decimal delimiter. Number of decimals as per product definition.
9	Trade Type	CHAR(1)	Mandatory	B, E, or O	(see 4.1)

10	(Price) Matching Price	INTEGER	Mandatory	67250	Trade price with decimal places without decimal delimiter (e.g. price of 67.250 has to be shown as 67250). Number of decimals as per product definition.
11	(Price) Decimal Adjustment	INTEGER	Mandatory	3	Decimal places of the product
12	(Price) Currency	CHAR(3) [A-Z]{3}	Mandatory	EUR	Currency of the product (e.g. "EUR", "GBP", "GBX", "USD") according to ISO4217 Currency Code List and internal EUREX currency codes (GBX) – *Note: this serves information purposes only and is not used during processing*
13	(Quantity) Amount	INTEGER	Mandatory	500	Number of contracts traded
14	(Broker) Company ID	CHAR(20)	Mandatory for Trade Type "B"	ABCEX	Member ID of the broker (used for brokered trades only)
15	(Buyer) Company ID	CHAR(20)	Mandatory	XYZEX	Member ID of the buyer
16	(Buyer) Trade ID	CHAR(3)	Optional (used for Trade Type "B", only)	IMP001	Trader ID of traders of the buyer responsible for manual trade approval.
17a	(Buyer) Account Type Code	CHAR(1)	Optional	A, P, or M	Account Type Code buy side, must be used in conjunction with 17b
17b	(Buyer) Account Type Number	CHAR(1)	Optional	1 ... 9	Account Type Number buy side, must be used in conjunction with 17a
18	(Buyer) Account	CHAR(2)	Optional	A1, P1, …	Possible to use instaead of 17a / 17b
19	(Buyer) Reference 1	CHAR(12)	Optional	blank or respective value	1st text field buy side
20	(Buyer) Reference 2	CHAR(12)	Optional	blank or respective value	2nd text field buy side
21	(Buyer) O/C Indicator	CHAR(1)	Optional	"O" or "C"	Buy side: "O" – Open or "C" – Close
22	(Buyer) AutomaticallyMatched	BOOLEAN	Optional (used for Trade Type "B", only)	"true" or "false"	Depending on this entry the take-up or TES approval for the buy side might take place; defaults to false if not delivered
23	(Buyer) AlreadyConfirmed	BOOLEAN	Optional (used for Trade Type "B", only)	"false"	Static for all trades, not processed any further
24	(Buyer) PerformGiveUp	BOOLEAN	Optional (used for Trade Type "B", only)	"true" or "false"	True means, buy side is a give-up Trade, False means it is a direct trade; default is false if not delivered
25	(Buyer) investmentDecisionMakerQualifier	Investment Decision Maker Codes	Optional (used for Trade Type "B", only)	"HUMAN" or "ALGO"	Mifid II parameter, indicates if the investment decision was taken by a human or an algorithm
26	(Buyer) investmentDecisionMaker	INTEGER	Optional (used for Trade Type "B", only)	123456	Mifid II parameter, defines which human or algorithm took the investment decision
27	(Buyer) executingTraderQualifier	Executing Trader Codes	Optional (used for Trade Type "B", only)	"HUMAN" or "ALGO"	Mifid II parameter, indicates if the trade execution was done by a human or an algorithm
28	(Buyer) executingTrader	INTEGER	Optional (used for Trade Type "B", only)	123456	Mifid II parameter, defines which human or algorithm did the trade execution
29	(Buyer) commodityHedging	INTEGER	Optional (used for Trade Type "B", only)	"true" or "false"	Indicates if the trade has a physical background and is used for hedging purposes of such or if it is purely speculative.

Public

30	(Buyer) clientID	BOOLEAN	Optional (used for Trade Type "B", only)	123456	Identifies on which third beneficiaries behalf the trade was done.
31	(Buyer) tradingCapacity	Trading Capacity Codes	Optional (used for Trade Type "B", only)	"DEAL" or "AOTC"	Indicates the origin of the trade.
32	(Seller) Company ID	CHAR(20)	Mandatory	DEFEX	Member ID of the seller
33	(Seller) Trader ID	CHAR(3)	Optional (used for Trade Type "B", only)	TRD001	Trade ID of traders of the seller responsible for manual trade approval
34a	(Seller) Account Type Code	CHAR(1)	Optional	A, P, or M	Account Type Code sell side, must be used in conjunction with 34b
34b	(Seller) Account Type Number	CHAR(1)	Optional	1 … 9	Account Type Number sell side, must be used in conjuction with 34a
35	(Seller) Account	CHAR(2)	Optional	A1, P1, …	Possible to use instaead of 35a/35b
36	(Seller) Reference 1	CHAR(12)	Optional	blank or respective value	1st text field sell side
37	(Seller) Reference 2	CHAR(12)	Optional	blank or respective value	2nd text field sell side
38	(Seller) O/C Indicator	CHAR(1)	Optional	"O" or "C"	Sell side: "O" – Open or "C" – Close
39	(Seller) AutomaticallyMatched	BOOLEAN	Optional (used for Trade Type "B", only)	"true" or "false"	Depending on this entry the take-up or TES approval for the buy side might take place; defaults to false if not delivered
40	(Seller) AlreadyConfirmed	BOOLEAN	Optional (used for Trade Type "B", only)	"false"	Static for all trades, not processed any further
41	(Seller) PerformGiveUp	BOOLEAN	Optional (used for Trade Type "B", only)	"true" or "false"	True means, it sell side a give-up Trade, False means it is a direct trade; default is false if not delivered
42	(Seller) investmentDecisionMakerQualifier	Investment Decision Maker Codes	Optional (used for Trade Type "B", only)	"HUMAN" or "ALGO"	Mifid II parameter, indicates if the investment decision was taken by a human or an algorithm
43	(Seller) investmentDecisionMaker	INTEGER	Optional (used for Trade Type "B", only)	123456	Mifid II parameter, defines which human or algorithm took the investment decision
44	(Seller) executingTraderQualifier	Executing Trader Codes	Optional (used for Trade Type "B", only)	"HUMAN" or "ALGO"	Mifid II parameter, indicates if the trade execution was done by a human or an algorithm
45	(Seller) executingTrader	INTEGER	Optional (used for Trade Type "B", only)	123456	Mifid II parameter, defines which human or algorithm did the trade execution
46	(Seller) commodityHedging	INTEGER	Optional (used for Trade Type "B", only)	"true" or "false"	Indicates if the trade has a physical background and is used for hedging purposes of such or if it is purely speculative.
47	(Seller) clientID	BOOLEAN	Optional (used for Trade Type "B", only)	123456	Identifies on which third beneficiaries behalf the trade was done.
48	(Seller) tradingCapacity	Trading Capacity Codes	Optional (used for Trade Type "B", only)	"DEAL" or "AOTC"	Indicates the origin of the trade.
49	TransBkadTime	INTEGER(19)	Optional, used for Commen-cementTime	1698827560000000000	Indicates the time when a TES Trades was originally agreed bilaterally or via broker via unix time stamp

Field validation

The following validations and mappings are done by the TEL before the trade is processed:

#	Fieldname	Validations & Mappings
1	Origin Exchange	ID that EEX has assigned to the connected partner (static for all trades)
2	Origin Trade ID	Only format is validated
3	Destination Exchange	XEEE (static for all trades), not validated and not processed any further
4	Product ID	Valid Product ID available via T7 reference data interface
5	(Future/Option) Expiration Month	01, 02, 03, 04, 05, 06, 07, 08, 09, 10,11,12
6	(Future/Option) Expiration Year	2020,…, 2030 (numeric)
7	(Option) Contract Class Code	For Options: "C" or "P", for futures it must be empty
8	(Option) Contract Exercise Price	For Options INTEGER, for futures it must be empty
9	Trade type	"E", "O", "B"
10	(Price) Matching Price	>= 0 (INTEGER)
11	(Price) Decimal Adjustment	0,…, 9 (INTEGER)
12	(Price) Currency	Only format is validated
13	(Quantity) Amount	>0, max13 digits (INTEGER)
14	(Broker) Company ID	Valid Member ID of an EEX member
15	(Buyer) Company ID	Valid Member ID of an EEX member
16	(Buyer) Trader ID	Valid Trader ID of the specified member (not validated by TEL, but T7)
17a	(Buyer) accountTypCod	"A", "P" ,or "M" (if empty the default setting from the paticipants Auto Approval rule or a global default is used)
17b	(Buyer) accountTypNo	"1" … "9" (if empty the default setting from the paticipants Auto Approval rule or a global default is used)
18	(Buyer) account	"A1", "A2", "P1", "P2", "M1", "M2",… (if empty the default setting from the paticipants Auto Approval rule or a global default is used, when provided additionally to accountTypCod and accountTypNo, it will overrule both)
19	(Buyer) Reference 1	Optional, only format is validated
20	(Buyer) Reference 2	Optional, only format is validated
21	(Buyer) O/C Indicator	"O" or "C" (if empty the default setting from the submitting partner's participant table is used)
22	(Buyer) AutomaticallyMatched	Optional, true or false (used for Trade Type "B" only)
23	(Buyer) AlreadyConfirmed	Optional, Not used any more
24	(Buyer) PerformGiveUp	Optional, true or false (used for Trade Type "B" only)
25	(Buyer) investmentDecisionMakerQualifier	Optional, "HUMAN" or "ALGO" (used for Trade Type "B" only)
26	(Buyer) investmentDecisionMaker	Optional, only format is validated (used for Trade Type "B" only)
27	(Buyer) executingTraderQualifier	Optional, "HUMAN" or "ALGO" (used for Trade Type "B" only)
28	(Buyer) executingTrader	Optional, only format is validated (used for Trade Type "B" only)
29	(Buyer) commodityHedging	Optional, "true" or "false" (used for Trade Type "B" only)
30	(Buyer) clientID	Optional, only format is validated (used for Trade Type "B" only)
31	(Buyer) tradingCapacity	Optional, "DEAL" or "MTCH" or "AOTC" (used for Trade Type "B" only)
32	(Seller) Company ID	Valid Member ID of an EEX member (not validated by TEL, but T7)
33	(Seller) Trader ID	Valid Trader ID of the specified member
34a	(Seller) accountTypCod	"A", "P" ,or "M" (if empty the default setting from the paticipants Auto Approval rule or a global default is used)
34b	(Seller) accountTypNo	"1" … "9" (if empty the default setting from the paticipants Auto Approval rule or a global default is used)
35	(Seller) account	"A1", "A2", "P1", "P2", "M1", "M2",… (if empty the default setting from the paticipants Auto Approval rule or a global default is used, when provided additionally to accountTyoCod and accountTypNo, it will overrule both)
36	(Seller) Reference 1	Optional, only format is validated

37	(Seller) Reference 2	Optional, only format is validated
38	(Seller) O/C Indicator	"O" or "C" (if empty the default setting from the submitting partner's participant table is used)
39	(Seller) AutomaticallyMatched	Optional, true or false (used for Trade Type "B" only)
40	(Seller) AlreadyConfirmed	Optional, Not used any more
41	(Seller) PerformGiveUp	Optional, true or false (used for Trade Type "B" only)
42	(Seller) investmentDecisionMakerQualifier	Optional, "HUMAN" or "ALGO" (used for Trade Type "B" only)
43	(Seller) investmentDecisionMaker	Optional, only format is validated (used for Trade Type "B" only)
44	(Seller) executingTraderQualifier	Optional, "HUMAN" or "ALGO" (used for Trade Type "B" only)
45	(Seller) executingTrader	Optional, only format is validated (used for Trade Type "B" only)
46	(Seller) commodityHedging	Optional, "true" or "false" (used for Trade Type "B" only)
47	(Seller) clientID	Optional, only format is validated (used for Trade Type "B" only)
48	(Seller) tradingCapacity	Optional, "DEAL" or "AOTC" (used for Trade Type "B" only)
49	TransBkdTime	Optional, Integer(19), unix Timestamp

Contract identification

The contract identification field group in the XML schema consists of the fields below. For futures the option fields are not sent or empty.

#	Fieldname	Options	Futures
4	Product ID	Mandatory	Mandatory
6	(Future/Option) Expiration Month	Mandatory	Mandatory
7	(Future/Option) Expiration Year	Mandatory	Mandatory
8	(Option) Contract Class Code	Mandatory	n/a
9	(Option) Contract Exercise Price	Mandatory	n/a

If the Product ID refers to a future product, the corresponding details (Expiration Month, Expiration Year) are encapsulated in a <future> element.

If the Product ID refers to an option product, the corresponding details (Expiration Month, Expiration Year, Contract Class Code, and Contract Exercise Price are encapsulated in a <option> element.

Price information

The process-relevant information related to the prices is contained in fields 9 *Option Contract Exercise Price* and 11 *Matching Price*.

- The *Matching Price* must be transmitted with the correct number of decimals configured for a product but without a decimal delimiter. E.g. for a product with two decimal places configured in Eurex a trade price of EUR 42.50 is transmitted as "4250"; for a product with three decimal places the same price must be transmitted as "42500".
- For options contracts the *Option Contract Exercise Price* must be transmitted with the correct number of decimals as per product definition. This number can be different to the number of decimal places defined for the Option product itself (*Matching Price*). E.g. for an option product set up with 3 decimal places and Exercise Price with 2 decimal places, an *Option Contract Exercise Price* of EUR 20.00 must be transmitted as "2000" and a *Matching Price* of EUR 12.00 must be transmitted as "12000".

A trade price must always be transmitted in the currency of the product. The additional field 12 *Currency* is for information purposes only and ignored during processing.

Trader ID information

For the submissions of TES trades the specification of the full trader ID of all participants involved in the trade is mandatory. EEX is configuring a default in its environment. Hence the provision via xml trade file is optional and only necessary if the receiving trader ID differs from the default.

4.3 Exchange Trades

Exchange trades (trade type "E") are registered as trades with on-exchange status, i.e. as if two orders had been matched in the T7 system. The following processing steps are executed:

1. Validation whether the partner is allowed to send trade type "E".
2. If required for this partner, checking, whether the buyer and/or the seller are in *State* "HALT".
3. Validation of contract specifications against the T7 reference data information..
4. Validation of *Company ID*s against configurations in T7 regarding the allowance to receive such trades from this partner
5. Registration of the exchange trade (as part of the registration it is verified that the product is assigned to both counterparties)

If any of the validations listed above fail, processing stops and an error is returned.

Exchange trades are anonymous as both the buyer and seller trade against ECC as central counterparty and only this counterparty is shown in the Eurex system or the reports.

4.4 Bilateral TES Trades

Bilateral OTC trades (trade type "O") are registered as OTC Block trades between the specified buyer and seller. As these trades must have been previously confirmed by both parties in the partner's matching system, they are automatically confirmed and final in the T7 system. The following processing steps are executed:

1. Validation whether the partner is allowed to send trade type "O".
2. Validation of contract specifications against the T7 reference data.
3. Validation of *Company ID*s against configurations in T7 regarding the allowance to receive such trades from this partner
4. Entry of the TES Block trade without the necessity of further approval by buyer and seller

If any of the validations listed above fail, processing stops and an error is returned.

Bilateral TES trades are not anonymous as the buyer and the seller may see each other when checking the trade in the Eurex system or in a report.

4.5 Brokered Trades

Brokered trades (trade type "B") are initially entered as a multilateral transaction on behalf of the broker. Further processing steps may be executed depending on the trade specifications and auto-confirmation (approval, take-up) agreements between the buyer/seller and EEX.

Setting the *PerformGiveUp* field for the buyer and seller, the broker can opt for one of two processing alternatives:

Direct trade (*PerformGiveUp* = False)

If e.g. the buy side of a trade is marked as direct trade, the actual buyer is entered as the buyer of the trade and needs to approve the trade in the TES Trade entry window in T7. To approve the trade, the buyer must be loggin with the respective trader ID provied as buyer trader ID by the broker (or default setting).

Instead of a manual approval participants can opt for automated approvals based on certain rules the participant can define within the respective EEX forms.

As long as a direct trade side is pending, the opposite counterparty bears the execution risk if the trade is not approved due to erroneous trade details.

Give-up trade (*PerformGiveUp* = True)

If e.g. the buy side of a trade is marked as give-up trade, initially the broker is entered as the buyer of the trade and the trade side is automatically approved on his behalf. Next, the trade is given-up to the actual buyer who then needs to manually take-up the trade via the corresponding window in the clearing system.

Instead of a manual take-up participants can opt for automated take up based on certain rules the participant can define within the respective EEX forms.

As long as a give-up trade side is pending, it is factually a valid trade on the broker's account, i.e. the broker bears the risk of being margined the open position if the trade is not taken-up until the end of the trading day.

Processing

The following processing steps are executed for brokered trades:

1. Validation whether the partner is allowed to send trade type "B".
2. Validation of contract specifications against the T7 reference data.
3. For give-up trade sides validation that the counterparty is not in *State* "HALT" and that the trade quantity does not exceed the Maximum Wholesale Quantity (for direct trade sides this validation is done for technical reasons as part of the registration process itself)
4. Validation of *Company ID*s
5. Entry of the trade details on behalf of broker. As part of the trade entry, it is checked whether the trade price is within the allowable TES price range.
   a. If for the buy side of the trade *PerformGiveUp* = False, set the buyer to the actual buyer; otherwise set the buyer to the broker, approve the trade and give it up to the actual buyer.
   b. If for the sell side of the trade *PerformGiveUp* = False, set the seller to the actual seller; otherwise set the seller to the broker, approve the trade and give it up to the actual seller.

Please note that the give-up(s) only become effective after all direct trade sides have been automatically or manually approved.

6. Monitor the trade for manual changes via the T7 system or for time-outs, disseminate status information and apply auto-approvals where applicable (see below for details).

Automatic Confirmation (Approval / Take-up)

Default settings for Automatic Confirmation of trades are established in the rules and regulations of EEX or the respective partner exchange of ECC. Furthermore, members can opt-out of any default setting for Automatic Confirmation or enter into an Automatic Confirmation agreement with EEX.

If a brokered trade registered via STP meets either of these conditions, it will be – depending on the trade process – either automatically approved or taken-u.

Members can define auto- approval- and auto-take-up rules based on the broker registering the trade and the type of execution (Automatic Execution or Always). Auto approval or auto-take-up is applied if

- "Always" is defined for the submitting broker or if
- "Automatic Execution" is defined for the submitting broker and the field *AutomaticallyMatched* is set for the corresponding trade side or if

The field *AutomaticallyMatched* has to be set to true if the deal was screen-executed or automatically matched on a trading venue, and if an order was entered into a trading screen by a customer and is automatically executed. It may not be set for voice deals.

Public

5. Status Messages

5.1 Status Events

TEL broadcasts status information for all trades registered via the interface. The following status events are considered:

- All initial processing steps (i.e. all processing steps that do not require user intervention) have been completed successfully.
- For a trade with trade type "B" an approval occurred on a direct trade side.
- For a trade with trade type "B" a take-up occurred on a give-up trade side.
- A trade with trade type "B" has timed-out due to an unapproved direct trade side at the end of the trading day
- A trade with trade type "B" and a give-up trade side has timed-out, because its take-up was missing at the end of the trading day
- An error or mapping issue occurred during processing.

5.2 Standard Status File XML Schema

File format

Status information is sent in the form of XML status files. The following status file schema (with sample values) is being used for all three trade types:

```xml
<?xml version="1.0" encoding="UTF-8"?>
<tradeloader xmlns="http://schemas.deutsche-boerse.com/tig"
      xmlns:xsi=http://www.w3.org/2001/XMLSchema-instance>

    <tradeStatus>
        <origin>
            <originExchange>STP1</originExchange>
            <originTradeId>20200110-m01</originTradeId>
        </origin>
        <destination>
            <destinationExchange>XEEE</destinationExchange>
        </destination>
        <statusInformation>
            <tradeReceiveDateTime>2013-05-
10T10:37:11.000+02:00</tradeReceiveDateTime>
            <status>PROCESSING_ENDED</status>
            <systemId>123000456</systemId>
            <statusText>TIMED-OUT</statusText>
            <approvalTime/>
            <buyer>
                <systemId>123000456</systemId>
                <result>approved</result>
            </buyer>
            <seller>
                <systemId>3210004567</systemId>
                <result>timed-out</result>
            </seller>
        </statusInformation>
    </tradeStatus>
</tradeloader>
```

Field list:

#	Fieldname	Format	Importance	Example value	Remark
1	Origin Exchange	Exchange/Market Identifier Codes	Mandatory	STPX	Abbreviation for the partner exchange / broker interface; assigned by EEX and static for all trades of a partner
2	Origin Trade ID	CHAR(12)	Mandatory	12 1245-GJZ24	Unique key, generated by the trading platform of the connected partner
3	Destination Exchange	Exchange/Market Identifier Codes	Mandatory	XEEE	Technical short code for EEX (static for all trades)
4	Trade Receive Date Time	DATE	Mandatory	2013-05-10T10:37:11.000+02:00	Date / time when the trade was received by TEL
5	Status	STRING	Mandatory	PROCESSING_ENDED	Status value according to the table below
6	System ID	STRING	Mandatory	0123789	Package ID used within the TES registration workflow, not necessary for further processing
7	Status Text	STRING	Mandatory	TIMED-OUT	Status text value according to the table below
8	Approval Time	STRING	Optional/ obsolete	"undefined"	
9	(Buyer) System ID	STRING	Mandatory	AB4560321	Individual allocation ID of the buy side, also expressed in the T7 trade confirmation as "OrdNo" and in the original order number field of the clearing system. Can therefore be used to reconcile the trade end to end.
10	(Buyer) Result	CHAR(20)	Optional (used for Trade Type "B", only)	approved	For trade type "B", buy side result value according to the table below
11	(Seller) System ID	STRING	Optional (used for Trade Type "B", only)	CD78900258	Individual allocation ID of the buy side, also expressd in the T7 trade confirmation as "OrdNo" and in the original order number field of the clearing system. Can therefore be used to reconcile the trade end to end.
12	(Seller) Result	CHAR(20)	Optional (used for Trade Type "B", only)	pending	For trade type "B", sell side result value according to the table below

Status values

The main status fields are *Status* and *Status Text*. These are used for all three trade types. For trade type "B" the additional *Result* fields for the buy and the sell side reflect the confirmation status of that side of the trade.

It should be noted, that for trade type "B" all 4 status fields need to be evaluated to fully understand the current status of the trade.

The status xml contains no history, but only the last state of the trade processing. The following tables in chapter 5.3 show the possible combinations of status values:

5.3 Status Values

Exchange Interfaces (Trade Types "E" and "O")

Trade Type	Status	Status Text	Buyer Result	Seller Result	Comment
E / O	PROCESSING_ENDED	SUCCESSFUL_ COMPLETION	approved	approved	The exchange or TES trade was processed successfully
E / O	ERRONEOUS	Exception: ...	n/a	n/a	An error occurred during processing or the validation of the trade in TEL failed; further information can be found in the exception description in the *Status text*
E / O	REJECTED	Exception: ...	n/a	n/a	The trade was rejected; further information can be found in the exception description in the *Status text*

Broker Interfaces (Trade Type "B")

Buy / Sell Direct Entry or Give-up	Status	Status Text	Buyer Result	Seller Result	Comment
D / D	ACCEPTED	PENDING	unapproved	unapproved	Brokered trade with two direct trade sides was entered by TEL and is now waiting for approval
D / D	ACCEPTED	PENDING	unapproved	approved	Trade was approved by the seller and is waiting for buyer approval
D / D	ACCEPTED	PENDING	approved	unapproved	Trade was approved by the buyer and is waiting for seller approval
D / D	PROCESSING_ENDED	SUCCESSFUL_ COMPLETION	approved	approved	Trade was approved by both counterparties; processing has ended and TEL will send no further status updates
D / D	PROCESSING_ENDED	TIMED-OUT	approved	timed-out	Seller approval has timed-out (no trade in the system); processing has ended and TEL will send no further status updates
D / D	PROCESSING_ENDED	TIMED-OUT	timed-out	approved	Buyer approval has timed-out (no trade in the system); processing has ended and TEL will send no further status updates
D / D	PROCESSING_ENDED	TIMED-OUT	timed-out	timed-out	Buyer and seller approvals have timed-out (no trade in the system); processing has ended and TEL will send no further status updates
D / G	ACCEPTED	PENDING	unapproved	give-up-pending	Brokered trade with direct registration on the buy side was entered by TEL and is now waiting for approval by buyer
D / G	ACCEPTED	PENDING	approved	given-up	Trade was approved by the buyer and is now waiting for seller take-up
D / G	PROCESSING_ENDED	SUCCESSFUL_ COMPLETION	approved	taken-up	Trade was taken-up by the seller; processing has ended and TEL will send no further status updates
D / G	PROCESSING_ENDED	TIMED-OUT	timed-out	timed-out	Buyer approval has timed-out (no trade in the system); processing has ended and TEL will send no further status updates
D / G	PROCESSING_ENDED	TIMED-OUT	approved	timed-out	After buyer approval the seller take-up has timed-out (trade in the system with sell side booked on the broker); processing has ended and TEL will send no further status updates

G / G	ACCEPTED	PENDING	given-up	given-up	Brokered trade with two give-up trade sides was entered by TEL and is now waiting for take-ups
G / G	ACCEPTED	PENDING	given-up	taken-up	Trade was taken-up by the seller and is waiting for buyer take-up
G / G	ACCEPTED	PENDING	taken-up	given-up	Trade was taken-up by the buyer and is waiting for seller take-up
G / G	PROCESSING_ENDED	SUCCESSFUL_ COMPLETION	taken-up	taken-up	Trade was taken-up by the buyer and is waiting for seller take-up
G / G	PROCESSING_ENDED	TIMED-OUT	taken-up	timed-out	Seller take-up has timed-out (<u>trade in the system with sell side booked on the broker</u>); processing has ended and TEL will send no further status updates
G / G	PROCESSING_ENDED	TIMED-OUT	time-out	taken-up	Buyer take-up has timed-out (<u>trade in the system with buy side booked on the broker</u>); processing has ended and TEL will send no further status updates
G / G	PROCESSING_ENDED	TIMED-OUT	timed-out	timed-out	Both take-ups have timed-out (<u>trade in the system with both sides booked on the broker</u>); processing has ended and TEL will send no further status updates
Any	ERRONEOUS	Exception: ...	n/a	n/a	An error occurred during processing or the validation of the trade in TEL failed; further information can be found in the exception description in the *Status text*
Any	REJECTED	Exception: ...	n/a	n/a	The trade was rejected; further information can be found in the exception description in the *Status text*
Any	MANUAL_ACTION_ REQUIRED	Exception: ...	n/a	n/a	An issue occurred requiring manual intervention; the trade was not processed; further information can be found in the exception description in the *Status text*

Public

Appendix A – Technical error messages

statusText	Further description of validation error
Partner does not exist in configuration for '<user_id>' user-id.	No partner with matching AMQP user_id found in cfg.xml of TEL.
Trade is on the black list	originExchange/originTradeId combination found in TEL black list.
Invalid trading type.	tradeType is not equal to B for STP partner, or not equal to E or O for partner exchange.
Invalid origin exchange.	originExchange does not match partner name found in cfg.xml of TEL.
The originTradeId '<originTradeId>' must not have been used by partner '<originExchange>' for a successfully uploaded trade within <n> days.	The originTradeId has been used by this partner for a successfully uploaded trade within the last <n> business days, where <n> is configured in TEL (default value: 10 days).
A T7 Connection record must be available for the member code in broker.companyId = <broker.companyId> and the connection must be related to the partner = <partnerName>	No T7 configuration found for partner/broker in cfg.xml of TEL.
Product is not translatable.	No T7 instrument id found for given product.
Buyer is null.	No buyer element found in trade.
Seller is null.	No seller element found in trade.
Either buyer account or account type number should be filled out.	Neither account nor accountTypeNo found in buyer element of trade.
Either seller account or account type number should be filled out.	Neither account nor accountTypeNo found in seller element of trade.
User id not found for partner name <partnerName> and broker company id <broker.companyId>	No T7 connection available for user name configured in T7 configuration related to this partner/broker in cfg.xml of TEL.
No party executing trader defined for <BUY | SELL> side and origin trade id <originTradeId>	Party executing trader for buy or sell side could not be determined (i.e. no traderId given in trade and no member-specific or global default trader found in cfg.xml of TEL.

Public