T7 Release 8.0

Cross System Traceability

Version   8.0 - 1.1

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Content

1   Introduction

T7 is a state-of-the-art trading architecture developed by Deutsche Börse Group. T7 offers high performance together with reliable connectivity, enriched trading functionality, as well as a faster time-to-market. The T7 trading architecture is used to operate the derivatives markets as well as the cash markets.

1.1 Purpose of this document

This document contains detailed information on order, quote and trade traceability across trading and clearing systems focusing on the markets XEUR (Eurex Frankfurt), XETR (Xetra Frankfurt) and XFRA (Börse Frankfurt).

1.2 Further reading

The following documents provide additional information:

Overview and Functionality	Interfaces
• T7 Release Notes for Cash and Derivatives Markets • T7 Functional Reference • Participant and User Maintenance Manual • Market Model Xetra	• T7 Extended Trading Interface - Manual • Trader and Admin and Clearer GUI - Manual • T7 Market and Reference Data Interfaces – Manual • T7 Enhanced Order Book Interfaces – Manual • T7 Extended Market Data Services – Trade Prices, Settlement Prices and Open Interest Data Manual • T7 Extended Market Data Services – Underlying Ticker Data Manual • T7 Market and Reference Data Interfaces • T7 FIX Customer Manual
Reports	
• Common Report Engine (CRE), User Guide	

Table 1: Further Reading

All the documents are available on the websites of Deutsche Börse Group:
Derivatives Markets: www.eurexchange.com > Technology > Eurex Exchange's T7 > System Documentation
Cash Markets: www.xetra.com >Technology > T7 Trading Architecture > System Documentation

1.3 Definitions and Abbreviations

The following are the definitions and abbreviations used in the Functional and Interface Overview:

Abbreviation	Definition
CCP	Central Counterpart
EEX	European Energy Exchange
EMDI	Enhanced Market Data Interface
EOBI	Enhanced Order Book Interface
ETC	Exchange Traded Commodity
ETF	Exchange Traded Fund
ETI	Enhanced Trading Interface
ETN	Exchange Traded Note
FIX	Financial Information eXchange (Protocol)
Off-book	Off-book refers to T7 Entry Service
On-book	Refers to on-exchange trading
MDI	Market Data Interface
RDF	Reference Data File
RDI	Reference Data Interface
T7	Cash & Derivatives trading system developed by Deutsche Börse Group
TES	T7 Entry Service
EMDS	Extended Market Data Service
STP	Straight Through Processing

Table 2: Definitions and Abbreviations

2 Trade Concepts

This chapter describes the trade concepts in T7 for simple and complex instruments, including Match Event, Match Step, Execution, Trade, and Trade Item.

2.1 Direct Simple Instrument Match

The following diagram illustrates the concepts describing a direct simple instrument match in T7. A direct match occurs when an incoming order matches against an order on the opposite side of the same order book (it does not match with synthetic orders derived from other order books).

When an incoming order is executed, a Match Event is generated, representing the entire execution. Every price level executed in the match event is called a Match Step, and is assigned a unique Match Step ID.

A Match Step is the total aggregated quantity executed at one price level in a Match Event. For example, Match Step 01 containing a traded volume of 80 at price 17 is generated when incoming Order 4 (Sell 100@16) matches with Orders 2 (Buy 50@17) and 3 (Buy 30@17) in the order book. A second Match Step 02 containing a traded volume of 20 at price 16 is generated when the remaining quantity of Order 4 matches with Order 1 (Buy 20@16). All Match Steps are published in the Public Trade Volume messages.

Each Match Step is broken down into Order Executions, wherein one execution is generated for every order executed at every price level. For example:

- Order Execution 01, Trader A buys 50 @ 17 (Order 2)
- Order Execution 02, Trader B buys 30 @ 17 (Order 3)
- Order Execution 03, Trader D sells 80 @17 (Order 4)
- Order Execution 04, Trader C buys 20 @ 16 (Order 1)
- Order Execution 05, Trader D sells 20 @ 16 (Order 4)

Order Event messages are sent to the trader for every one of their orders involved in a Match Event, including all its executions. One Order Event message is generated per order, for example, one Order Event to Trader D containing both executions of Order 4.

Based on Match Steps, Trades are then generated and assigned unique Trade IDs. T7 distinguishes thereby between two different trade processing methods, which can be set for each instrument separately:

- Price level aggregated trades
  Trades are aggregates of the quantity traded at each price level. For direct simple instrument matches, there is a one-to-one correspondence between Trades and Match Steps (this is not true for complex instrument matches, refer to sections 2.1.1 and 2.1.2)
  Each Trade is broken down into Trade Items with unique Trade Item IDs, wherein one Trade Item is generated for every order executed at every price level. Note that for simple instruments, Trade Item IDs will be equal to the Order Execution IDs. A Trade Confirmation is then provided for every Trade Item to each Participant involved in a trade.

- Trades based on single executions
  Trade confirmations are generated on the basis of bipartite trades. Each trade contains

bilateral trade sides, i.e. the same quantity of the buy and sell side. Contrary to the first rule described above, this procedure can lead to multiple order executions within the same Match Step.

Currently, the first procedure, i.e. the price level aggregated trades procedure is applied to all instruments in the derivatives as well as in the cash markets with except of the partner exchange Vienna. For these instruments traded in the market Vienna, the trades confirmations are generated based on single executions.

Traders (note that public view is aggregated by price, not by order)

Order Book
2 A 50 @ 17
3 B 30 @ 17
1 C 20 @ 16

Order IDs

Conceptual representation only.
Traders belong to Business Units to
Which Order Events are sent

Trader D

Order from D to sell 100 @ 16 (Client order ID=99)

Order Response (order ID=4)

Order Book view

Match Event

Match Step 01
(Match Step ID)
Order Book
Allocation:
B80 @ 17
S80 @ 17

	Buy	Sell
Order Executions	50@17 Order 2, Order Exec ID=01	80@17 Order 4, Order Exec ID=03
	30@17 Order 3, Order Exec ID=02	

Order Event (order 2)   Trader A

Order Event (order 3)   Trader B

Order Event (order 4)   Trader D

Match Step ID=01
Order Execution Ids=03,05
Order ID=4, Client Order ID=99

Match Step 02
Order Book Allocation
B20 @ 16
S20 @ 16

	Buy	Sell
Order Executions	20@16 Order 1, Order Exec ID=04	20@16 Order 4, Order Exec ID=05

Order Event (order 1)   Trader C

One order event
message per order

Public Trade Volume Report

One message per instrument
Match Step IDs 01,02

Public Trade Volume Report

Clearing system   Trade view

NCM Trader A   Trade Info

NCM Trader B   Trade Info

NCM Trader D   Trade Info

Match Step 01

Trade 01
(Trade ID)

B80 @ 17
S80 @ 17

	Bought	Sold
Trade Items	50@17 Order 2, Trade Item ID=01	
	30@17 Order 3, Trade Item ID=02	
		80@17 Order 4, Trade Item ID=03

Trade Confirmation (order 2)   Trader A

Trade Confirmation (order 3)   Trader B

Trade Confirmation (order 4)   Trader D

Match Step ID=01
Trade ID=01
Trade Item ID=03
Order ID=4, Client Order ID=99

NCM Trader C   Trade Info

NCM Trader D   Trade Info

Match Step 02

Trade 01

B20 @ 16
S20 @ 16

	Bought	Sold
Trade Items	20@16 Order 1, Trade Item ID=04	
		20@16 Order 4, Trade Item ID=05

Trade Confirmation (order 1)   Trader C

Trade Confirmation (order 4)   Trader D

Match Step ID=02
Trade ID=02
Trade Item Id=05
Order ID=4, Client Order ID=99

Figure 1: Example for Price Level Aggregated Trades

Traders (note that public view is aggregated by price, not by order)

Order Book
2 A 50 @ 17
3 B 30 @ 17
1 C 20 @ 16

Order IDs

Order from D to sell 100 @ 16 (Client order ID=99)   Order Book view

Trader D

Order Response (order ID=4)

Match Event

Match Step 01
(Match Step ID)
Order Book
Allocation:
B80 @ 17
S80 @ 17

Order Executions	Buy	Sell
	50@17 Order 2, Order Exec ID=01	80@17 Order 4, Order Exec ID=03
	30@17 Order 3, Order Exec ID=02	

Order Event (order 2)   Trader A

Order Event (order 3)   Trader B

Order Event (order 4)   Trader D

Conceptual representation only.
Traders belong to Business Units to
Which Order Events are sent

Public Trade Volume Report

One message per instrument
Match Step IDs 01,02

Public Trade Volume Report

Match Step 02
Order Book Allocation
B20 @ 16
S20 @ 16

Order Executions	Buy	Sell
	20@16 Order 1, Order Exec ID=04	20@16 Order 4, Order Exec ID=05

Match Step ID=01
Order Execution IDs=03, 05
Order ID=4, Client Order ID=99

Order Event (order 1)   Trader C

One order event
message per order

Trade view

Clearing system

NCM Trader A   Trade Info

NCM Trader B   Trade Info

NCM Trader D   Trade Info

NCM Trader D   Trade Info

Match Step 01

Trade 01
(Trade ID)

B80 @ 17
S80 @ 17

Trade Items	Bought	Sold
	50@17 Order 2, Trade Item ID=01	50@17 Order 4, Trade Item ID=03
	30@17 Order 3, Trade Item ID=02	30@17 Order 4, Trade Item ID=04

Trade Confirmation (order 2)   Trader A

Trade Confirmation (order 3)   Trader B

Trade Confirmation (order 4)   Trader D

Trade Confirmation (order 4)   Trader D

Match Step ID=01   Match Step ID=01
Trade ID=01   Trade ID = 2
Trade Item ID = 03   Trade Item ID = 03
Order ID=4, Client Order ID=99   Order ID=4, Client Order ID=99

Match Step 02

Trade 01

B20 @ 16
S20 @ 16

Trade Items	Bought	Sold
	20@16 Order 1, Trade Item ID=06	
		20@16 Order 4, Trade Item ID=05

NCM Trader C   Trade Info

NCM Trader D   Trade Info

Trade Confirmation (order 1)   Trader C

Trade Confirmation (order 4)   Trader D

Match Step ID=02
Trade ID=03
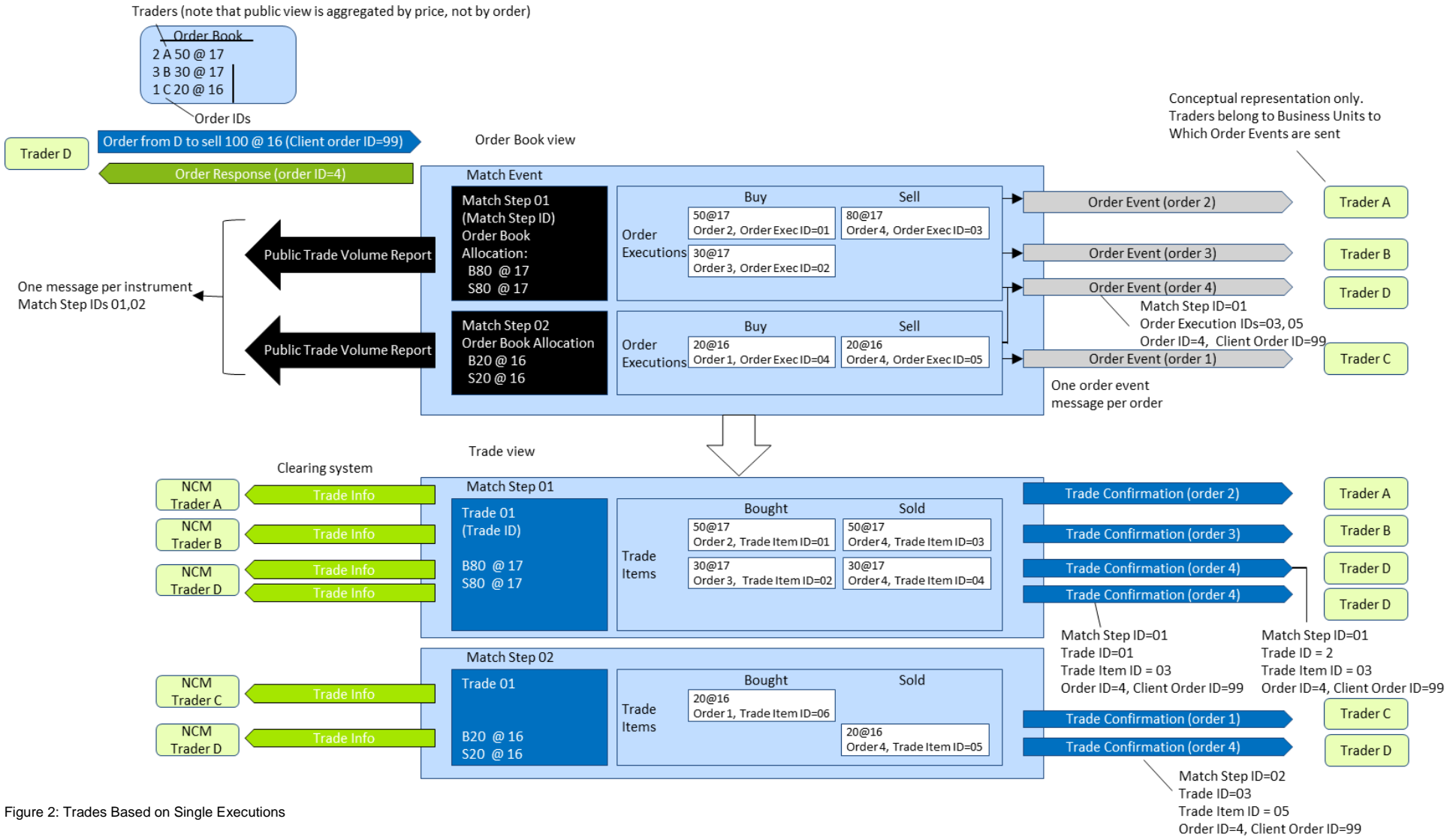Trade Item ID = 05
Order ID=4, Client Order ID=99

Figure 2: Trades Based on Single Executions

2.1.1 Direct Complex Instrument Match

A direct complex instrument match occurs when an incoming complex order matches against an order on the opposite side of the same complex order book.

When the incoming order is executed, a Match Event is generated for the complex instrument, representing the entire execution, and Match Steps are generated for each executed price level.

Each Match Step is broken down into Order Executions, wherein one execution is generated for every order executed at every price level in the complex instrument. In addition to an Order Execution ID, an Order Leg Execution ID is provided for each leg of the complex instrument match.

Order Event messages are sent to the trader for every order involved in the Match Event, including all its executions.

The trades are generated in the corresponding simple instrument legs of the combination only (not for the complex instrument). For an example, refer to the diagram in section 2.1.2. In Match Step 01, the incoming Order 5 executes with Order 1 in the complex instrument AB order book. Trades are then generated in the simple instrument legs A and B (Trade 01 and 02) – no trades are generated for complex instrument AB.

Each Trade is broken down into Trade Items with unique Trade Item IDs, wherein one Trade Item is generated for every order executed at every price level in every simple instrument leg. Trade Confirmations are provided for every Trade Item to every Participant involved in a trade.

2.1.2 Synthetic Match

The following diagram illustrates the concepts of a synthetic match in T7. Match Step 02 is a Synthetic Match, where complex Order 5 entered into complex instrument AB matches with a combination of orders in the simple instrument legs A and B (Orders 2, 3 and 4).

When an incoming complex order is executed, a Match Event is generated, representing the entire execution. The Match Event includes all instruments (simple and complex) that participated in the match.

Every price level executed in the match event is assigned a unique Match Step ID. If the Match Step includes synthetic matches, then all executions in the simple instrument legs belong to the same Match Step ID. All Match Steps are published in Public Trade Volume messages.

Each Match Step is broken down into executions, wherein one execution is generated for every order executed at every price level in each instrument (either in a complex or in a simple instrument). In addition to an Order Execution ID, an Order Leg Execution ID is provided for each leg of a complex instrument match. An Order Event with the executions is generated per order.

Trades are then generated in the simple instruments only (not complex instruments) and are assigned unique Trade IDs. In Match Step 02, the incoming Order 5 entered into complex instrument AB, executes with Orders 2, 3 and 4 in the simple instrument legs A and B. Trades are generated in the simple instrument legs A and B only (Trade IDs 03 and 04) – no trades are generated for complex instrument AB.

Each Trade is broken down into Trade Items with unique Trade Item IDs, wherein one Trade Item is generated for every order executed at every price level in every simple instrument leg. Trade Confirmations are provided for every Trade Item to every Participant involved in a trade.
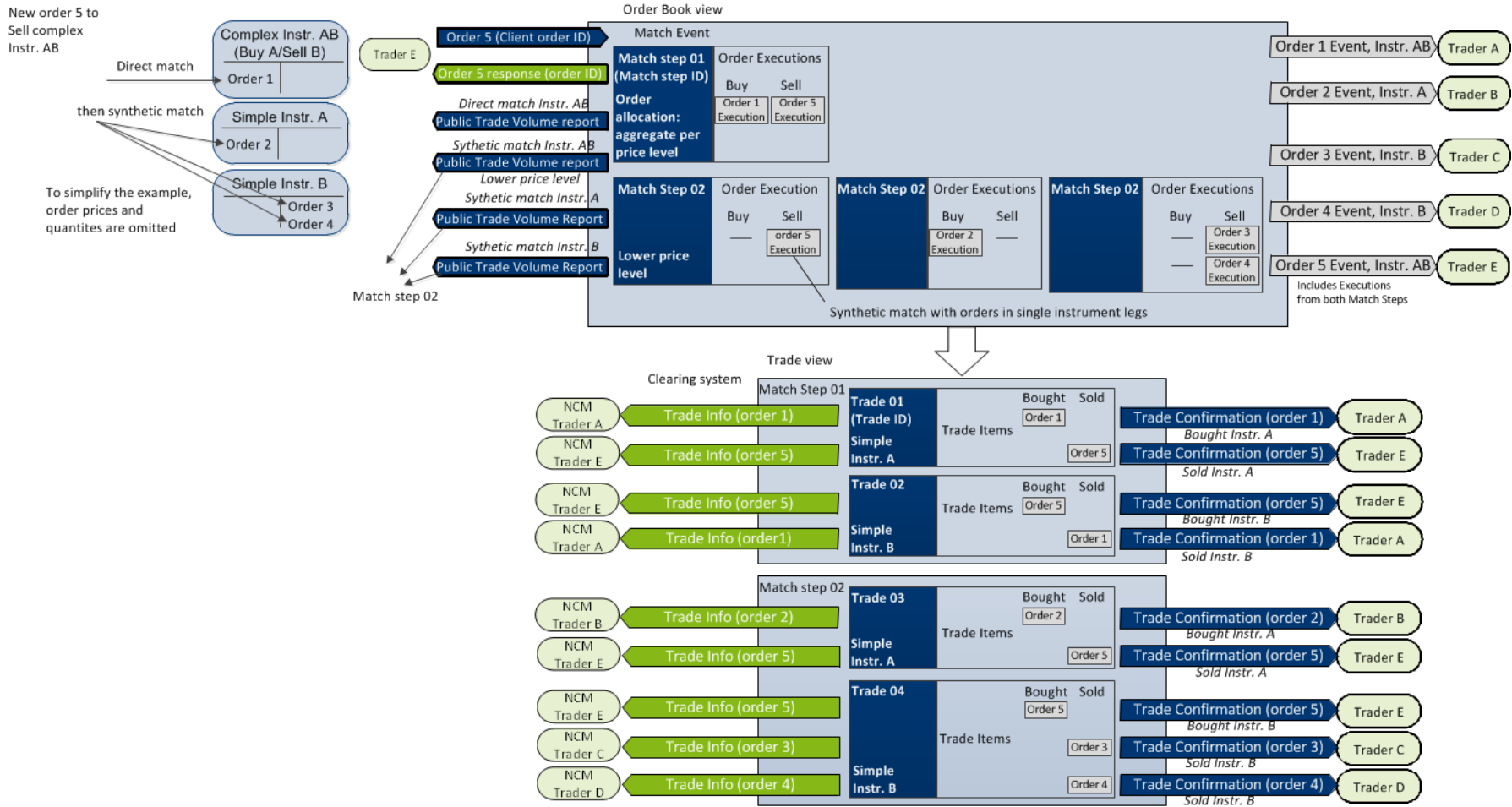
Figure 3: Example Synthetic Match

2.2 Traceability with C7

This chapter describes how to reference order, quote and trade messages using the identifiers supported by T7 and how they can be linked to the trade messages from C7, applicable to all on-book as well as TES trades.

2.2.1 Order Traceability

The following diagram shows the key identifiers available in the system for on-book trading and how Participants can use them to cross reference the various response messages.

The primary identifier for each message type is shown in bold. Each identifier is assigned a unique color, and aligned vertically in the diagram, making it easy to quickly see the traceability across the messages. The interface field name is specified underneath in parentheses.

On every order, Participants provide a Client Order ID (optional for ETI) and up to three free text fields for their own reference purposes. The system will return these fields on its responses where shown in the diagram. The Client Order ID is checked to be unique among live orders for the same instrument and session.

Each new order received is assigned an Order ID by the exchange, which is unique within a product, and is returned to the Participant on all private messages.

For every on-book match event, T7 assigns identifiers, unique within product and business day, to each aggregated price level (Match Step ID), every order execution (Order Execution ID) and every trade (Trade ID). For the matching of a complex order, in addition to the Order Execution ID, an Order Leg Execution ID is provided for each leg of the complex instrument match. The Trade Item ID is the same as the Order Execution ID/ Order Leg Execution ID.

Please note that the Trade ID and Side Item ID is only unique (within product and business day) for either on-book or off-book (TES) trades. Members wishing to reconcile their T7 trade confirmation with their C7 transaction confirmation messages need to take the field TrdType into account.

C7 assigns new (clearing) Transaction IDs and provides Participants with the original identifiers (Trading Trade ID, Trade Item ID and Trading Order ID), so there is backwards traceability. Please note that a trade on T7 is also referred to as a transaction C7.

Technical Notes:

- The Order ID generated by T7 and used on all electronic interfaces is a 64-bit unsigned integer (e.g. 100000). On the GUI and on the trading reports it is shown as a (up-to) 20-digit decimal and 12-character hexatridecimal (base 36) representation (e.g. 255S). In the interfaces of C7 the Order ID is shown as number in the field "OrderID".
- The Client Order ID is provided in the FIXML interface from C7 same as it was entered in the order.
- For an order entered via the FIX GW, the FIX Client Order ID (ClOrdID (11)) will not be returned in the trade confirmation.
- The ETI Client Order ID is provided in the order drop copy messages and in the trade messages delivered via FIX GW back office sessions (field SecondaryOrderID (198)).
- The mapping between Order- and Trade-Messages delivered via FIX GW can be achieved using the field OrderID (37). Alternatively, the flied SecondaryOrderID (198) can be used.

Participant

ORDER (ETI / FIX)

Client Order Id (ETI: ClOrdID)	Client Free Text

Refer to section 2.5.3

Reports: TE540, TE550)

T7

ORDER RESPONSE (ETI / FIX)

Client Order Id (ETI: ClOrdID)	Client Free Text	Order ID (ETI/FIX: OrderID)

Report: TE540

FIX only

Legend

Trade Item ID (ETI/FIX: SideTradeID)

Functional name

Interface name

ORDER EVENT (ETI / FIX)

And Order Leg Execution ID for complex instruments

Client Order Id (ETI: ClOrdID)	Client Free Text	Order ID (ETI/FIX: OrderID)	Order Execution ID (ETI: FillExecID, FIX: SecondaryExecID)	Match Step ID (ETI: FillMatchID, FIX: TrdMatchID)

Report: TE540

FIX and ETI listening sessions only

And ETI/FIX: LegExecID for complex instruments

PUBLIC MARKET DATA(EOBI/EMDI)

	Match Step ID (EOBI: TrdMatchID) (EMDI: MDEntryID)

Report: TE910

Contains QuoteID for traded quotes

TRADE CONFIRMATIONM (ETI/FIX)

Client Order Id (ETI: ClOrdID)	Client Free Text	Order ID (ETI/FIX: OrderID)	Trade Item ID (ETI/FIX: SideTradeID)	Match Step ID (ETI/FIX: TrdMatchID)	Trade ID (ETI/FIX: TradeID)

Refer to Technical Note

C7

TRANSACTION INFORMATION

Client Order Id (FIXML: ClOrdID)	Client Free Text	Trading Order ID (FIXML: OrderID)	Trade Item ID (FIXML: SideTradeID)	Trading Trade ID (FIXML: TrdMatchID)	Clearing Transaction ID (FIXML: TradeReportID)

Reports: CB010, TC810 + others

Reports: CB010, TC810 + others
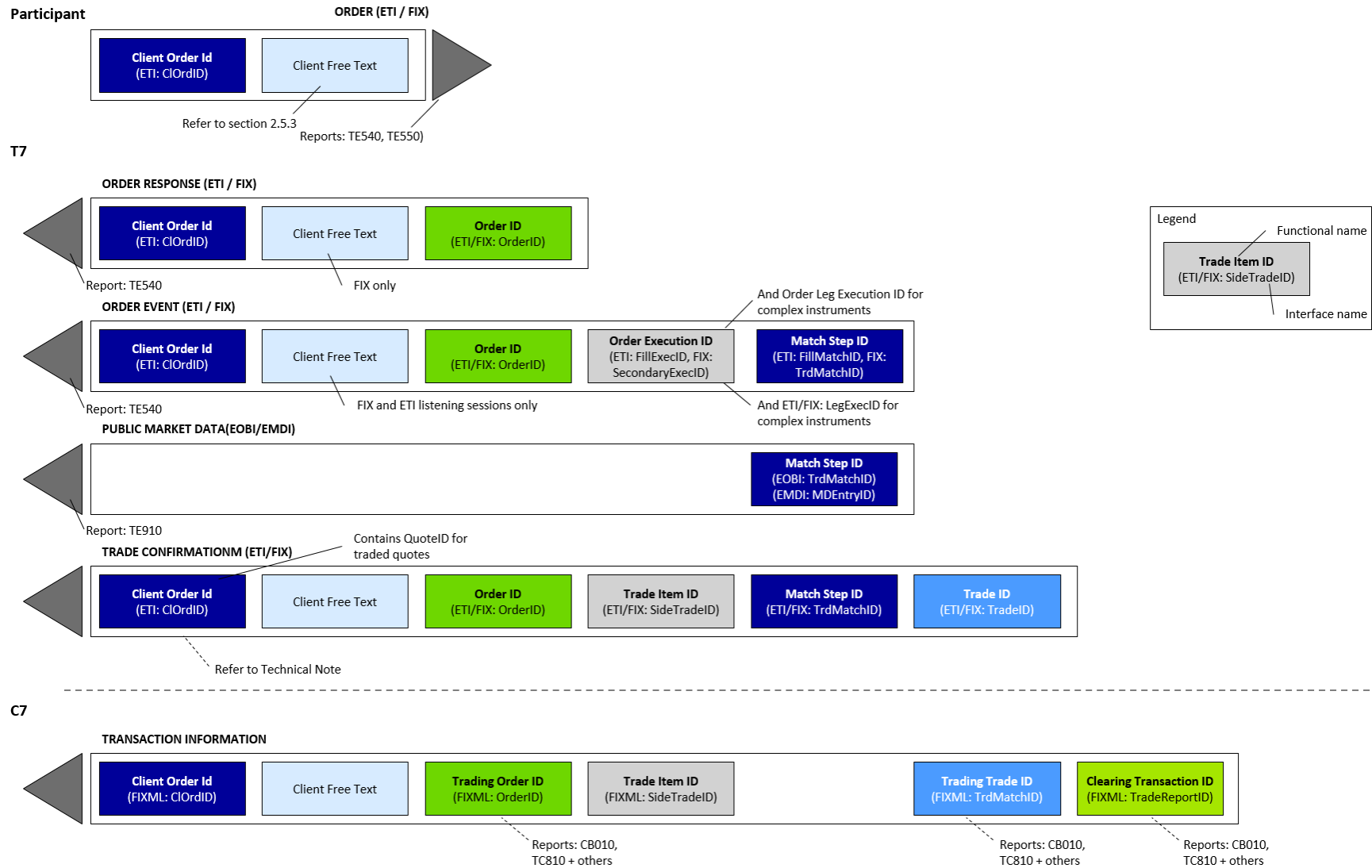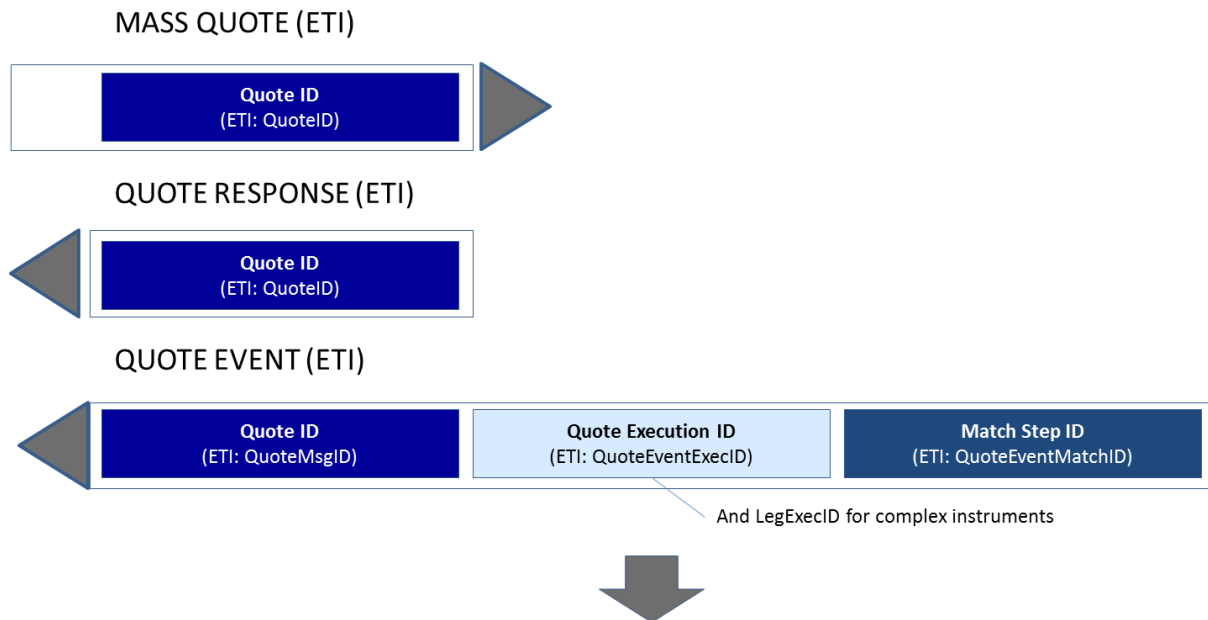
Reports: CB010, TC810 + others

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Figure 4: Order Traceability with C7

2.2.2   Quote Traceability

The following diagram shows the key identifiers available for quotes and how Participants can use them to cross reference the various response messages.

T7 supports quotes via the ETI Interface only. One or more quotes can be entered in a Mass Quote, for which Participants provide a Quote ID for the entire Mass Quote (i.e. not per individual quote). This Quote ID is returned on the Quote Response as well as any Quote Events for executed quotes. Quote IDs are not checked for uniqueness.

For every match event, the system assigns identifiers, unique within product and business day, to each aggregated price level (Match Step ID) and every execution (Quote Execution ID). Quote Leg Execution IDs are also provided for executions occurring in complex instruments.

Subsequent Public Trade Volume, Trade Confirmations, and Trade Information are provided using the same messages as with orders, refer to section 2.2.1.

MASS QUOTE (ETI)

Quote ID
(ETI: QuoteID)

QUOTE RESPONSE (ETI)

Quote ID
(ETI: QuoteID)

QUOTE EVENT (ETI)

Quote ID (ETI: QuoteMsgID)	Quote Execution ID (ETI: QuoteEventExecID)	Match Step ID (ETI: QuoteEventMatchID)

And LegExecID for complex instruments

Refer to section Order Traceability diagram for Public Trade Volume, Trade Confirmation and Trade Information

Figure 5: Quote Traceability with C7

2.2.3   TES Trade Traceability

The following diagram shows the key identifiers available for TES trades and how Participants can use them to cross reference the trade/ transaction confirmations:
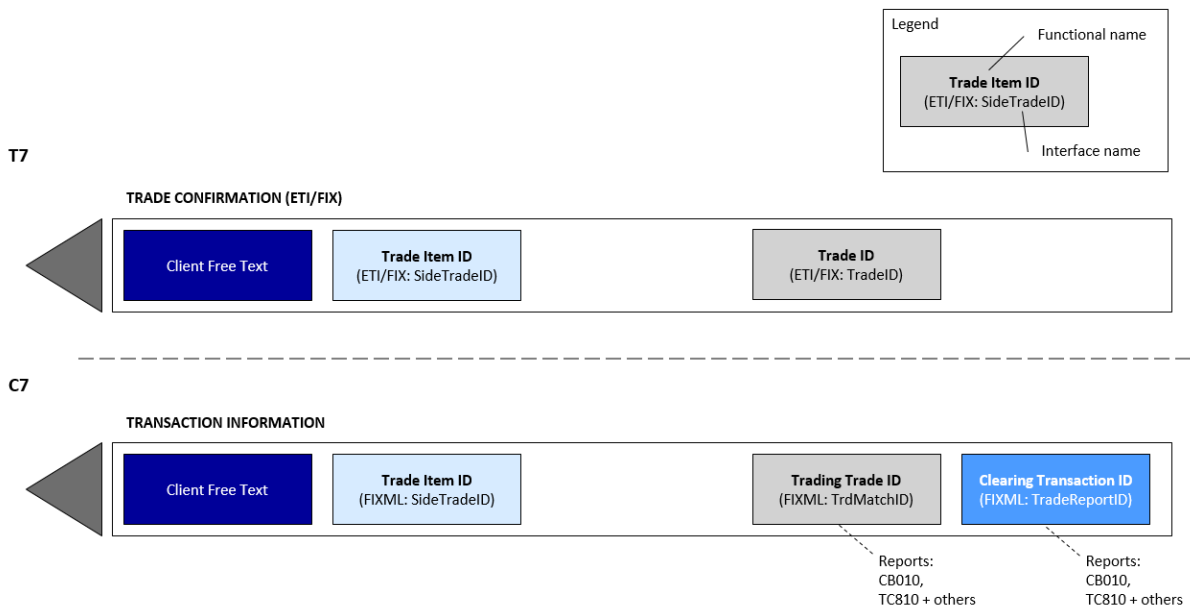
Figure 6: TES Trade Traceability with C7

Please note that the Trade ID and Side Item ID is only unique (within product and business day) for either on-book or TES trades. Members wishing to reconcile their T7 trade confirmation with their C7 transaction confirmation messages need to take the field TrdType into account.

2.2.4   Trade Reversal

When a trade is reversed, T7 sends Participants a Trade Reversal message containing a new Trade ID. For traceability, the original Trade ID is also provided.
C7 will then calculate a new Clearing Transaction ID (based on the original Clearing Transaction ID with an incremented suffix) and provide Participants with trade information including the Order ID as reference back to the T7 trade and trade reversal.
In case one or several transaction adjustment activities have been performed on C7 before a trade (transaction C7's term) becomes subject to a trade reversal, C7 will reverse all adjustments one by one and finally will reverse the original transaction.
For example, a trade A is passed on from T7 to C7, afterwards, several adjustments (O/C adjustment, give-up, take-up) are made: A→B→C→ D.
When the trade reversal happens, C7 will first reverse adjustment D, then C, then B, and finally the transaction A. All adjustments and all reversals will have similar Clearing Transaction IDs which only differ in the suffix (the original transaction A will have the suffix "0"). And each reversal will contain a Reference Clearing Transaction ID which is the Clearing Transaction ID of the adjusted transaction which has been reversed. The final reversal, which reverses the original transaction A, will reference the original Clearing Transaction ID with the suffix "0". For more information on trade reversal in C7, please see FIXML Interface Specification.

The following diagram shows how to trace the trade identifiers in the case of a reversal without adjustments:
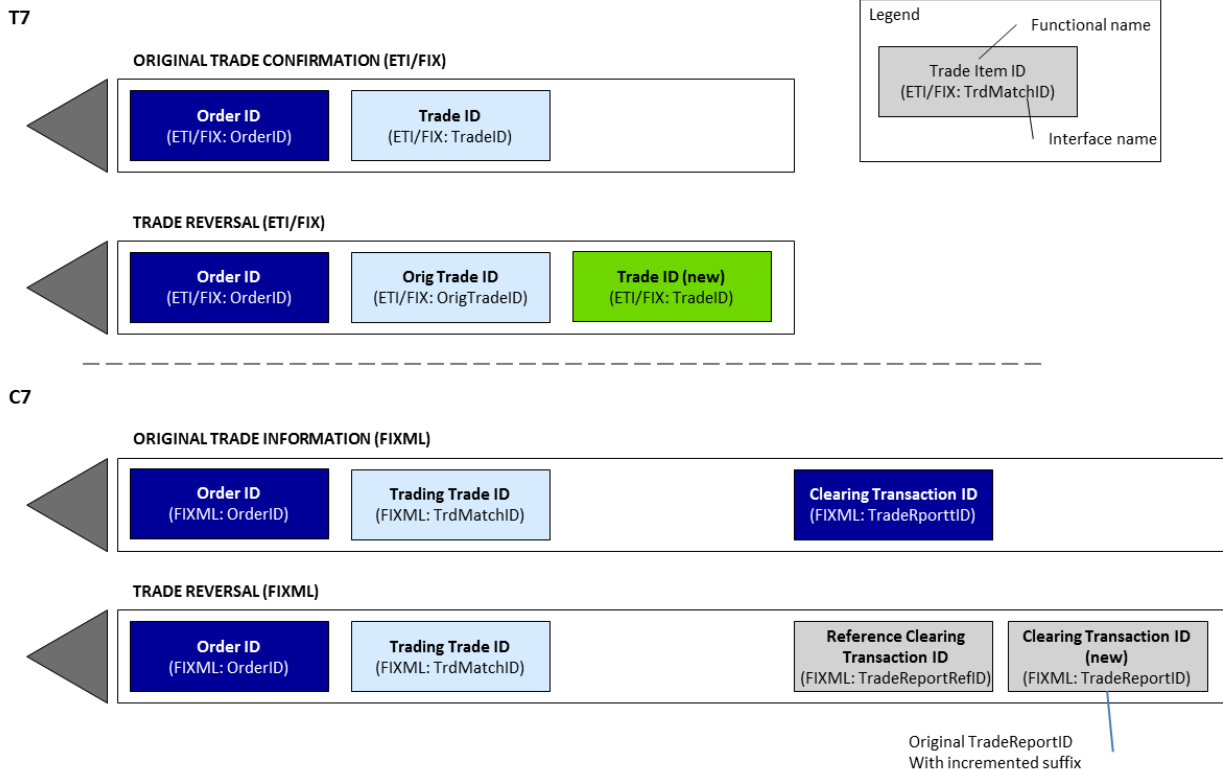

Figure 7: Trade Reversal with C7

2.2.5 Preliminary and Final Trade Confirmations

Currently, there are two types of products on T7 which have a different trading and clearing notations: For Total Return Futures, the trading notation on T7 is specified by the interest rate spread given in basis points. To be sent to the clearing system, the trading spread is converted to clearing notation, i.e. a clearing price given in index points. For more information on Total Return Futures, please refer to the "Functional Reference".

For Variance Futures, trading on T7 is performed in volatility-vega trading notation (σ,υ). However, clearing is performed with futures price-quantity clearing notation (P_t,Q_t). For more information on Variance Futures, please refer to the "Functional Reference".

Each match in a Variance Futures instrument generates a trade in the trading notation which is converted by T7 into the clearing notation.

As the values for the conversion parameters for both products are known only at the end of the trading day, T7 does a preliminary conversion at the time of the trade, based on the previous day's values of the conversion parameters. The preliminary trade information is immediately communicated to the user and the clearing system. For Total Return Futures, it is possible to enter a special type "Trade at Market" via TES which results in a regular trade and do not require the preliminary and final trade confirmations.

At the end of the trading day, when the day's conversion parameter values have been approved, T7 calculates the final values and replaces the preliminary trades with the final trades. For that, a final trade confirmation is sent which contains the Trade ID of the preliminary trade conformation as

reference.

In addition to the preliminary and final trade confirmations (analogously to the confirmations sent by T7), C7 sends out a transaction reversal message for the preliminary trade. The clearing system uses the TradeReportRefID field to link the three confirmation messages. In case of a trade based on orders, the Order ID from T7 is included in all three confirmation messages.

The following diagram shows how to trace the trade identifiers in the case of Total Return Future or Variance Future trades.
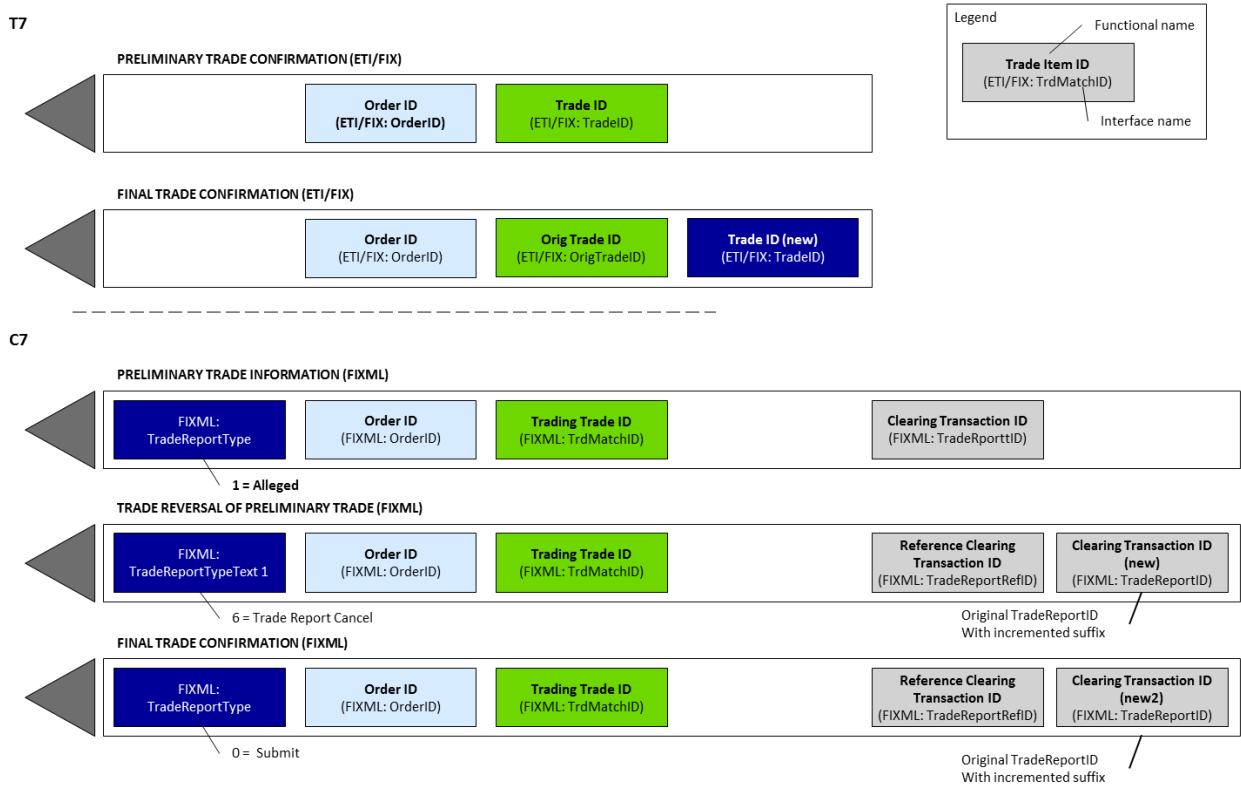
Figure 8: Preliminary and Final Trade Confirmations with C7

2.2.6 Complex Instrument Trades

When a trade occurs in a complex instrument, trade confirmations are generated in the corresponding simple instrument legs only (not for the complex instrument). As a result, multiple trade confirmations are sent for one order at a single price level. When this occurs, T7 provides two additional fields, enabling Participants to easily identify and summarize leg trade confirmations that belong to the same complex instrument match:

- A Strategy Link ID to trace all legs of the complex instrument that are matched in one match step (price level).
- The Number of Leg Executions to convey how many trade confirmations were generated for an order in the complex instrument match step.

These fields are also provided with the clearing information published by C7.
Additionally, C7 forwards on the information on strategy type and sub type from T7 via the fields RelatedInstrumentGrp (contains information about the strategy type, where applicable), RelatedProductComplex (contains the general strategy type), and RelatedSecuritySubType (contains further detail on the strategy, e.g. the color for packs and bundles).

The following diagram is an example of trade confirmations sent to a Participant resulting from two complex instrument matches, one with 2 legs, and one with 3 legs.
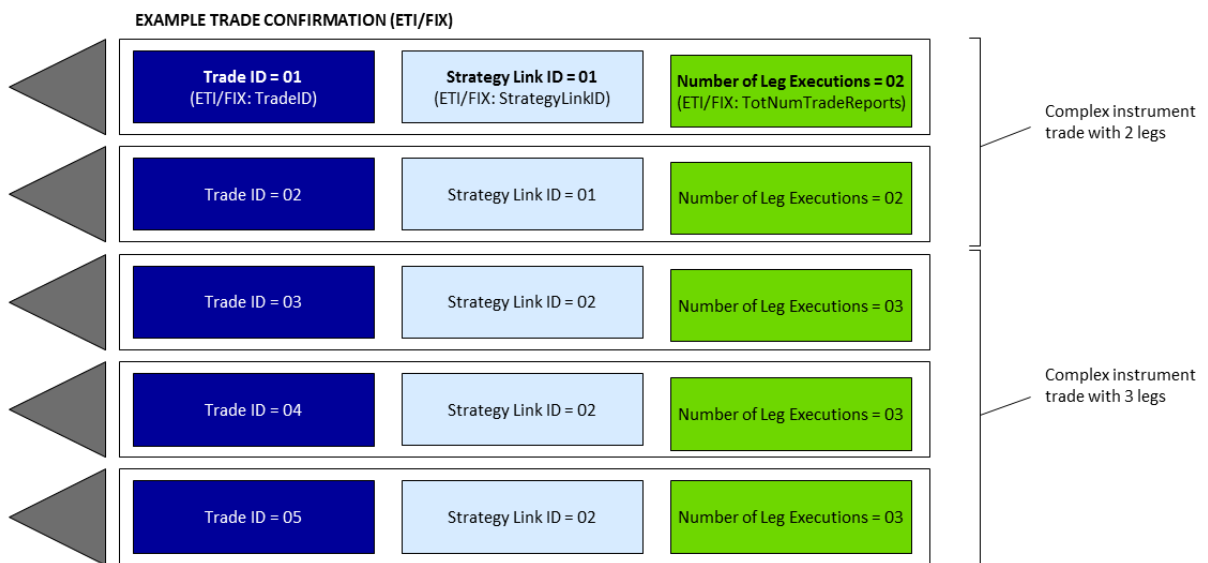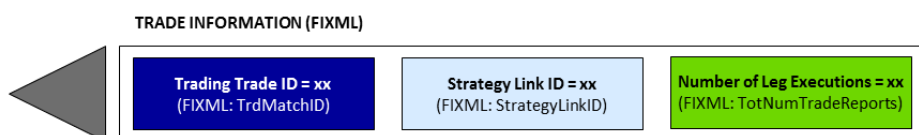

Figure 9: Complex Instrument Trades

2.2.7   Clearing Fields used by C7

T7 provides full trading functionality for Participants. Several clearing related fields are available for internal Participant use, and for use by C7. This appendix describes these fields and their handling.

2.2.7.1   Orders

Clearing fields can be specified on new orders and modifications to existing orders. The following clearing fields are supported and passed through to C7:

- Open/ Close Indicator.
- Clearing Account.
- Take-Up Member (receiving Clearing Member for Give-Up).
- Free Text 1.
- Free Text 2.
- Free Text 3.
- Cooperation details for Eurex KRX Products:
  - External Member ID
  - Final Beneficiary
- Customer Order Handling Instruction (identifies the source of an order, in accordance with the FIA guidelines for the rate Identifier for eGains).

For complex instruments, the Open/ Close Indicator and Clearing Account can be specified individually per leg.

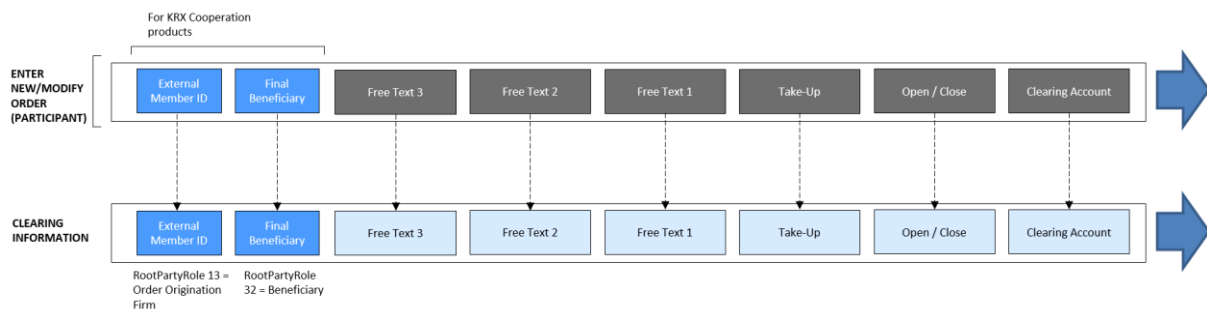The diagram below shows the available clearing fields and their handling:

Figure 10: Clearing Fields used by C7

Handling within T7

The system does not perform business validations on clearing fields, except for KRX Products.

For Eurex KRX Products, the Participant must provide the cooperation details as follows:

- The External Member ID must be allowed for the entering Participant; and
- The Final Beneficiary field must be specified.

Clearing information from C7

C7 will validate and update the clearing fields if required, and then provide clearing information to

Participants, as follows:

Clearing Field	Handling
Clearing Account	If the Clearing Account is not valid, it will be replaced using rules based on: • Take Up Member (if specified); • Type of Member; and • Trading Capacity (required with the order).
Take-Up Member	Validated to be a valid Take-Up Member and removes/ignores if not valid.
Free Text 1	This free text is returned for Participant use.
Free Text 2	This free text is returned for Participant use.
Free Text 3	This free text is returned for Participant use.
External Member ID	This field is used for KRX cooperation products.
Beneficiary ID	This field is used for KRX cooperation products.
Customer Order Handling Instruction	This field is used to for the rate identifier for eGains.

Table 3: Clearing Information from C7

2.2.7.2   Quotes and Orders Entered Using the Short Layout

To optimize quoting efficiency, clearing fields are not available on quote entry or on orders entered using the short layout. Instead, Participants configure Trade Enrichment Rules that generate default clearing fields every time a quote or order entered using the short layout is executed. These defaulted values are provided in the trade confirmation, and then passed to C7. The following clearing fields can be set up:

- Clearing Account.
- Free Text 1.
- Free Text 2.
- Free Text 3.
- Open/ Close Indicator.
- Take-Up Member.
- Cooperation Partner (KRX):
  - External Member ID.
  - Final Beneficiary.

The diagram below shows how an executed quote/ order entered using the short layout is enriched using the Trade Enrichment Rules:
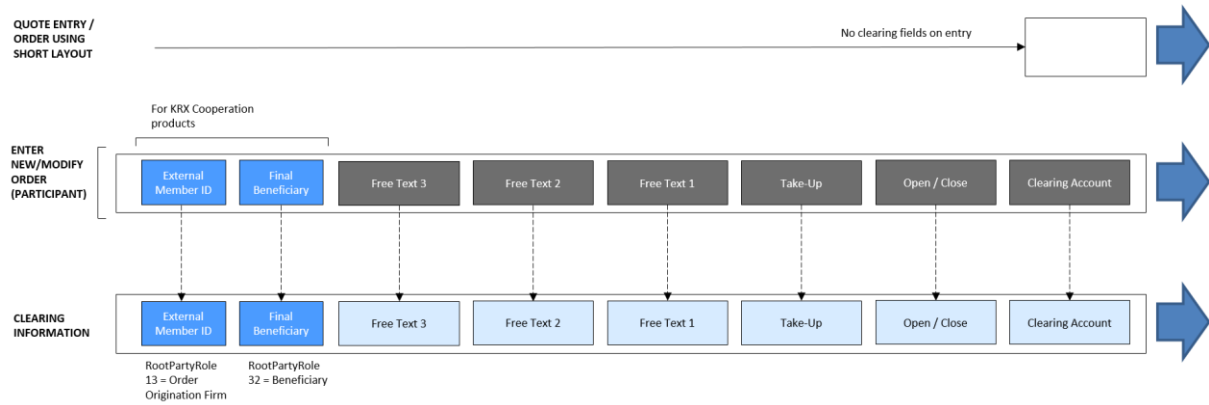

Figure 11: Trade Enrichment with C7

Handling within T7

Using the GUI, Participants are able to define trade enrichment rules as a simple index table and can specify on transaction entry the exact trade enrichment rule to be used at the time of execution. Each enrichment rule will be identified by a Participant-defined integer identifier.

When the quote or order entered using the short layout is executed, T7 will use the Trade Enrichment Rule ID supplied by the Participant to look up the rule and then apply the corresponding clearing fields to the trade information sent to the clearing system and returned to the Participant.

KRX trade enrichment

Participants may define trade enrichment rules for external member ID and final beneficiary account that will be applied to executed quotes and orders entered using the short layout.

To use this feature, Participants must supply the exchange with a default external member ID and final beneficiary account to be used if a valid trade enrichment rule for the product is not supplied.

2.2.7.3 Client Free Text

On orders, Participants can provide up to three free text fields for their own reference purposes. On quotes and orders entered using the short order layout, the free text fields are added to executed quotes using the Participant configured trade enrichment rules.

The following table shows the mapping of the free text fields across the interfaces to T7 and C7:

Interface	Field Names			Field Length
Trader GUI	Free Text 1	Free Text 2	Free Text 3	Entry of up to 12 characters.
FIX GW	Text	FreeText2	FreeText3	Trade notification always 12 characters.
ETI	FreeText1	FreeText2	FreeText2	Always 12 characters.
FIXML	FreeText1	FreeText2	FreeText3	Text fields can hold 36 characters each. Exclamation mark (!) and pipe (|) are not allowed.
T7 XML-Report TE540	freeText1	freeText2	freeText3	Truncated trailing spaces. I.e. less than 12 characters possible. Field not present if not entered or just spaces.
C7 XML-Report (e.g. CB012)	Text1	Text2	Text3	Up to 36 characters. Field not present if not entered or just spaces.

Table 4: Client Free Text Mapping

The last column shows how the field lengths are handled technically.

2.2.7.4 Clearing Account Rules

If a valid Clearing Account is provided/ defaulted it will be used. If the Clearing Account is missing or determined not valid, then it will be set by the clearing system according to the following logic:

(1) If the Clearing Account is "G1" or "G2", then the Clearing Account will be set as described in (3).
   If the Take Up Member field is filled correctly and
   a.   all validations for the Give Up are fulfilled, Give Up will be triggered automatically.
   b.   in case validations for the Give Up are not fulfilled, no Give Up will be triggered automatically.
(2) If the trade is from a quote, then the Clearing Account is set to "M1" (if "M1" is not allowed for the Participant, then it is set to "P1").
(3) If the Clearing Account is not valid, then it is derived based on Trading Capacity:
   a.   Agency -> "A1" (if "A1" is not allowed for the Participant, then it is set to "P1")
   b.   Proprietary -> "P1" (if "P1" is not allowed for the Participant, then the trade will be flagged as erroneous)
   c.   Market Making ->" M1" (if "M1" is not allowed for the Participant, then it is set to "P1").

Please note that the trade confirmation from T7 will reference the Clearing Account that has been provided/ defaulted by the Participant. The trade information from C7 will specify the final, potentially

updated, Clearing Account in accordance with the Clearing Account Rules.

2.2.8 Eurex EnLight Traceability for Strait Through Processing (STP)

The following diagram shows the key identifiers available in the system for Eurex EnLight (for STP) and how Participants can use them to cross reference the various response messages.

The primary identifier for each message type is shown in bold. Each identifier is assigned a unique color, and aligned vertically in the diagram, making it easy to quickly see the traceability across the messages. The interface field name is specified underneath in parentheses.

All the messages within a negotiation event will have the same Negotiation ID, an identifier assigned by T7 that is unique for the negotiation event for the current business day.

Respondents provide quote for a specific negotiation event and each Eurex EnLight quote sent by the respondent is assigned an Quote ID by the exchange, which is unique for the negotiation event. Respondents can provide up to three free text fields for their own reference purposes on the Eurex EnLight quote. The system will return these fields on the broadcasts where shown in the diagram.

The Requester who has initiated negotiation event sends a Eurex EnLight Hit Quote request to match a quote. The Requester can provide up to three free text fields for his own reference purposes on the Eurex EnLight Hit Quote request.

Eurex EnLight Hit Quote results into a Eurex EnLight Deal and for every Eurex EnLight Deal, T7 assigns Trade ID, an identifier which is unique within the negotiation event and business day. The resulting Eurex EnLight Create Deal Notification contains the unique identifiers for the negotiation event, the quote which was matched along with the Trade ID. The Eurex EnLight Create Deal Notification also contains personal three free text fields provided by the requester and respondent in the Eurex EnLight Enter Quote and Eurex EnLight Hit Quote requests.

The Eurex EnLight Deal results into a legally binding TES Trade of type Eurex EnLight triggered trade (TrdType 1006). The Negotiation ID and Trade ID of the Eurex EnLight Deal are also present on the resulting TES Trade Broadcast as Negotiation ID and SRQS Trade ID. Exchange assign the TES trade a Trade ID and each side a Side Item ID. The Trade ID and Side Item ID are unique within product and business day for the off-book (TES) trades.
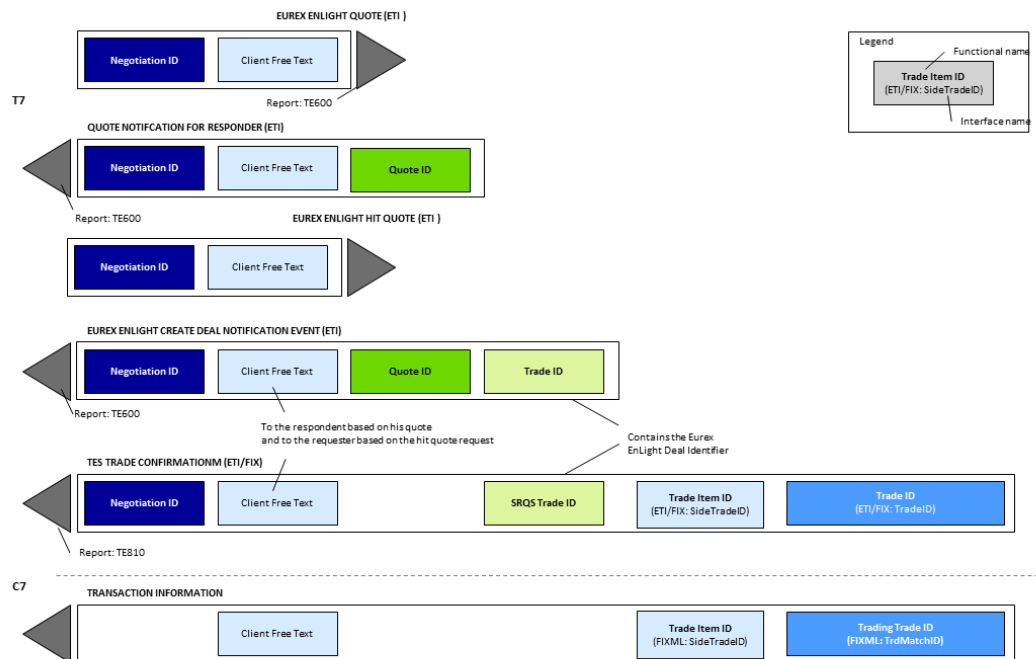
Figure 12: Eurex EnLight Traceability with C7

2.3 Traceability with CCP

This chapter describes how to reference order, quote and trade messages using identifiers supported by T7 and how they can be linked to the trade messages from the counterpart CCP, applicable to all on-book trades. Please note that trades in non-CCP instruments are traceable via CCP contract notes.

2.3.1 Order Traceability

Each order entered in T7 is assigned by a unique Order ID and a System Order ID Version Number. While the Order ID is the same during the lifetime, the System Order ID Version Number increases in case of a user driven order modification with a priority change.
When an order is executed, the trader is informed via an order execution confirmation. For each price level (match step), the execution confirmation includes a unique ID called Match Step ID. This field can be used as a linkage between the public market data and the trade notification.
For a linkage between the execution confirmation and the trade notification, the execution confirmation provides also the Order Execution ID which maps with the field Trade Item ID in the trade notification.

To trace the order within clearing and settlement, the trade notification is enriched by the field Side Trade Report ID. This field is equal to the Trading Number used in the Trade Report of CCP for clearing and settlement.

Please note that within the trade confirmation sent to the clearing and settlement, the Order ID is converted since the field length in the clearing and settlement systems is limited to 13 alphanumerical. The conversion is done by using the Horner scheme to recalculate the Order ID, which is expressed as decimal number (i.e. basis of 10), to the basis of 36. This information is useful if the mapping from

CCP back to T7 is requested, then the conversion must be conducted back. For more details, please refer to the Enhanced Trading Interface Manual.

The following diagram shows the key identifiers available in the system for on-book trading and how Participants can use them to cross reference the various response messages:
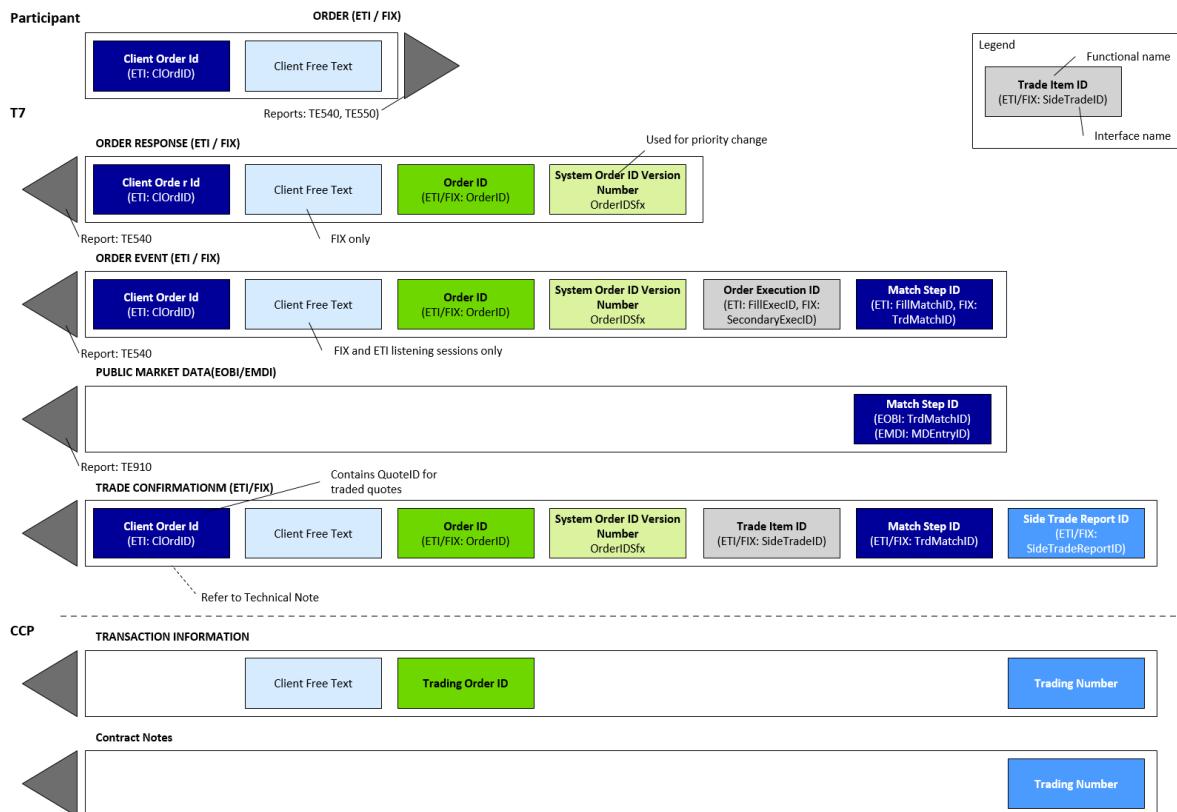

Figure 13: Tracing of orders and trades   *Same content information reflected by the same colour and position of the respective boxes

2.3.2   Quote Traceability

When a quote gets executed, the trader is informed via the quote execution notification. Like orders, the execution notification for quotes is sent for each price level (match step) and include the fields Match Step ID and the Quote Execution ID. While the Match Step ID is used for public trade reporting, the Quote Execution ID is the private identifier for the quote match and can be reconciled with the field Trade Item ID in the trade notification. For a mapping regarding to CCP, the trade notification is enriched by the additional field Side Trade Report ID (see also order traceability) which in turn is the Trade Number in CCP Trade Report. Please note, like order traceability with CCP, that the Order ID is converted to a field length of 13 due to limitations in the clearing system (refer to section 2.3.1). For more details, please refer to the "Enhanced Trading Interface" Manual.

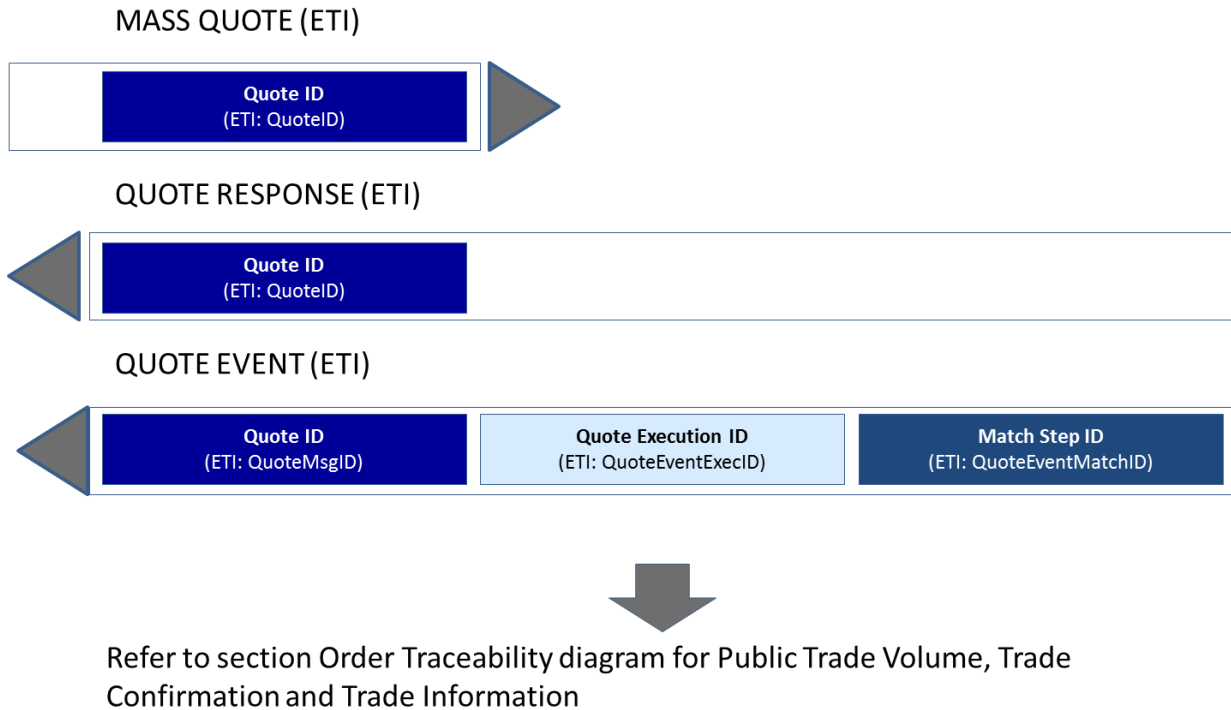The following figure represents a quote match event:

Figure 14: Quote Traceability with CCP

2.3.3 Trade Reversal

A trade reversal can only be executed during the day the trade was created. When a trade is reversed, T7 sends a trade reversal message to the affected participants. The trade reversal message is in the format of a Trade Notification containing a (new) Trade ID for the reversal itself, the Original Trade ID of the reversed trade and a Trade Report Type indicating the reversal. Please note, since no trade modifications are possible on T7, the Original Trade ID contains always the ID of the initial trade. The CCP is informed about the reversal and deletes the original trade accordingly. The following diagram shows how to trace the trade identifiers in the case of a reversal:
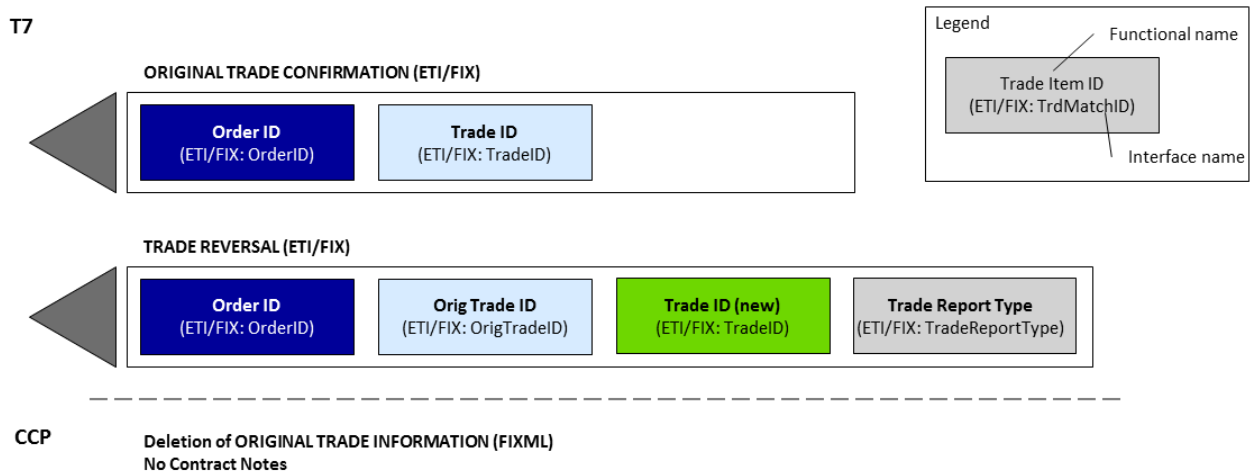

Figure 15: Trade Reversal with CCP

2.3.4 TES Trade Traceability

The following diagram shows the key identifiers available for TES trades and how Participants can use them to cross reference the trade/ transaction confirmations:

Figure 16: : TES Trade Traceability with CCP

The SideTradeReportID/SideTradeID is unique within product and business day.

2.3.5 Xetra EnLight Traceability

The following diagram shows the key identifiers available in the system for Xetra EnLight and how Participants can use them to cross reference the various response messages.

The primary identifier for each message type is shown in bold. Each identifier is assigned a unique color, and aligned vertically in the diagram, making it easy to quickly see the traceability across the messages. The interface field name is specified underneath in parentheses.

All the messages within a negotiation event will have the same Negotiation ID, an identifier assigned by T7 that is unique for the negotiation event for the current business day.

Respondents provide quote for a specific negotiation event and each Xetra EnLight quote sent by the respondent is assigned an Quote ID by the exchange, which is unique for the negotiation event. Respondents can provide up to three free text fields for their own reference purposes on the Xetra EnLight quote. The system will return these fields on the broadcasts where shown in the diagram.

The Requester who has initiated negotiation event sends a Xetra EnLight Hit Quote request to match a quote. The Requester can provide up to three free text fields for his own reference purposes on the Xetra EnLight Hit Quote request.

Xetra EnLight Hit Quote results into a Xetra EnLight Deal and for every Xetra EnLight Deal, T7 assigns Trade ID, an identifier which is unique within the negotiation event and business day. The resulting Xetra EnLight Create Deal Notification contains the unique identifiers for the negotiation

event, the quote which was matched along with the Trade ID. The Xetra EnLight Create Deal Notification also contains personal three free text fields provided by the requester and respondent in the Xetra EnLight Enter Quote and Xetra EnLight Hit Quote requests.

The Xetra EnLight Deal results into a legally binding TES Trade of type Xetra EnLight triggered trade (TrdType 1006). The Negotiation ID and Trade ID of the Xetra EnLight Deal are also present on the resulting TES Trade Broadcast as Negotiation ID and SRQS Trade ID. Exchange assign the TES trade a Trade ID and each side a Side Item ID. The Trade ID and Side Item ID are unique within product and business day for the off-book (TES) trades. Members wishing to reconcile their T7 trade confirmation with their CCP transaction confirmation messages also need to take the field TrdType into account.
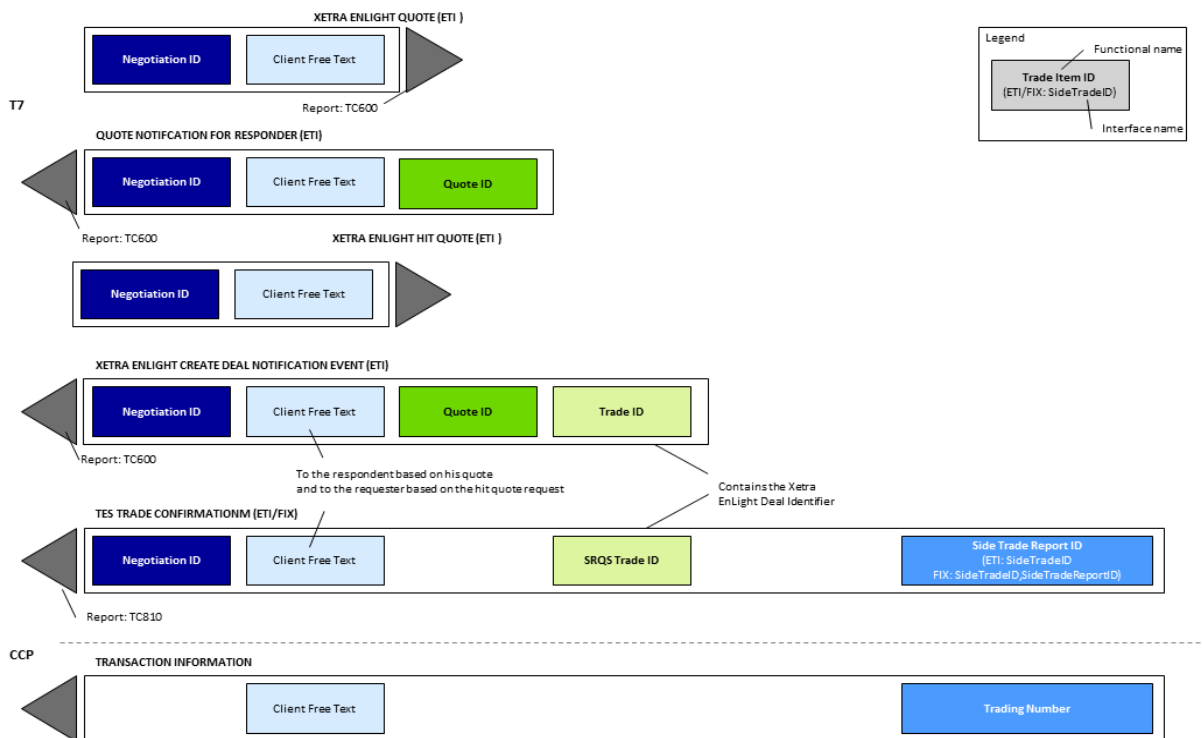

Figure 17 Xetra EnLight Traceability with CCP

3 Change log

No	Chapter, page	Date	Change
8.0 – 1.0	• 2.3.8	09-AUG-2019	• Eurex EnLight Traceability for STP
8.0 – 1.1	• 2.4	26-AUG-2019	• Non-CCP instruments, removal of Eurex Classic