Document title

# TOTAL RETURN FUTURES (TRF) CONTRACT

Document type or subject

Technical Note

| Version number | Date |
|---|---|
| 1.0 | 26 Sep 2019 |

| Number of pages | Author |
|---|---|
| 13 | Euronext |

# PREFACE

## PURPOSE

The purpose of this document is to provide useful additional information to developers about trading facilities for the Total Return Futures (TRF) Contract on Optiq Derivatives.

## TARGET AUDIENCE

This document should be read by developers building order entry and market data applications for the Euronext Derivatives Markets on the Optiq platform.

## WHAT'S NEW?

The following lists only the most recent modification made to this revision/version. For the Document History table, see the Appendix.

| VERSION NO. | DATE | AUTHOR | CHANGE DESCRIPTION |
|---|---|---|---|
| 1.0 | 26 Sep 2019 | Euronext | First Version |

## ASSOCIATED DOCUMENTS

The following lists the associated documents, which either should be read in conjunction with this document or which provide other relevant information for the user:

- Euronext Derivatives Markets – Optiq Kinematics Specifications V 1.1.0
- Euronext Markets – Optiq OEG Client Specifications – SBE Interface V 2.1.0
- Euronext Markets – Optiq OEG Client Specifications – FIX 5.0 Interface V 2.1.0
- Euronext Markets – Optiq MDG Client Specifications V 3.1.0
- Euronext Derivatives – How the Market Works V3.0

# CONTENTS

# 1. OVERVIEW OF THE TOTAL RETURN FUTURES (TRF) CONTRACT

A Total Return Future (TRF) is a listed Euronext **Contract** which replicates economics of a total return swap within the infrastructure of a centralized Exchange.

■ Transactions on TRF are executed either in basis or index points depending on the method of trading, with final price calculated at the end of the day.

■ Daily settlement is provided in basis point for each maturity (note that due to calculation, values used may be positive, negative or zero).

TRF uses indexes for its pricing and calculations. Currently TRF offered by Euronext is based on returns of CAC 40, and funding rate based on the Euro Short-Term Rate (€STR).

Optiq provides two different ways to trade the TRF Contract:

1. Trade At Index Close, also referred as TAIC, and
2. Trade At Market, also referred as TAM.

|  | Trading At Index Close | Trading At Market |
|---|---|---|
| **Trading facility** | Via Central Order Book & Wholesale Facilities | Via Wholesale Facilities only |
| **Order entry** | TRF Spread in basis points (bps) e.g. 50 bps | Futures price in index points e.g. 5,739 points |
| **Trade price** | Final Futures price is known at the end of the day (after the index closing level is known) | Final Futures price is known at the time of trading |

The following chapters provide additional information about these two trading methods. Information provided should be read in conjunction with the OEG and MDG client specifications.

■ **TRF Conversion File Parameters**

Two (2) daily TRF Conversion Parameters files are provided to market participants to support trading on the TRF Contract:
- A '*Start of Day*' file: available before opening with limited data,
- A '*End of Day*' file: available after closing with extended data.

The TRF Conversion Parameters files provide:
- The Contract characteristics, e.g. Maturity name, Number of days to Expiry, Daily Settlement Price, etc.
- Indices values of the previous and current days for all three indices involved in the calculations

Both files are available on EFS.

For further details on the TRF Contract such as price calculation, please refer to the How The Market works document.

## 2. TRF 'TRADE AT MARKET' (TAM)

*'Trade At Market'* (TAM) can be done using the Optiq Wholesale Facility, i.e. using the **New Wholesale Order** (SBE: 64, FIX: U64) message.

*'Trade At Market'* on a TRF Contract must always be submitted as:

- A LIS trade, i.e. *'WholesaleTradeType (21083)'* = '0'
- On a single Outright contract, i.e. *'Wholesale Legs Rep Occurrences / NoLegs (555)'* = '1'
- As a cross, i.e. *'Wholesale Side (21082)'* = '3'

Please note that no *'Trade At Market'* will be allowed on the last trading day of the expiry of the contract.

The structure of the New Wholesale Order message is close to the one used to submit a cross LIS Trade on an Outright Contract. Only **one** extra field is required to identify a *'Trade At Market'* on TRF: the ***'Message Price Notation (21803)'***. For a *'Trade At Market'* on a TRF contract: *'Message Price Notation (21803)'* must always be set to **'1'** (Price).

*The 'Message Price Notation (21803)' field therefore replaces the legacy 'Orde Origin' field used in the UTP New Order Cross message (for a Trade At Market, value 'M' must be used).*

The following table provides the most important information to submit a **Trade At Market** on a TRF Contract using the Wholesale Facility. For readability purpose, not all the fields of the message are included but only the ones related to such an order.

| New Wholesale Order (SBE: 64 – FIX: U64) | |
|---|---|
| **Field** | **Description & Rules** |
| Contract Symbol Index / SecurityID (48) | Mandatory - Must be filled with the TRF Contract Symbol Index |
| Wholesale Trade Type (21083) | Mandatory - WholesaleTradeType= '0' (Large In Scale) |
| LIS Transaction ID (21085) | Must be Null |
| Strategy Code / SecurityType (167) & SecuritySubType (762) | Must be empty (\0) |
| Price (44) | Mandatory - Must be multiple of the tick size **expressed in Index points** |
| Quantity (53) | Mandatory |
| Wholesale Side (21082) | Mandatory – *WholesaleSide* = '3' (Cross) |

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| Message Price Notation (21803) | Mandatory – Must be equal to '1' for TAM |
|---|---|
| **WHOLESALE LEG INFORMATION** | |
| Wholesale Legs Rep length | Must be equal to 43 – *please note that this field is not present in FIX protocol but only in SBE* |
| Wholesale Legs Rep Occurrences | Must be equal to 1 – *please note that this field is not present in FIX protocol but only in SBE* |
| NoLegs (555) | Must be equal to 1 – *please note that this field is not present in SBE protocol but only in FIX* |
| Leg Symbol Index (600) | Mandatory in FIX – Must be the Symbol Index of the TRF Contract |
| Leg Security ID (602) | Mandatory – Must be an existing Outright Symbol Index of the TRF Contract |
| Leg Price (566) | Mandatory – Must be equal to 'Price' |
| Leg Strike Price (612) | Not required |
| Bid Quantity / BidSize (134) | Mandatory – Must be equal to 'Quantity' |
| Offer Quantity / OfferSize (135) | Mandatory – Must be equal to 'Quantity' |
| Leg Side (624) | Not required |
| Leg Ratio (21091) | Not required |
| Leg Put Or Call (1358) | Not required |
| Leg Security Type | Mandatory – Must be equal to '0' (Future) <br><br> In FIX identified with *LegSecurityID* (602) and *LegSecurityIDSource* (603) |
| Leg Last Trading Date (21092) | Not required |
| **CLEARING INFORMATION** | |
| Wholesale Clearing Rep length | Must be equal to 80 - *please note that this field is not present in FIX protocol but only in SBE* |
| Wholesale Clearing Rep Occurrences | Must be equal to 2 - *please note that this field is not present in FIX protocol but only in SBE* |
| NoSides (552) | Must be equal to 2 - *please note that this field is not present in SBE protocol but only in FIX* |

| Occurrence 1 | Clearing Data of the Buy or Sell side. Please note that *Symbol Index* must be equal to the *Leg Symbol Index* |
|---|---|
| Occurrence 2 | Clearing Data of the Buy or Sell side. Please note that *Symbol Index* must be equal to the *Leg Symbol Index* |

Once the order has been successfully validated, Optiq sends back a private **WholesaleOrderAck** (65) (FIX U65) message to confirm the successful receipt and technical processing of the order ('*Response Type* set to 0 = Accept), and provides the system generated *LISTransactionID*.

The TAM will immediately match and Optiq generates a private **Fill** (04) or FIX Execution Report (8) message for each leg of the trade.

A dedicated *'Evaluated Price (21802)'* field in the Fill (FIX Execution Report), used only for TRF and MOC, must be used to determine the type of price provided, i.e. the *Temporary Price* or the *Final Price*. To identify the type of trade message sent, clients must rely on the *'Trade Type (21010)'* field provided in the message.

For a 'Trade At Market' transaction:
- The *'Trade Type (21010)'* = '2' (LIS Trade)
- The '*Evaluated Price (21802)*' field contains the Final Price of the execution and is provided in Euro
- The '*Message Price Notation (21803)*' field is set to '1' (Price in Index points)
- The '*LegLastTradedPrice (FIX: LeglastPx (637))*' field is provided in Index point
- The '*LastTradedPrice (FIX: LastPx (31))*' field is provided in Index point

A **FullTradeInformation (1004)** message will be sent via MDG to notify market participants of the transaction (Note that for TAM, Trade Type = '2'). The message will be followed by a **Statistics (1011)** message to update the Cumulative Quantity.

*This kinematics is therefore equivalent to the one currently in place on UTP Derivatives.*

# 3. TRF 'TRADE AT INDEX CLOSE' (TAIC)

*'Trade At Index Close'* (TAIC) can be done via:

- The Wholesale Facility
- The Central Order Book

Please note that no *'Trade At Index Close'* will be allowed on the last trading day of the expiry of the contract, neither via the Wholesale Facility nor via the Central Order Book.

## 3.1 TRF TAIC VIA WHOLESALE FACILITY

*'Trade At Index Close'* on a TRF outright contract can be done using the Optiq Wholesale Facility, i.e. using the **New Wholesale Order** (SBE: 64, FIX: U64) message.

Such transactions must always be submitted as:

- A LIS trade, i.e. '*WholesaleTradeType (21083)*' = '0'
- On a single Outright contract, i.e. '*Wholesale Legs Rep Occurrences / NoLegs (555)*' = '1'
- As a one-side message, i.e. '*Wholesale Side (21082)*' = '1' (Buy) or '2' (Sell)

The structure of the New Wholesale Order message is therefore similar to the one used to submit a one-side LIS Trade on an Outright Contract. Only **one** extra field is required to identify a *'Trade At Index Close'* on TRF: the **'Message Price Notation (21803)'**. For a *Trade At Index Close'* on a TRF outright contract: *'Message Price Notation (21803)'* must always be set to **'2'** (Spread in Basis Point).

*The 'Message Price Notation (21803)' field therefore replaces the legacy 'OrderOrigin' field used in the UTP New Order Cross message (for a Trade At Index Close, value 'C' must be used).*

The following table provides the most important information to submit a **Trade At Index Close** on a TRF outright contract using the Wholesale Facility. For readability purpose, not all the fields of the message are included but only the ones related to such an order.

| New Wholesale Order (SBE: 64 – FIX: U64) | |
| --- | --- |
| **Field** | **Description & Rules** |
| Contract Symbol Index / SecurityID (48) | Mandatory - Must be filled with the TRF Contract Symbol Index |
| Wholesale Trade Type (21083) | Mandatory - WholesaleTradeType= '0' (Large In Scale) |

| | |
|---|---|
| LIS Transaction ID (21085) | Must be Null |
| Strategy Code / SecurityType (167) & SecuritySubType (762) | Must be empty (\0) |
| Price (44) | Mandatory - Must be multiple of the tick size **expressed as a spread in basis points** |
| Quantity (53) | Mandatory |
| Wholesale Side (21082) | Mandatory – *WholesaleSide* = '1' (Buy) or '2' (Sell) |
| **Message Price Notation (21803)** | **Mandatory – Must be equal to '2' for TAIC** |
| **WHOLESALE LEG INFORMATION** | |
| Wholesale Legs Rep length | Must be equal to 43 – *please note that this field is not present in FIX protocol but only in SBE* |
| Wholesale Legs Rep Occurrences | Must be equal to 1 – *please note that this field is not present in FIX protocol but only in SBE* |
| NoLegs (555) | Must be equal to 1 – *please note that this field is not present in SBE protocol but only in FIX* |
| Leg Symbol Index (600) | Mandatory in FIX – Must be Symbol Index of the TRF Contract |
| Leg Security ID (602) | Mandatory – Must be an existing Outright Symbol Index of the TRF Contract |
| Leg Price (566) | Mandatory – Must be equal to 'Price' |
| Leg Strike Price (612) | Not required |
| Bid Quantity / BidSize (134) | Mandatory – Must be equal to 'Quantity' |
| Offer Quantity / OfferSize (135) | Mandatory – Must be equal to 'Quantity' |
| Leg Side (624) | Not required |
| Leg Ratio (21091) | Not required |
| Leg Put Or Call (1358) | Not required |
| Leg Security Type | Mandatory – Must be equal to '0' (Future) <br><br> In FIX identified with *LegSecurityID* (602) and *LegSecurityIDSource* (603) |

| Leg Last Trading Date (21092) | Not required |
|---|---|
| **CLEARING INFORMATION** | |
| Wholesale Clearing Rep length | Must be equal to 80 – *please note that this field is not present in FIX protocol but only in SBE* |
| Wholesale Clearing Rep Occurrences | Must be equal to 1 – *please note that this field is not present in FIX protocol but only in SBE* |
| NoSides (552) | Must be equal to 1 – *please note that this field is not present in SBE protocol but only in FIX* |
| Occurrence 1 | Clearing Data of the Buy or Sell side. Please note that *Symbol Index* must be equal to the *Leg Symbol Index* |

Once the order has been successfully validated, Optiq sends back a private **WholesaleOrderAck** (65) (FIX U65) message to confirm the successful receipt and technical processing of the order ('*Response Type* set to 0 = Accept), and provides the system generated *LISTransactionID*.

When the other counterpart (i.e. the *Reactor*) will submit its opposite one-side Wholesale Trade matching with the Initiator TAIC order (and specifying the appropriate *LISTransactionID*) , the TAIC will immediately match and Optiq will generate a private **Fill** (04) or FIX Execution Report (8) message.

Note that the Trade will  be rejected if the *Reactor* does not fill the exact 'Message Price Notation' (Spread in Basis Point).

The *'Evaluated Price (21802)'* field in the Fill (FIX Execution Report), must be used to determine the type of price provided, i.e. the *Temporary Price* or the *Final Price*. To identify the type of trade message sent, clients must rely on the *'Trade Type (21010)'* field provided in the message.

For a Trade At Index Close, two (2) Fill (Fix Execution Report) messages will be sent.

1. Following execution of the TAIC
- *'Trade Type (21010)'* = '101' (Large in Scale (LiS) Trade - Provisional price)
- The '*Evaluated Price (21802)*' field contains the Temporary Price of the trade and is provided in Euro
- The '*Message Price Notation (21803)*' field is set to '2' (Spread in basis points)
- The '*LegLastTradedPrice (FIX: LeglastPx (637))*' field is provided in basis point
- The '*LastTradedPrice (FIX: LastPx (31))*' field is provided in basis point

A **FullTradeInformation (1004)** message will be sent via MDG to notify market participants of the transaction (Note that for this first execution message, Trade Type = '101'). The message will be followed by a **Statistics (1011)** message to update the Cumulative Quantity.

2. At the end of the day, when the Index Closing level is known
- *'Trade Type (21010)'* = '2' (LIS Trade)
- The '*Evaluated Price (21802)*' field contains the Final Price of the trade and is provided in Euro

- The '*Message Price Notation (21803)*' field is set to '2' (Spread in basis points)
- The '*LegLastTradedPrice (FIX: LeglastPx (637))*' field is provided in basis point
- The '*LastTradedPrice (FIX: LastPx (31))*' field is provided in basis point

A **FullTradeInformation (1004)** message will be sent via MDG to notify market participants of the transaction (Note that Trade Type = '2'). The message will be followed by a **Statistics (1011)** message to update the Cumulative Quantity.

*This kinematics is therefore equivalent to the one currently in place on UTP Derivatives.*

## 3.2    TRF TAIC VIA CENTRAL ORDER BOOK

TRF can be also be traded as a *'Trade At Index Close'* order in the Central Order, i.e. using the **New Order** (SBE: 01) / **NewOrderSingle** (D) message.

Price should always be expressed as a spread in basis point.

Once the order has been successfully validated, Optiq sends back a private **Ack** (03) (FIX Execution Report) message to confirm the successful receipt and technical processing of the order ('*Response Type* set to 0 = Accept).

Market participants are being notified of the new order via **Market Update (1001)** messages on MDG.

When an incoming order will result in a match, Optiq will generate a private **Fill** (04) / FIX Execution Report (8) message.

The *'Evaluated Price (21802)'* field in the Fill (FIX Execution Report), must be used to determine the type of price provided, i.e. the *Temporary Price* or the *Final Price*. To identify the type of trade message sent, clients must rely on the *'Trade Type (21010)'* field provided in the message.

For a *'Trade At Index Close'* order matched in the Central Order Book, two (2) Fill (Fix Execution Report) messages will be sent.

1. Following execution of the TAIC order:
- *'Trade Type (21010)'* = '100' (Conventional Trade - Provisional price)
- The '*Evaluated Price (21802)*' field contains the Temporary Price of the trade and is provided in Euro
- The '*Message Price Notation (21803)*' field is set to '2' (Spread in basis points)
- The '*LegLastTradedPrice (FIX: LeglastPx (637))*' field is provided in basis point
- The '*LastTradedPrice (FIX: LastPx (31))*' field is provided in basis point

A **FullTradeInformation (1004)** message will be sent via MDG to notify market participants of the transaction (Note that for this first execution message, Trade Type = '100'). The message will be followed by a **Statistics (1011)** message to update the Cumulative Quantity.

2. <u>At the end of the day, when the Index Closing level is known:</u>
- *'Trade Type (21010)'* = '1' (Conventional Trade)
- The '*Evaluated Price (21802)*' field contains the Final Price of the trade
- The '*Message Price Notation (21803)*' field is set to '2' (Spread in basis points)
- The '*LegLastTradedPrice (FIX: LeglastPx (637))*' field is provided in basis point
- The '*LastTradedPrice (FIX: LastPx (31))*' field is provided in basis point

A **FullTradeInformation (1004)** message will be sent via MDG to notify market participants of the transaction (Note that Trade Type = '2'). The message will be followed by a **Statistics (1011)** message to update the Cumulative Quantity.

*This kinematics is therefore equivalent to the one currently in place on UTP Derivatives.*

## APPENDIX A: DOCUMENT HISTORY

### REVIEW LOG

| | |
|---|---|
| **DOCUMENT NAME** | Total Return Futures (TRF) Contract |
| **PROJECT NAME** | |
| **LOCATION** | |
| **REVISION VERSION** | 1.0 |

## APPENDIX A: DOCUMENT HISTORY