EUREX Architects of trusted markets

Equity & Basket Total Return Futures (ETRF & BTRF)

Equity Financing with Total Return Futures

July 2026

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1 Overview of Equity & Basket Total Return Futures

Equity & Basket Total Return Futures - Overview

Objectives and Key Drivers

- Provide a **futurised solution** for **equity financing** with Equity Total Return Futures (ETRF)
- Facilitate the **trade of packages** of ETRF as Basket Trades of Equity Total Return Futures (BTRF)
- Mitigate **counterparty risk** and **bilateral margining** for non-cleared OTC equity & basket TRS
- **Balance sheet benefits** for under a transparent and secure CCP environment
- **Cross margining** with Eurex's equity derivatives, including the EURO STOXX 50® (SX5E) TRF

Definitions

- **Equity TRF (ETRF)** is a total return future aiming to replicate the payoff of an equity swap based on underlying shares issued by a company included in an eligible index
- **Basket TRF (BTRF)** is a package trade of one or multiple ETRFs constructed by traders within certain parameters in relation to these eligible underlying shares – allowing substitutions

TRF Product Structure

Product structure of ETRF builds on the functionality of EURO STOXX 50® TRF launched in 2016:

- Quotation based on annualised **+/- TRF Spread** in basis points
- **Accruals approach** used for the determination of the equivalent futures price in EUR

Trade Types and Handling

- **ETRF trades** (standalone ETRF)
  - Order book trading only for ETRFs not in a basket
  - Trade at Close (TAC) only (underlying share price determined based on the close of that day)
  - No regular Eurex Trade Entry Services (TES) for ETRFs such as Block Trades
- **BTRF trades** (ETRF traded as part of a basket)
  - Only available with Eurex Trade Entry Services via the T7 trading system
  - TAC and Trade at Market (TAM) where underlying share price is determined by participants
  - Upload functionality and individual identification of baskets.
  - Subsequent substitution of constituent ETRFs facilitated

Product Scope

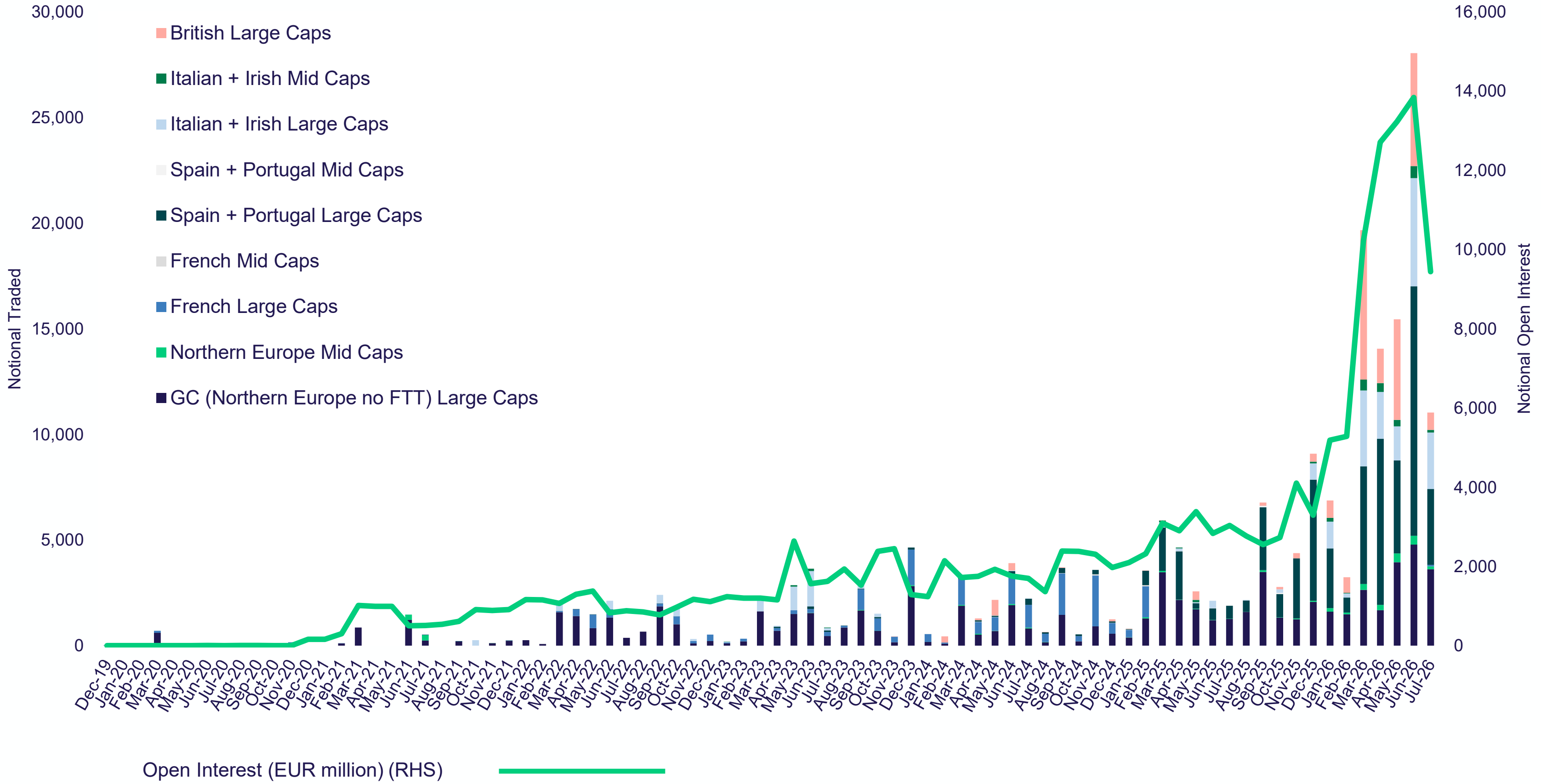
- Currently, ETRFs based on **270+ EUR denominated stocks**:
  - Liquid constituents of the broad-based EURO STOXX (SXXE) which includes key components of blue-chip indices (such as EURO STOXX 50®, DAX®, CAC-40® etc).
  - The product list of the ETRFs and descriptions and links can be found here.
  - More information on ETRF/BTRF offering is available here.
- As of 6 November 2023, **73 new UK ETRFs** were listed based on FTSE 100
- As of 31 March 2025, **30 new Swiss ETRFs** were listed based on SLI (Swiss Leaders Index)

Traded Notional and Open Interest Development

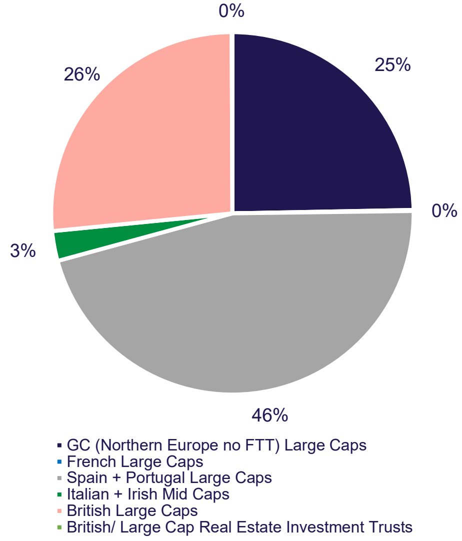
More than EUR 208 billion notional traded since launch in 2019:

- Quarterly record in Q2 2026 with nearly **EUR 58 billion notional traded**
- Monthly record in July 2026 with **EUR 11 billion notional traded**
- Record Open Interest end of July 2026 of **EUR 9.4 billion notional** across 59 products

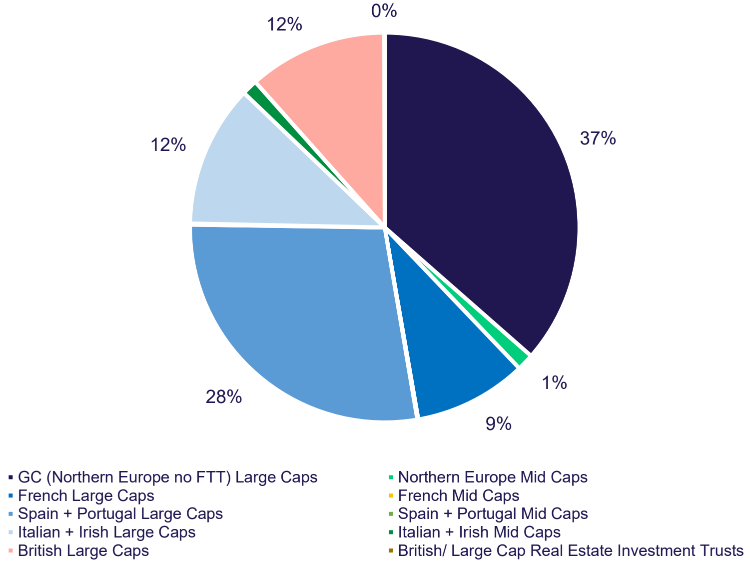
TRF Buckets Notional Volume and Open Interest (in M EUR) since launch



Notional Traded Buckets Distribution (YTM July 2026)



Notional Traded Buckets Distribution (since Launch 2019)



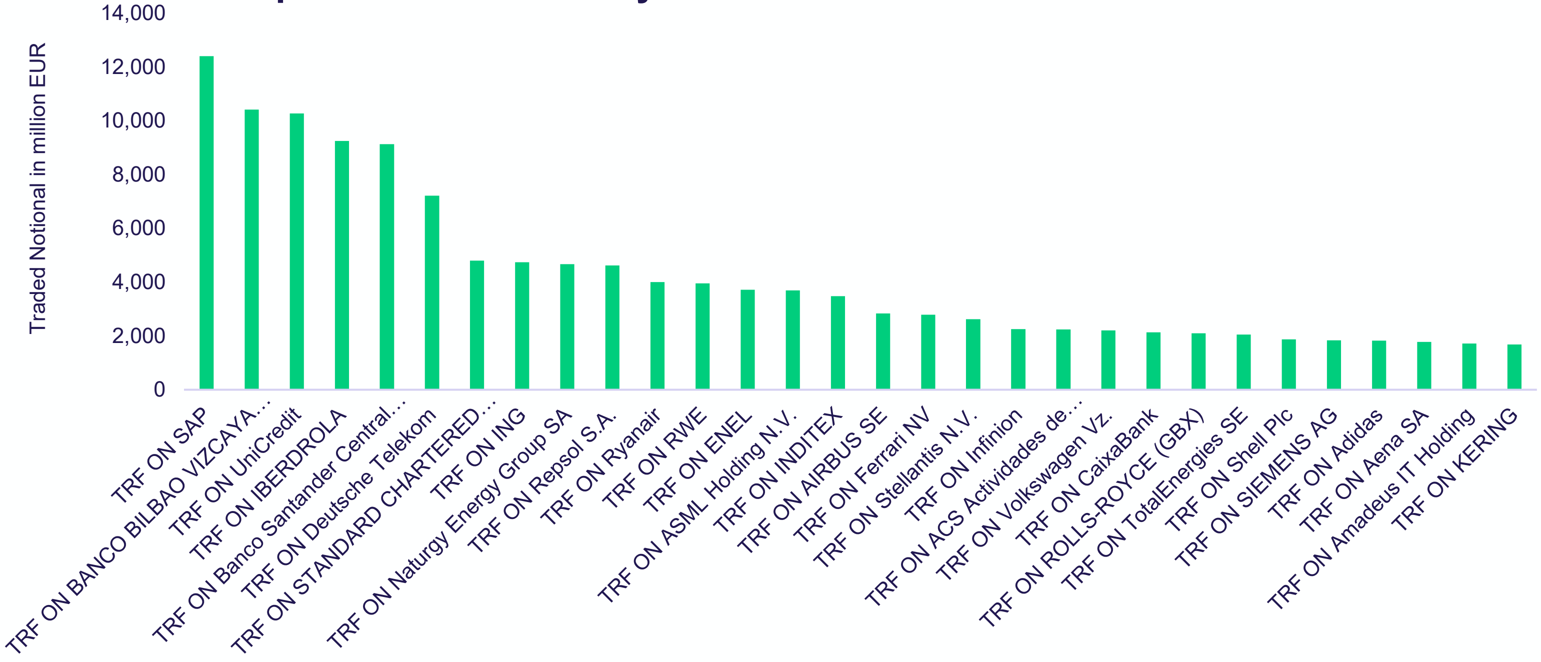
Top ETRFs by Traded Notional and Open Interest

254 ETRF products traded since launch and 156 ETRFs traded in 2025

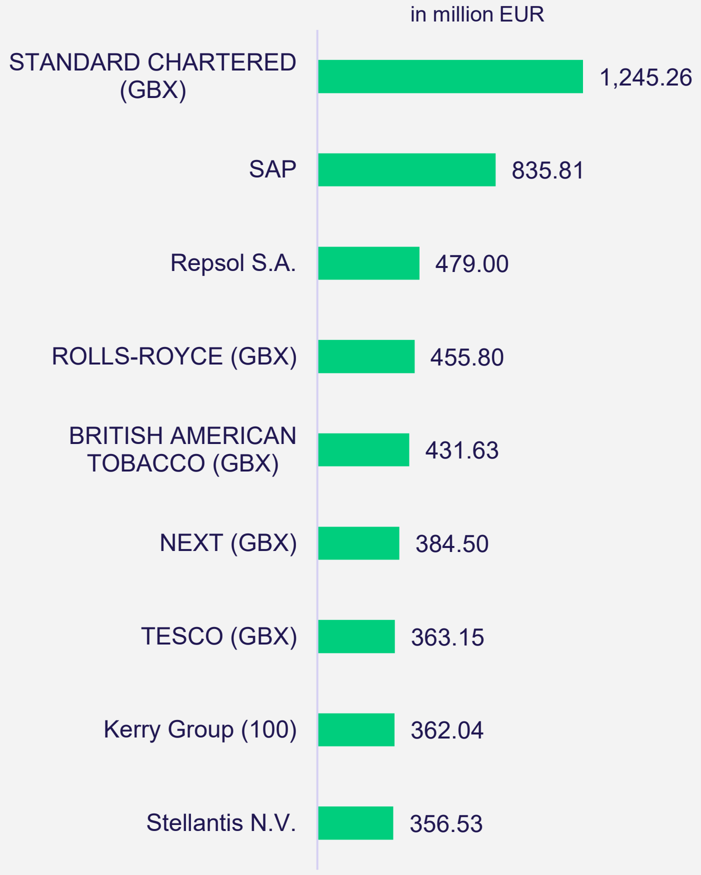
Top 30 traded ETRFs represent approx. **61%** total notional volume since launch, out of which:

- TRF on SAP: 5.94% (12.4 billion EUR)
- TRF on Banco Bilbao Vizcaya Argent: 4.99% (10.4 billion EUR)
- TRF ON UniCredit: 4.92% (10.3 billion EUR)

Top 30 traded ETRFs by Traded Notional since launch in 2019

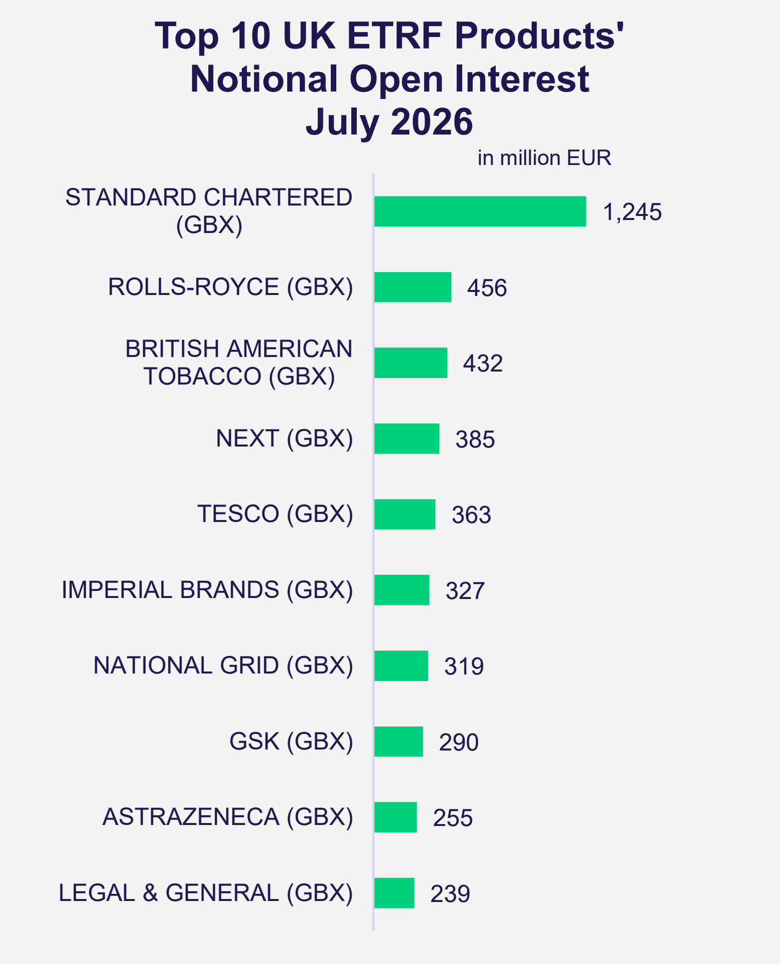


Top 10 ETRFs by Notional OI by end of July 2026



UK ETRFs Traded Notional & Open Interest

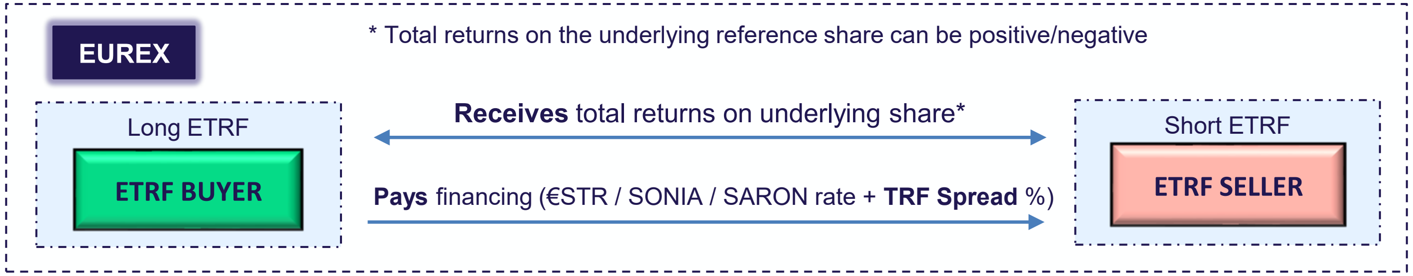
Total Notional Traded for all UK ETRFs reached more than 24.1 billion EUR since launch in November 2023.



2 Equity Total Return Futures

Equity Total Return Futures (ETRF) - Building blocks for baskets

An **Equity Total Return Futures (ETRF)** is a listed future with returns analogous to an equity TRS – the buyer (long) **receives** the total returns on the underlying share and **pays** a financing amount on the notional based on an agreed rate:



Trading of Equity Total Return Future replicates OTC conventions:

- Quotation based on annualised +/- **Spread** in **basis points** (i.e. not in price terms) representing the basis points added to the benchmark overnight funding rate (€STR for EUR denominated underlying) to determine the financing cost

Product Structure of Equity Total Return Futures is as a fully fungible futures:

- The traded **TRF Spread** in basis points (**trading notation**) is converted by the Eurex system into a futures price for the ETRF that is expressed in price terms per share (**clearing notation**)
- **Dividends** and **overnight funding** will accrue into this futures price daily to deliver total returns (**accruals approach**)
- The **dividends** and **funding** incorporated into futures pricing daily will therefore be paid daily via the **variation margin**
- Traded futures price is determined on any trading day (t) as follows:

ETRF Futures Price (t) = Underlying Equity Price (t) + Traded Basis (t) + Accrued Dividends (t) – Accrued Funding (t)

Where:
- **Traded Basis (t)** = Underlying Equity Price (t) * [Traded TRF Spread (t)] * (Days to Maturity (t) / 360)
- **Underlying Equity Price** = Equity Price at Close or a custom defined Equity Price dependent on trade type

ETRF Contract Specifications – EUR ETRFs

Specification	Details
Underlyings	▪ Equity shares included in an eligible index (Phase 1: EURO STOXX - SXXE) ▪ Funding Rate: Euro short-term Rate (€STR) ▪ Equity Dividend Index (EDI) for each underlying equity (provided by STOXX): iSTOXX Equity Dividend Indices ○ **Net dividends** based on the withholding tax rates used by STOXX (https://www.stoxx.com/withholding-taxes), based on STOXX country classification
Currency	EUR
Day Count Convention	ACT/360 (fixed number of days per year - i.e. Annualisation Factor of 360)
Contract Size	**100 equity shares**
Minimum TRF Spread Change *(Tick Size)*	+/- **0.5 basis points**
Trade Types	**Trade at Close** (TAC) – underlying equity price is determined at end of day close price (on reference market) **Trade at Market** (TAM) – underlying equity price is determined and entered by the trading participants ("strike" price)
Expiration & Last Trading Day	The 3rd Friday of each contract month, if an exchange trading day at Eurex, otherwise the preceding trading day
Contract Months	**Terms of up to 24 months** until the respective expiry days, such that **at any time**, **the nearest expiries** are available for trading as follows: ▪ Four semi-annual expirations (June, December), ▪ Five quarterly expirations (March, June, September, December), ▪ Three monthly expirations. Where expirations would overlap according to the above, only a single expiration will be available.
Daily Settlement Price	Established on the current exchange trading day based the following components: **Closing Underlying Equity Price** + **Daily Settlement Basis** (based on the **Daily Settlement TRF Spread**) **+** **Accrued Dividends** - **Accrued Funding** (both cumulated from launch to the current exchange trading day)
Accrued Dividends & Accrued Funding *(EUR per share)*	The net dividends plus payments due to the overnight funding rate, will both be accumulated from ETRF product launch (base date) and added to the ETRF price in **clearing notation** – parameters will be available prior to the start of each trading day ▪ Accrued Dividends and Accrued Funding will be expressed in EUR per share basis to 6 decimals. ▪ The daily changes in dividends and funding are incorporated into the daily price and paid via daily Variation Margin.
Trading Hours	▪ **ETRFs standalone – Order Book only (TAC trades):** Pre-trading**:** 09:25 – 09:30 CET / **Continuous Trading**: 09:30 – 17:25 CET ▪ **ETRFs traded as a basket – Basket Trade of Total Return Futures via Eurex T7 Trade Entry Service (TAM & TAC):** Trade Entry Services: 09:30 – 22:10 CET

ETRF Contract Specifications - UK ETRFs in GBX

Specification	Details
Underlyings	▪ Equity shares included in **FTSE 100 index** at the time of the selection ▪ Funding Rate: **Sterling Overnight Index Average (SONIA)** as a percentage - published by the Bank of England ▪ Equity Dividend Index (EDI) for each underlying equity - provided by STOXX with start date **19 June 2023** ○ **Net dividends based on the withholding tax rates used by STOXX (https://www.stoxx.com/withholding-taxes)** ○ **WTH = 0%** for the majority of underlying equities (except for REITs which have **WHT = 20%** for Property Derived Income - PDI) ○ **Important:** EDIs are published by STOXX in GBP, while Eurex adjusts them to GBX for accrued dividends calculation in line with equity prices in Great British Pence.
Buckets & Profiles	**Two buckets - B10** (British Large Cap), **B11** (British Large Cap REITs). **Two profiles - PRF 12** (for B10), **PRF 13** (for B10 & B11).
Currency & Settlement	Currency: **GBX** (Great British pence). Bank of England's settlement calendar: **CHAPS (Clearing House Automated Payment System)**
Day Count Convention	**ACT/365** (fixed number of days per year - i.e. Annualisation Factor of 365)
Contract Size	**100 equity shares**
TRF Spread *(Tick Size)*	+/- **0.5 basis points**
Trade Types	**Trade at Close** (TAC) – underlying equity price is determined at end of day close price (on reference market) **Trade at Market** (TAM) – underlying equity price is determined and entered by the trading participants ("strike" price)
Expiration & Last Trading Day	The **3rd Friday** of each contract month, if an exchange trading day at Eurex, otherwise the preceding trading day
Contract Months	**Terms of up to 24 months** until the respective expiry days, such that **at any time**, **the nearest expiries** are available for trading as follows: ▪ Four semi-annual expirations (June, December), ▪ Five quarterly expirations (March, June, September, December), ▪ Three monthly expirations. Where expirations would overlap according to the above, only a single expiration will be available.
Daily Settlement Price *(GBX – Great British pence)*	Established on the current exchange trading day based on the following: **[Closing Underlying Equity Price + Daily Settlement Basis* + Accrued Dividends** - Accrued Funding***]** ***Notes**: * Based on the **Daily Settlement TRF Spread** / ** Accumulated from 19 June 2023 / *** Accumulated from product launch of 6 November 2023*
Accrued Dividends & Accrued Funding *(EUR per share)*	The net dividends and payments due to the overnight funding rate will be accumulated and added to the ETRF price in **clearing notation** ▪ Accrued Dividends and Accrued Funding will be expressed in GBX (Great British pence) per share basis to 6 decimals. ▪ The daily changes in dividends and funding are incorporated into the daily price in GBX and paid via daily Variation Margin.
Trading Hours	▪ **ETRFs standalone – Order Book only (TAC trades): Pre-trading:** 10:25 – 10:30 CET / **Continuous Trading**: 10:30 – 17:25 CET ▪ **ETRFs traded as a basket – Basket Trades via Eurex T7 Trade Entry Service (TAM & TAC): Trade Entry Services**: 10:30 – 22:10 CET

ETRF Contract Specifications - Swiss ETRFs in CHF

Specification	Details
Underlyings	▪ Equity shares included in an eligible index (SLI Swiss Leaders Index) - denominated in CHF ▪ SARON (Swiss Average Rate Overnight) * 6pm fixing (SIX) ▪ Equity Dividend Index in CHF (Stoxx) - *Net Dividends based on withholding tax rates currently used by STOXX e.g. for Switzerland 35% (dividends paid out of capital reserves or capital contributions are tax-exempt)*
Buckets & Profiles	**1 bucket - B12** (Large Caps) **1 profile - PRF 15**
Currency & Settlement	Currency: CHF (Swiss franc). Swiss National Bank settlement calendar: Swiss Interbank Calendar (SIC)
Day Count Convention	**ACT/360** (fixed number of days per year - i.e. Annualisation Factor of 360)
Contract Size	**100 equity shares**
TRF Spread *(Tick Size)*	+/- **0.5 basis points**
Trade Types	**Trade at Close** (TAC) – underlying equity price is determined at end of day close price (on reference market) **Trade at Market** (TAM) – underlying equity price is determined and entered by the trading participants ("strike" price)
Expiration & Last Trading Day	The **3rd Friday** of each contract month, if an exchange trading day at Eurex, otherwise the preceding trading day
Contract Months	**Terms of up to 24 months** until the respective expiry days, such that **at any time**, **the nearest expiries** are available for trading as follows: ▪ Four semi-annual expirations (June, December), ▪ Five quarterly expirations (March, June, September, December), ▪ Three monthly expirations. Where expirations would overlap according to the above, only a single expiration will be available.
Daily Settlement Price *(CHF – Swsis franc)*	Established on the current exchange trading day based on the following: **[Closing Underlying Equity Price + Daily Settlement Basis* + Accrued Dividends** - Accrued Funding***]** ***Notes**: * Based on the **Daily Settlement TRF Spread** / ** Accumulated from 20 December 2024 / *** Accumulated from product launch of 31 March 2025*
Accrued Dividends **& Accrued Funding** *(EUR per share)*	The net dividends and payments due to the overnight funding rate will be accumulated and added to the ETRF price in **clearing notation** ▪ Accrued Dividends and Accrued Funding will be expressed in GBX (Great British pence) per share basis to 6 decimals. ▪ The daily changes in dividends and funding are incorporated into the daily price in GBX and paid via daily Variation Margin.
Trading Hours	▪ **ETRFs standalone – Order Book only (TAC trades):** Pre-trading**:** 09:25 – 09:30 CET / **Continuous Trading**: 09:30 – 17:25 CET ▪ **ETRFs traded as a basket – Basket Trade of Total Return Futures via Eurex T7 Trade Entry Service (TAM & TAC):** Trade Entry Services: 09:30 – 22:10 CET

iSTOXX Equity Dividend Indices (EDI)

Overview

- **Equity Dividend Indices (EDI)** are calculated by STOXX and designed to track the total net dividend per share amount paid by single equities over the period of time spanning from base date till the current day
- All cash and scrip (with cash alternative) dividend types are taken into account (i.e. regular and special dividends), as reported by the company, The index value is adjusted for corporate actions over time
- Equity Dividend Indices are available on the STOXX website here

Main Principles

- EDI themselves will grow indefinitely, i.e. no periodic reset to 0 (similar to SX5EDD)
- All dividends are treated consistently by including them in EDIs (i.e. no distinction between special and regular dividends)
- All dividends are on a net withholding tax basis (to encourage substitution by the long BTRF holder) (where such dividends are normally subject to tax). The net dividends are based on withholding tax rates used by STOXX*
    - WHT rates are applied based on the **country classification** by STOXX and not by ISIN. For example, Ferrari has a NL ISIN, but it is classified as IT (Italy) with main exchange is Milan. The net dividend for **ETRF on Ferrari N.V. (T2FE**) is included in the corresponding EDI based on the WHT applicable for Italy (i.e. 26% as of presentation date – May 2022). In the case of SHELL plc however, this stock has a GBP ISIN with main exchange Euronext Amsterdam and is classified as GB with 0% WHT. More info on STOXX website**
    - In case of dividends paid in another currency (e.g. Shell dividends paid in USD), STOXX includes the equivalent in EUR or GBP based on the WM FX available on the day prior to the ex-date (unless the company has stated beforehand a EUR amount)

Functional Handling

- EDI for each underlying equity (in EUR, GBX or CHF) is used to calculate the Daily and Accrued Dividends for each ETRF
- STOXX calculates each EDI such that on ex-date of dividend payments that value (in EUR, GBX or CHF) will be incorporated (prior to start of trading) to the calculation of Daily and Accrued Dividends
- EDI indices are calculated and distributed daily – in particular, they are published in the evening of the **ex-date t-1**. This is to allow that the dividends are incorporated in the EDI prior to the start of trading at Eurex on the ex-date
- If a dividend has gone ex- and is included in the EDI but subsequently amended or not paid post the ex-date dissemination day, there will not be a negative adjustment to the respective EDI index, but rather handled separately via a cash adjustment in line with the market disruption procedure
- Corporate Actions as calculated by STOXX are applied to EDI via R-Factors to ensure matching with underlying reference share /capital adjustments applied to the ETRFs:

$$\mathbf{Adjusted\ EDI\ Index} = \text{EDI index } (\text{T} - 1) \times \text{R Factor}$$

- Exception to the handling above in the case of special dividends:
    - Special dividends will be handled as per business model for ETRF/BTRF (no R-factor).
    - Both regular and special dividends will be treated the same (i.e. included directly in the EDI and reflected in the VM as part of the change in Accrued Dividends component)

* Withholding tax rates are those published by STOXX. The history is available here.

** The country classification can be found at: https://www.stoxx.com/data-index-details?symbol=BKXP under file “components_P000_bkpx.csv”

Corporate Actions (1/2)

Assumptions

- Assumption is that when a scheduled or unscheduled Corporate Action (CA) is announced, then the party who is raising finance through equity financing (i.e. ETRF Buyer) would most likely recall the impacted equities prior to the ex-date of the application of such Corporate Action. From the ETRF/BTRF perspective, the long holder of the BTRF will likely perform a Substitution Trade accordingly.
- Corporate Actions handling for ETRF is envisaged to facilitate actions applicable to any remainder of the open positions over ex-date

Main Principles

- Reuse the existing handling for Single Stock Futures at Eurex now (except in case of special dividends).
- All dividends are treated consistently by including them in the new equity dividend indices (EDI) - i.e. there is no distinction between special and regular dividends.
- The net dividends are based on withholding tax rates used by STOXX*.

Functional Handling

- Similar handling for Single Stock Futures today:
  - Adjustment of Daily Settlement Price
  - Change contract size (multiplier) for existing product code (e.g. 200 shares in case of 2:1 split)
  - List new product code with the standard contract size of 100 shares
  - Use basket functionality in special CAs (e.g. spin-offs)
  - In T7 system the adjustment of the TRF conversion parameters is done by applying on the ex-date the R-factor to Daily Dividends, Accrued Dividends, Daily Funding, Accrued Funding
  - In C7 system, the Daily Settlement Price will be adjusted via the Eurex Classic system (i.e. not via technical trades).
- Exception to the handling above in the case of special dividends:
  - Special dividends are handled for ETRF/BTRF without applying the R-factor.
  - Both regular and special dividends are treated the same (i.e. included directly in the Equity Dividend Index (EDI) and reflected in the Variation Margin as part of the change in Accrued Dividends component).

Withholding tax rates are those published by STOXX. The history is available here.

Corporate Actions (2/2)

Dividends

- No impact on corporate actions for **cash/scrip dividends** (both regular and special dividends are included in EDI index)
- R-factor method will still apply for **stock dividends** (including from treasury stock) and **dividends in form of shares** issued by other company (different ISIN)

Other Corporate Events

- R-factor method is applied for stock splits, reverse stock splits, capital increased via free shares (bonus shares), capital increase via free shares with a different ISIN, capital increase via cash by issue of new shares with full dividend rights (rights issue) or new shares without full dividend rights (dividend disadvantage), capital decreases.
- Spin-offs: R-factor or Basket method
  - In the case of Basket method, if on the ex-date there is open interest, the ETRF will be based on a underlying basket and in general, a new ETRF will be listed on the parent.
  - However, if no open interest on ex-date, the respective ETRF will be put on hold and a new EDI will be created by STOXX based only on the parent (not the basket). Once the new EDI is available, then the ETRF will be resumed for trading.
- Mergers: R-factor or Fair Value method / Demergers: Basket method

Adjustment in T7 of TRF Parameters

$$\textbf{Adj. EDI (Ex Date} - \textbf{1)} = \text{EDI(Ex Date} - 1) \times \text{R Factor}$$

$$\textbf{Daily Dividends (Ex Date)} = \text{EDI(Ex Date)} - \text{Adj. EDI (Ex Date} - 1)$$

$$\textbf{Adj. Accrued Dividends (Ex Date} - \textbf{1)} = \text{Accrued Dividends (Ex Date} - 1) \times \text{R Factor}$$

$$\textbf{Adj. Stock Close Price (Ex Date} - \textbf{1)} = \text{Stock Close Price (Ex Date} - 1) \times \text{R Factor}$$

$$\textbf{Adj. Accrued Funding (Ex Date} - \textbf{1)} = \text{Accrued Funding (Ex Date} - 1) \times \text{R Factor}$$

$$\textbf{Daily Funding (Ex Date)} = \text{Adj. Stock Close Price (Ex Date} - 1) * \text{€STR (Ex Date} - 1) \times \frac{\text{Funding Days (Ex Date)}}{360}$$

Adjustment of Contract Size

$$\textbf{Adj. Contact Size} = \frac{100}{\text{R Factor}}$$

Adjustment of Daily Settlement Price

$$\textbf{Adj. ETRF Daily Settlement Price (Ex Date} - \textbf{1)} = \text{ETRF Daily Settlement Price (Ex Date} - 1) \times \text{R Factor}$$

Open Position

No adjustment is applied to the open position, as the settlement price and contract size are adjusted to maintain the same notional value.

3 Basket Trades of Equity Total Return Futures

BTRF Main Principles

Definition

Basket Trades of ETRFs **(BTRF)** is a customised package, negotiated by the exchange participants, of one or more ETRFs all traded with the **same maturity** and at the **same TRF spread.**

- **BTRF** is constructed by traders within certain parameters (e.g. eligible buckets, number of underlying stocks, notional amount of each, market side and profile) in relation to eligible underlying shares of the ETRFs to be incorporated.
- A **new Trade Entry Service (TES) functionality** for **BTRFs** has been developed in Eurex T7 trading system.
- ETRF positions traded as part of a Basket Trade are **not netted** with those traded in other baskets as they are **kept on gross basis** in the C7 clearing system, based on a unique basket transaction ID generated by the T7 trading system.

Basket (BTRF) ID & Own Reference ID

For each **new** BTRF, the T7 trading system will automatically generate a **unique Basket ID***:

- BTRF ID will be **unique** across all members and through time (i.e. even after the expiry of the BTRF positions).
- The BTRF ID will be **kept to term** (i.e. not deleted or reused) and **not** be changed due to subsequent trades.

***Technical note**: The basket ID is an unsigned integer value that is sent through ETI interface in a performance-friendly **8-byte binary format** (i.e. it is **numeric by definition**). **Integer numbers held in an 8-byte binary field can have up to 20 digits.** An application on the customer side has to be able to handle these numbers.
Eurex does not guarantee a maximum value of the generated numbers, other than what the given format of an unsigned 8-byte binary integer allows. Especially, customer applications **should not** restrict themselves to a lower number than 20 digits.

Basket Trade Handling

- BTRF can be traded via the T7 trading system only as **block trades** via the Eurex T7 Trade Entry Services (TES).
- The ETRFs components of a basket are entered as a package via **a new dedicated screen** in the T7 GUI or **new dedicated requests** via the ETI interface. Upload file functionality for baskets is available via the T7 GUI.
- Upon BTRF trade entry, the trader is required to select the relevant “**Bucket**” and afterwards select the eligible ETRFs which have been previously mapped to that respective bucket.
- All ETRFs must have the same maturity (expiry) and same traded TRF spread in basis points at entry.
- Upon the initial execution, all ETRF components will have the same: Market side (i.e. only **Long** or only **Short**) & Trade type (i.e. only **TAC** or only **TAM**).

Substitution Rights

The initial Buyer of a BTRF has the right to substitute any ETRF with another eligible ETRF from the same **Bucket** at any time - both parties have the right to substitute in case the requirements of the **Profile** are breached.

Calculation Formulas

Traded Futures Price (EUR)

$$\textbf{Traded Futures Price}_{\textbf{EUR}}(\textbf{t}) = \text{Equity Price}_{\text{EUR}}(\text{t}) + \text{Traded Basis}_{\text{EUR}}(\text{t}) + \text{Accrued Dividends}_{\text{EUR}}(\text{t}) - \text{Accrued Funding}_{\text{EUR}}(\text{t})$$

- **t = current trading day**
- **Equity Price$_{EUR}$ (t) -** 2 types of trades:
  - **Trade-at-Close (TAC):** based on **Close Equity Price$_{EUR}$ (t)**
  - **Trade-at-Market (TAM):** based on **Custom (Strike) Equity Price** entered by the trader directly
- $\textbf{Traded Basis}_{\textbf{EUR}}(\textbf{t}) = \text{Equity Price}_{\text{EUR}}(\text{t}) * \left(\frac{\text{Traded TRF Spread [in bps]}}{10{,}000} \text{ x } \frac{\text{Days to Maturity (t)}}{360}\right)$
- **Traded Futures Price$_{EUR}$ (t)** calculated based on the above components and rounded in a second iteration to 2 decimals

Daily Settlement Futures Price (EUR)

$$\textbf{Daily Futures Settlement Price}_{\textbf{EUR}}(\text{t}) = \text{Close Equity Price}_{\text{EUR}}(\text{t}) + \text{Settlement Basis}_{\text{EUR}}(\text{t}) + \text{Accrued Dividend}_{\text{EUR}}(\text{t}) - \text{Accrued Funding}_{\text{EUR}}(\text{t})$$

- **t = current trading day**
- **Settlement Basis$_{EUR}$ (t) = Close Equity Price$_{EUR}$ (t) * [Daily TRF Settlement Spread (bps) /10,000] * (Days to Maturity(t) / 360)**
- **Daily Settlement Futures Price$_{EUR}$ (t)** calculated based on the above components and rounded in a second iteration to 2 decimals

Daily P/L (Variation Margin) (EUR)

$$\textbf{DailyP/L}_{\textbf{EUR}} = +\,\textbf{Long Open Position}(\text{t}) \times \frac{(Futures\ Settlement\ Price_{EUR}(t) - Futures\ Settlement\ Price_{EUR}(t-1)}{100\ shares}$$

$$\textbf{Daily P/L}_{\textbf{EUR}} = -\,\textbf{Short Open Position}(\text{t}) \times \frac{(Futures\ Settlement\ Price_{EUR}(t) - Futures\ Settlement\ Price_{EUR}(t-1)}{100\ shares}$$

- **t = current trading day**
- **Open Position = number of open contracts at end of day t**
- **Daily Settlement Futures Price$_{EUR}$ (t)** calculated based on the above components and rounded in a second iteration to 2 decimals

Final Settlement Futures Price (EUR)

$$\textbf{Final Futures Settlement Price}_{\textbf{EUR}}(\text{T}) = \text{Close Equity Price}_{\text{EUR}}(\text{T}) + 0 + \text{Accrued Dividend}_{\text{EUR}}(\text{T}) - \text{Accrued Funding}_{\text{EUR}}(\text{T})$$

- **T = Expiry Date**
- **Settlement Basis$_{EUR}$ (T) = 0** (**Note:** TRF Spread is 0 at expiry due to Days to Maturity = 0)
- **Final Settlement Futures Price$_{EUR}$ (T)** calculated based on the above components and rounded in a second iteration to 2 decimals

BTRF Futurised Model: Use Cases

Synthetic Equity Financing

Eurex approach synthetic financing has futurised the swap leg of the OTC equity financing transaction via a **Eurex Basket Total Return Future (BTRF)**:

- **Cash Borrower (Bank A)** – wishes to raise finance using equity as collateral based on a market standard collateral schedule (i.e., “**Buckets**”)
- **Cash Lender (Bank B)** - offers financing at a rate based on that schedule (annualized spread in basis points over €STR benchmark rate)
- **Counterparties** determine the basket of equities acceptable under the agreed schedule and any terms and limitations (“**Profiles**”) governing life cycle
- **Profiles** applicable for equity financing are **Profile 1 – 10** and **Profile 12 - 14** (with standard market terms and limitations encapsulated in Contract Specifications)

TRF Spread represents the Financing Spread/Cost (over benchmark funding rate) to term

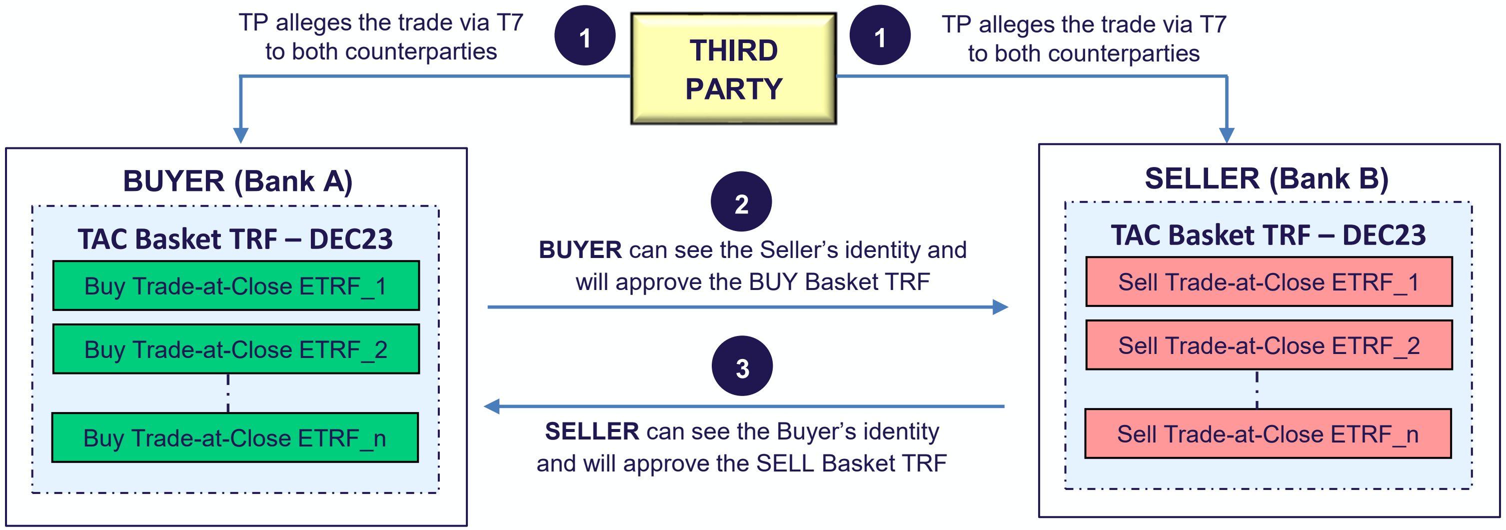
Short Coverage

- **Equity Lender (Bank A)** – provides specific equities to a counterparty and receives synthetic performance for the respective shares as a BTRF Buyer.
- **Equity Borrower (Bank B)** - wishes to obtain specific equities to cover for short positions and provides the synthetic performance as a BTRF Seller.
- **Counterparties** determine the basket of equities under an agreed (specific or broad based).
- **Profile 11** applicable for short coverage use case which was introduced in March 2022. Under this profile, the BTRF Buyer **cannot enforce** a substitution trade to recall the respective equity (**i.e., Sub trade must be bilaterally agreed**)

TRF Spread reflects the Repo Rate for borrowing shares

BTRF Initial Execution via T7 Trade Entry Services (1/3)

NON-Anonymous Third-Party Negotiation ("name give-up"): The Broker Functionality allows Third Parties (e.g. IDBs) to allege the trade to both counterparties for approval.



Direct Negotiation: One bank submits directly the basket TRF to another bank for approval. They can see each other's identity.

BTRF Initial Execution via T7 Trade Entry Services (2/3)

- From a functionality perspective in the T7 trading system, the Basket Trade operation types are the following:
  - **NEW**: initial execution of a new BTRF (generates a new **BTRF ID**)
  - **AMENDMENT**: subsequent increase or decrease of an existing BTRF (applied to an existing BTRF ID)
  - **SUBSTITUTION**: special type of adjustment of an existing BTRF (applied to an existing BTRF ID)
- Three new fields ("**Shares Equivalent**", "**Weight %**" and "**Notional Value**") will be implemented in the T7 GUI in order to display the weight of each ETRF component (i) within the basket (T): These fields display information calculated by T7 based on the input data provided by the trader upon the BTRF trade entry.

$\text{Shares\_Equivalent}_i = \text{Volume\_ETRF}_i * \text{Multiplier\_ETRF}_i$

$\text{Notional\_Value}_i = \text{Shares\_Equivalent}_i * \text{Underlying\_Equity\_Price}_i$

$\text{Weight }\%_i = (\text{Notional Value}_i\ ) / \sum_{i=1}^{T} \text{Notional Valuei}$

Contract ID	Contract Volume	Underlying Equivalent (shares)	Underlying Equity Price* (EUR per share)	Notional Value (EUR)	Weight** (%)
ETRF_A	10,000	1,000,000	5.00	5,000,000.00	33%
ETRF_B	4,000	400,000	15.25	6,100,000.00	41%
ETRF_C	6,000	600,000	6.50	3,900,000.00	26%
Total				**15,000,000.00**	**100%**

* $\text{Underlying\_Equity\_Price}_i$ for each stock is determined as:

TAC trade – the yesterday's underlying share close price (i.e. **preliminary stock price**)

TAM trade - the underlying share price determined by the trader (i.e. **custom "strike" stock price**)

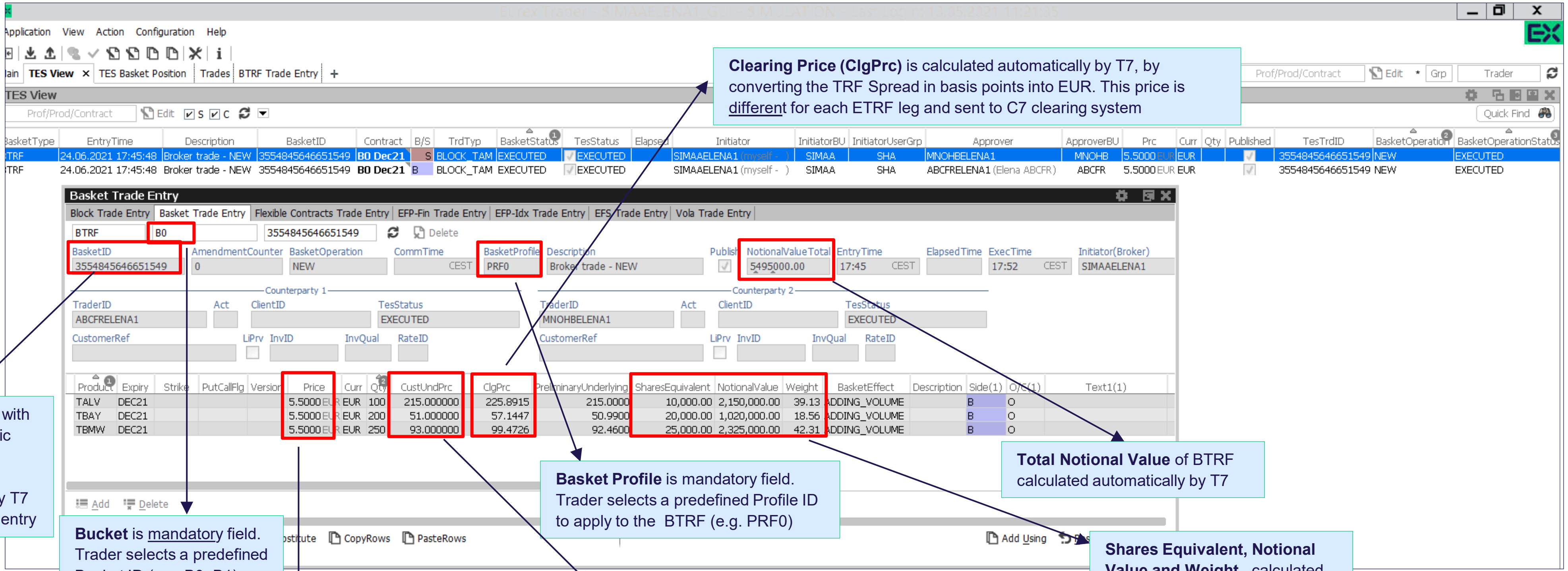
** Weight_i for each underlying stock for TAC trades using a preliminary stock price will not be re-calculated on determination of the final underlying close price

BTRF Initial Execution via T7 Trade Entry Services (3/3)

Example: New Basket Trade via T7 GUI

Basket Trade Entry window for a new BTRF as facilitated by an interdealer broker via the Broker Functionality:

- Initiator Broker = **SIMAA**, Buyer member ID = **ABCFR**, Seller member ID = **MNOHB**
- The basket was newly created ("BasketOperation" = NEW) and has 3 legs (TALV, TBAY, TBMW). The unique Basket ID was generated for the first time by T7 trading system



Clearing Price (ClgPrc) is calculated automatically by T7, by converting the TRF Spread in basis points into EUR. This price is different for each ETRF leg and sent to C7 clearing system

Basket ID field with up to 20 numeric characters is generated automatically by T7 after the BTRF entry

Bucket is mandatory field. Trader selects a predefined Bucket ID (e.g. B0, B1) or combinations (e.g. B1+B3)

Basket Profile is mandatory field. Trader selects a predefined Profile ID to apply to the BTRF (e.g. PRF0)

Total Notional Value of BTRF calculated automatically by T7

Shares Equivalent, Notional Value and Weight calculated automatically by T7

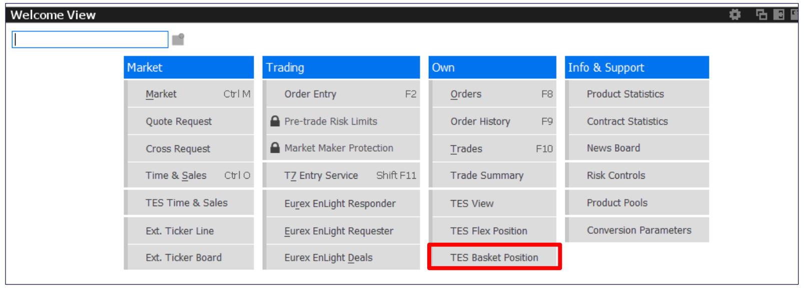
Price is mandatory field. Trader must enter the **TRF Spread in basis points** (+/-) over €STR.
All individual ETRFs will have the same spread. It is sufficient to be entered for the first ETRF leg and the T7 GUI automatically prefills the price to all legs (e.g. 5 bps).

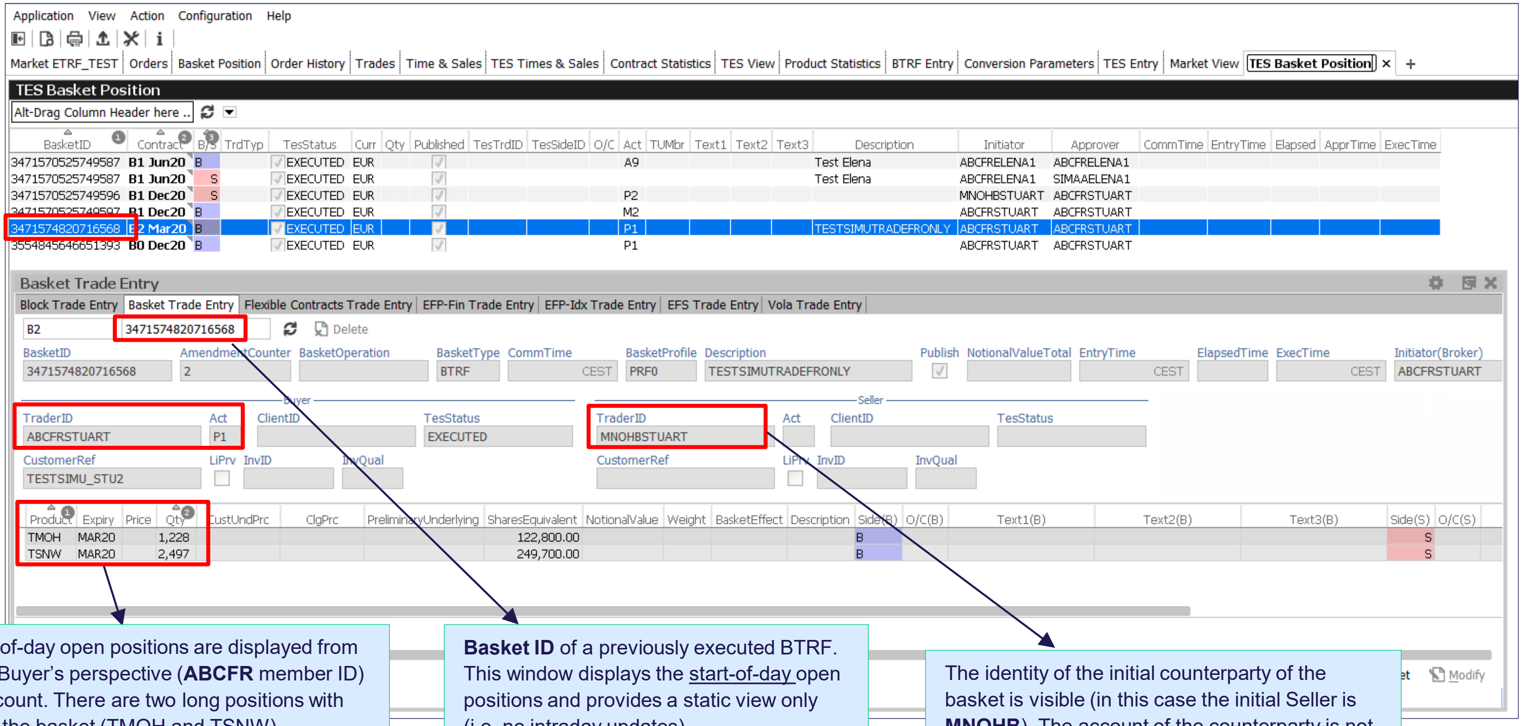
Custom Underlying Price (CustUndPrc) is optional field.
Trader may optionally enter the **underlying stock price in EUR** based on a custom level. It applies for **TAM trades only**.

In case of **TAC trades**, the field CustUndPrc is left empty and yesterday's underlying stock close price is applied automatically by T7 in the field **Preliminary Underlying**.

BTRF Open Positions via T7 Trader GUI

TES Basket Position window displays in T7 trading system the start-of-day open positions with BTRF from C7 clearing system





The start-of-day open positions are displayed from the initial Buyer's perspective (**ABCFR** member ID) for **P1** account. There are two long positions with ETRFs in the basket (TMOH and TSNW).

Basket ID of a previously executed BTRF. This window displays the start-of-day open positions and provides a static view only (i.e. no intraday updates)

The identity of the initial counterparty of the basket is visible (in this case the initial Seller is **MNOHB**). The account of the counterparty is not visible as confidential information due to different member IDs are involved in the basket

Adjustments of open BTRFs via subsequent T7 trades (1/2)

Amendments & Substitutions

ETRF positions held in an existing Basket can be modified by the initial counterparties via subsequent BTRF trades in T7 trading system – this is done by entering a BTRF with the basket identifier (the BTRF ID) of the initial trade and selecting either trade type: **Amendment**, or if applicable **Substitution**

Amendment
Increase / Decrease of BTRF

- **Amendment** from an economic point of view is additional BTRF trade or trades applied to the basket by using the initial basket BTRF ID. Operational the BTRF can be used to:
  - Add and/or Remove a new ETRF (line item) from the same Bucket into the basket
  - Increasing / Decreasing the notional amount (of existing line items) within the basket
- Amendment trades require the prior agreement of both counterparties

Substitution
from / into BTRF

- **Substitution** is specific operation via the BTRF trade using the initial basket BTRF ID, whereby one or more ETRFs are removed from an existing basket but are replaced with other ETRF contracts from the same Bucket(s) with the **same notional value and at the same spread**

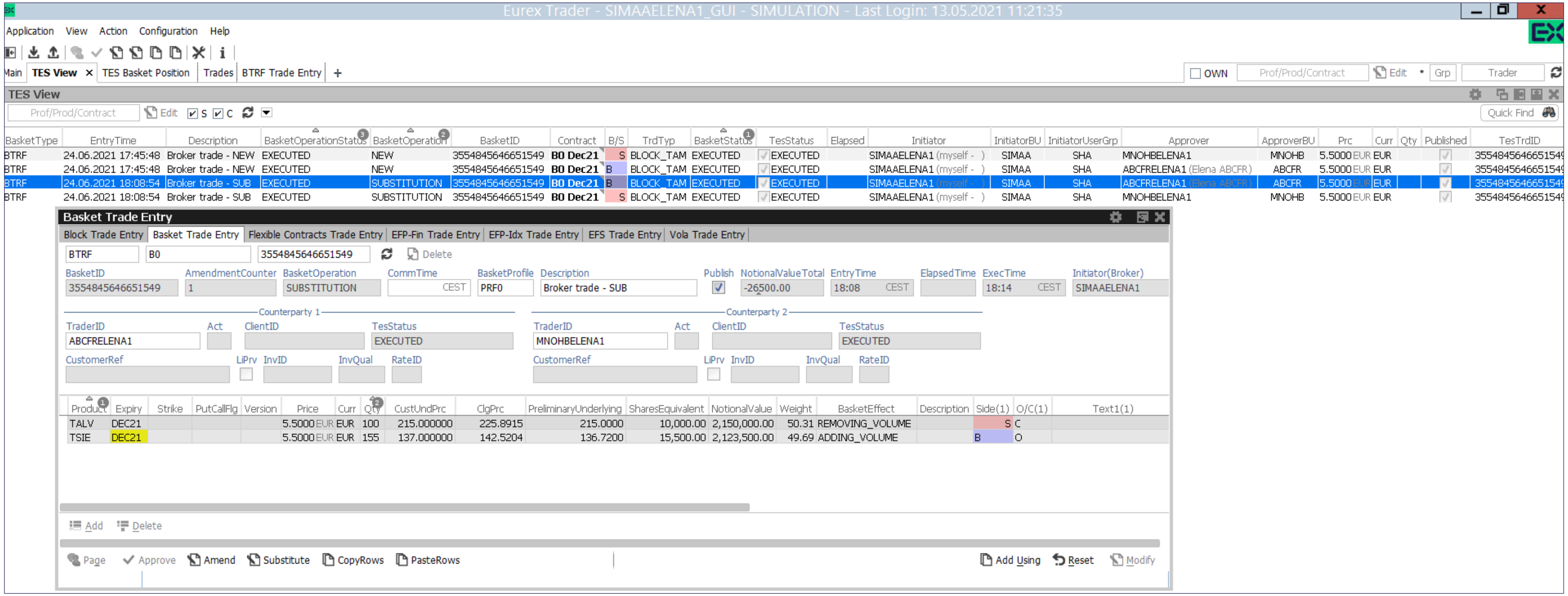
Substitution of ETRF_1 with ETRF_5 (Basket ID: 12345)

- In general, each party of the existing basket can request to perform Substitution trades:
  - The initial Buyer has the right to initiate the BTRF Substitution trades and the Seller has the obligation to accept the substitution request
  - The Seller may only refuse the substitution request in limited and pre-defined circumstances
  - The initial Seller may also initiate a request to execute Substitution trades though no formal obligation exists on the Buyer side to accept the request (except where profile is breached)
- The unique BTRF ID will <u>not</u> change due to subsequent adjustments of the basket using BTRFs
- From a regulatory perspective, the rule enforcement will be done via the Eurex rulebook

Adjustments of open BTRFs via subsequent T7 trades (2/2)

Example: Substitution Trade via T7 GUI

- Initiator Broker = **SIMAA**, Buyer member ID = **ABCFR**, Seller member ID = **MNOHB**
- “BasketOperation” field = SUBSTITUTION
  - TALV product is removed from the basket and replaced with TSIE product
  - The spread in basis points of both legs is the same (i.e. 5.50 bps included in field “Price”)
- The unique Basket ID does not change due to the substitution trade



Buckets – Definition (1/2)

Main Principles

- **Buckets and Profiles** form an integral part of the ETRF / BTRF offering and are applicable to all Basket trades – these must be determined as part of the initial trade negotiation.
- The aim of these is to define sets and sub-sets representing eligible collateral for the purposes of equity financing – based on the underlying constituents of a benchmark index.
- In the first phase, the ETRF products to be launched are based upon the EUR denominated components of the STOXX® Europe 600 (SXXP).
- **Buckets** - each ETRF is allocated by Eurex to one Bucket with reference to the eligible underlying stock and that particular stock's generally determined segmentation in the equity financing market. This is described on the following slide.
- When trading ETRFs within a Basket Trade (BTRF) the initial buyer has a right of **substitution** – but that right allows substitution only with those ETRFs in the same Bucket (or Buckets) selected at the point of the initial trade and this restriction is enforced within the T7 system

Bucket Allocation

Buckets – ETRFs based on underlying stocks are allocated by Eurex to specific Buckets.

- The determination of Buckets for each ETRF is based on the underlying shares and in particular by reference to **Country Code (ISO) of the ISIN**.
- ETRFs based on EUR denominated underlying shares are allocated using **three broad criteria**:

Rating of country of issuance

- Country of issuance is Rated AA- (Standard & Poor's) and Aa3 (Moody's) <u>or higher</u>
- Country of issuance is Rated A+ (Standard & Poor's) or A1 (Moody's) <u>or lower</u>

Financial Transaction Tax (FTT)

- Share trading is subject to Financial Transaction Tax, Stamp Duty or Turnover Tax
- Share trading is not subject to tax

Large Cap / Mid Cap

- Large Cap - determined based upon free float market capitalisation in reference to the median market capitalisation of the benchmark index
- Mid Cap – where the underlying share market capitalisation is below the median market capitalisation of the index

Buckets – Definition (2/2)

ETRF/BTRF Individual Buckets

Buckets are used for allocation of individual ETRFs based on the above criteria (EUR & GBX denominated)

Group ID	Bucket ID	Group Description (For information only)			Country (ISIN ISO)
AA40	B1	AA Country Rating	Large Cap	Not subject to FTT	AT, BE, DE, FI, NL, LU Exceptions: IE (Linde), GB (RDSA)
AA41	B2	AA Country Rating	Mid Cap	Not subject to FTT	
AX40	B3	AA Country Rating	Large Cap	Subject to FTT	FR
AX41	B4	AA Country Rating	Mid Cap	Subject to FTT	
BA 40	B5	Single A Country Rating	Large Cap	Not subject to FTT	ES, PT
BA 41	B6	Single A Country Rating	Mid Cap	Not subject to FTT	
BX 40	B7	Single A Country Rating	Large Cap	Subject to FTT	IE, IT
BX 41	B8	Single A Country Rating	Mid Cap	Subject to FTT	
GB40	B10	British/ Large Cap			GB
GB41	B11	British/ Large Cap Real Estate Investment Trusts			
CH40	B12	Swiss Large Cap			CH

July 2026

ETRF/BTRF Combo Buckets

T7 TES allowed Buckets and Combinations in System	
B0	All
B1	GC (Northern Europe on FTT) Large Caps
B1 + B2	GC + Mid Caps
B1 + B2 + B3 + B4	All Northern Europe
B1 + B3	GC + French Large Caps
B1 + B3 + B5	GC + French + Portugal/ Spain Large Caps
B1 + B3 + B5 + B7	Large Caps

T7 TES allowed Buckets and Combinations in System (cont.)	
B2	Northen Europe Mid Caps
B3	French Large Caps
B4	French Mid Caps
B5	Spain + Portugal Large Caps
B6	Spain + Portugal Mid Caps
B7	Italian + Irish Large Caps
B8	Italian + Irish Mid Caps
B10 + B11	British Large Caps + Large Caps Real Estate Investment Trusts
B12	Swiss Large Cap

Profiles - Definition (1/2)

Main Principles

- Profiles can be considered as an additional overlay to the Buckets when trading a BTRF and one Profile is also selected when entering the initial BTRF trade. Profiles are also pre-determined by Eurex reflecting generally accepted market principles. In addition to referencing eligible Buckets, they denote limitations applicable to the basket such as:
    - Maximum total notional value of a specific Bucket (where multiple buckets are selected)
    - Maximum notional value of an individual stock ETRF based on the average daily volume traded
    - Maximum total notional value of an individual stock ETRF within a Basket
    - Maximum total notional value of ETRFs where the underlying are Financial Sector Entities
- Substitution trades when applied, must ensure the resulting Basket conforms to Profile to be enforceable
- Both initial parties to the BTRF have the right of substitution to bring a basket into line with a profile (for example if the underlying notional of the basket ETRFs has a significant move)

Profile Limitation Criteria

- Profiles for BTRF trades that result in a Basket the profiles determine the acceptable criteria determined both at the point of initial trade for any subsequent substitution trades.
- As well as the limitation of the Bucket (or Buckets), Profiles give additional criteria to determine the acceptability of BTRF substitutions:
    1. **Eligible Buckets:** determines which set of eligible buckets should apply to the basket
    2. **Individual Bucket Limitations:** limitations on the notional value, based upon the notional value of the underlying shares, of ETRFs in specified buckets compared to the total notional value of the basket as a whole
    3. **Notional Average Daily Volume:** limitations on the notional value of a specific ETRF position within a basket, based upon the average daily notional value of trading in the underlying stock
    4. **Individual Limitation:** limitation on the notional of a specific ETRF position compared to the total notional value of the basket as a whole
    5. **Sector Limitation:** limitation of the notional value of ETRF positions where underlying reference shares are Financial Sector Entity compared to the total notional value of the basket as a whole

Profiles - Definition (2/2)

Initial Profiles

Profile Name	Profile ID	Profile Description (for information only)					
		Eligible Buckets	Bucket Limitations	Notional ADV Limitation	Individual Limitation	Financial Sector Entities Limitation	Other Limitations
Profile 1	PRF1	All					
Profile 2	PRF2	All		Maximum 1 ADV	Maximum 50%		
Profile 3	PRF3	B1		Maximum 1 ADV	Maximum 50%	Maximum 30%	
Profile 4	PRF4	B1 and B3	B3 Maximum 50%	Maximum 1 ADV	Maximum 50%	Maximum 30%	
Profile 5	PRF5	B1, B3, B5 and B7		Maximum 1 ADV	Maximum 50%	Maximum 30%	
Profile 6	PRF6	B1, B2, B3 and B4	B2 + B4 Maximum 50%	Maximum 1 ADV	Maximum 50%	Maximum 30%	
Profile 7	PRF7	B1, B3, B5 and B7		Maximum 1 ADV	Maximum 50%		
Profile 8	PRF8	B1 and B2	B2 Maximum 50%	Maximum 1 ADV	Maximum 50%	Maximum 30%	
Profile 9	PRF9	B1 and B3		Maximum 1 ADV	Maximum 50%	Maximum 30%	
Profile 10	PRF10	B1, B3 and B5		Maximum 1 ADV	Maximum 50%	Maximum 30%	
Profile 11	PRF11	All					Electronic approval of the terms of a Substitution Trade prior to trade entry must be given
Profile 12	PRF12	B10		Maximum 1 ADV	Maximum 50%	Maximum 30%	
Profile 13	PRF13	B10 and B11	B11 Maximum 50%	Maximum 1 ADV	Maximum 50%	Maximum 30%	
Profile 14	PRF14	B5 and B6	Only Cash Market ID XMAD Products	Maximum 1 ADV	Maximum 50%	Maximum 30%	
Profile 15	PRF15	B12		Maximum 1 ADV	Maximum 50%	Maximum 30%	

Profiles vs. Substitution Rights

Event	Profile	Buyer	Seller	Exception
Substitution to bring BTRF into alignment with the limitations of the pre-selected Profile	**PRF2 – PRF10** **PRF 12 – PRF 15** Profiles with specific limitations (e.g., buckets, ADV, financial stocks)	Bilateral Substitution right	Bilateral Substitution right	
	PRF1 & PRF11 No limitations defined by Profile	Substitution right not applicable as no profile limitations	Substitution right not applicable as no profile limitations	
Substitution initiated for any other reason	**PRF1 – PRF10** **PRF 12 – PRF 15**	Unilateral Substitution right	Obligation to accept Substitution Trade	Seller May reject (i.e. not confirm) a Substitution trade under **art. 1.26.12 paragraph (6) letter (g)**
	PRF11	Conditional Substitution (ONLY if pre-agreed with the Seller via electronic means)	Conditional Substitution (ONLY if pre-agreed with the Buyed via electronic means)	Seller May reject (i.e. not confirm) a Substitution trade under **art. 1.26.12 paragraph (6) letter (g)**

High Level Clearing Overview

Clearing & Pricing

- Dedicated fields in C7 for **Basket ID** (C7 = PackageID) and **Bank's Own Reference ID** (C7 = FirmTrdID).
- C7 **position keeping adjusted** to build positions considering the **Basket ID.**
- C7 **position / transaction management** largely unchanged (considering the **unique Basket ID**).
- Subsequent adjustments via T7 trades for the same Basket ID (**increases**, **decreases, substitutions**).
- **Risk Management -** portfolio margin offsets between ETRF / BTRF positions and other products included in the equity liquidation group.
- **DMP** handling comprises the **decomposition of the entire basket** for the defaulting member as well as for the non-defaulting basket counterpart. New **transaction type "132"** ("Decomposition") introduced.
- **New pricing** handling (execution & maintenance fee) based on **notional value**.

FIXML & GUI

- **PackageID** reflects the Basket ID (FIXML tag 2489).
- **FirmTrdID** reflects the Bank's Own Reference ID (FIXML tag 1041).
- PackageID & Firm TrdID are **available on the GUI.**
- Transaction type "**132**" for the **decomposition**.

Member Reports

- **Basket ID, Bank's Own Ref. ID** shown in relevant **clearing reports** (e.g. CB012 and other reports) at transaction / position level.
- **Basket ID and the notional amount** visible in **billing reports** (CB165 and CE035). Monthly billing report to provide an aggregated basket view.

C7 Position & Transaction Management (1/3)

Position Keeping:

- **All available accounts** can be used to capture ETRFs or BTRFs.
- Two new fields were introduced for the BTRF handling in C7:
  - The **Basket ID** will be loaded from T7 (known as BTRF ID) and is not maintainable. FIXML = PackageID.
  - The Bank's **Own Reference ID** (FIXML = FirmTrdID) is loaded from T7 and treated by C7 like an additional text field.
- In C7 each transaction in the same account and instrument (product/maturity) is uniquely identified by a **Position ID**.
- This logic was enhanced to allow the **consideration** of the **Basket ID** (loaded from T7 (BTRF ID); not maintainable in C7) as an additional separator. A position is unique in the combination of **account, instrument and Basket ID**.
  - E.g. If an ETRF on BMW shares (code: TBMW) with December 20 expiry is traded as a standalone product (not part of a basket), it will be maintained in C7 system separately from other positions with TBMW December 20 traded as part of a basket. Thus, several positions will be created for TBMW December 20 to avoid unintended netting of different baskets.

Account	Open Long	Open Short	Product	Maturity	Basket ID	Position ID	
M1	1000		TBMW	Dec-20		69545	Single ETRF outside of a basket (blank "Basket ID")
M1		1000	TBMW	Dec-20	1234	4568	ETRF part of basket 1234
M1	500		TBMW	Dec-20	5678	845635	ETRF part of basket 5678

  - As a consequence, the same ETRF on a certain stock can be kept on multiple open positions, individually separated in accordance with the Basket ID.

- **C7 GUI allows searching** for entire baskets by using the Basket ID as search criteria.

Filter: **Basket ID** **5678**

Account	Open Long	Open Short	Product	Maturity	Basket ID	Position ID
M1	1000		TDAI	Dec-20	**5678**	**75236**
M1	500		TBMW	Dec-20	**5678**	**95632**
M1	500		TVOW	Dec-20	**5678**	**845635**

Searching via Basket ID delivers the view on all basket components

C7 Position & Transaction Management (2/3)

- **Overall impact on post-trade operations**:
  - **Positions** are created considering the **Basket ID**.
  - As a result, ETRFs included in a certain basket cannot be netted against single ETRFs or the same ETRFs in another basket.
- Generally, all position and transaction management functions are **fully supported**.
  - **Transaction Management** is performed **on single transaction level**.
    - Please note via the C7 GUI **all transactions** with the same Basket ID (e.g. belonging to the same basket) **can be filtered**. Furthermore, the **Own Reference ID** will be offered as a filter criteria too.
    - Multiple selection and "**bulk submission**" is available for certain functions via the C7 GUI.
  - **Position Management** is performed **on single position level**.
    - Please note via the C7 GUI **all positions** with the same Basket ID (e.g. belonging to the same basket) **can be filtered**.
    - Multiple selection and "**bulk submission**" will be available for certain functions via the C7 GUI.
    - External Position **Transfer with cash** transfer is exclusively offered on single position level only.
- If members want to keep the **baskets "together"** either on account level or on member level, it will be the **responsibility of the respective member** to ensure this operationally

C7 Position & Transaction Management (3/3)

Give-up/Take-up and Position Transfers:

- Functionally **no changes applied**.
- **Any ETRF trade** executed as part of a BTRF is eligible for give-up/ take-up in C7.
- C7 GUI filter allows **searching** for entire baskets (via Basket ID or Own Reference ID) and supports **bulk submission** of give-up/ take-up requests.
- Technically the BTRF will be given-up/ taken-up/ transferred by performing **individual requests** for each ETRF being part of the basket (i.e. transaction-by-transaction; **bulk submission supported** by the C7 GUI).
  - C7 clearing system does **not check if the entire or only partial BTRF is submitted** to the target clearing member.
  - The **approval** by the target clearing member is given for each **individual ETRF** received from the give-up member (again, **bulk submission** will be **supported** by the C7 GUI).
- The **Basket ID** information generated by T7 trading remains **unchanged** during any transfer process.
- The Bank's Own Reference ID will be treated as an **additional text field**.
- The **target Clearing Member(s)** may be the **same or different** for the ETRF transactions (trades/ positions) of a basket.
- The ETRFs of a basket (trades / positions) may be booked into the **same or different target account** during the take-up/ position transfer.
- C7 GUI also supports the submission of **multiple External Position Transfers**.
  - No position quantity or cash amount can be determined. C7 will process the **full quantity** of the selected position.
- Position **Transfer With Cash** will be **supported** if initiated position by position (GUI upload functionality is available).

Adjustments of Existing Baskets via subsequent BTRF Trades

Should the member intend to alter the composition of the original BTRF, then ETRF components can be **decreased, increased** or **substituted** (where a substitution in C7 is treated as combination of decrease and increase):

- This can be done **solely** via new BTRF trades of ETRFs executed **in T7** trading system, by providing the Open / Close indicator and Basket ID.
- Adjustments can only be performed between the **original counterparts**. If a basket originally was given-up post execution, the give-up for the adjustment transactions has to be performed by the executing member for the respective transactions.
- C7 will book **adjustments** coming from T7 **like any other trade**.

Basket impact of a BTRF Substitution trade

- Short close 500 TBMW DEC20 Basket ID 5678 are traded via T7
- Long open 600 TFCA DEC20 Basket ID 5678 are trade via T7

Basket before substitution (add/reduce)

Filter: Basket ID 5678

Account	Open Long	Open Short	Product	Maturity	Basket ID	Position ID
M1	500		TBMW	Dec-20	**5678**	**95632**
M1	1000		TDAI	Dec-20	**5678**	**75236**
M1	500		TVOW	Dec-20	**5678**	**845635**

Basket post substitution

Filter: Basket ID 5678

Account	Open Long	Open Short	Product	Maturity	Basket ID	Position ID
~~M1~~	~~500~~	~~500~~	~~TBMW~~	~~Dec-20~~	~~**5678**~~	~~**95632**~~
M1	1000		TDAI	Dec-20	**5678**	**75236**
M1	600		TFCA	Dec-20	**5678**	**37562**
M1	500		TVOW	Dec-20	**5678**	**845635**

TBMW position will be closed out as a part of the C7 end of day processing

Risk Management & Default Management Process (1/2)

Main Principles

- From a risk management perspective, Basket TRFs are modelled and margined based on **PRISMA methodology** based on the individual ETRFs constituents.
- The liquidation group is Equity (i.e. **PEQ01 – Listed Equity (Index) Derivatives**)) and the corresponding holding period will apply:
  - Portfolio margin offsets are envisaged between ETRF / BTRF positions and other products included in the equity liquidation group.
- The Daily TRF Settlement Spread for each ETRF (expressed in basis points) is used to calculate the Daily Settlement Price (EUR per share basis) necessary to calculate the **Daily Variation Margin (VM)**:
  - **ETRF**: The Daily VM for each ETRF contract is based on the Daily Settlement Price.
  - **BTRF**: The Daily VM for the entire basket is the sum of the individual VM amounts for each ETRF constituent, by taking into consideration the volume of each ETRF open position included in the respective basket (i.e. Basket ID level).

Default Management Process

(DMP)

- In case of a member default, the handling for DMP is that the potential BTRF open positions will be "**decomposed**" into individual constituents and liquidated separately, like "independent" ETRFs.
- In such a case the **entire basket**, for the defaulting as well as for the non-defaulting member, will be **decomposed**.
- For the decomposition **technical trades (to close)** will be send for the respective basket position (offsetting them to zero) and **technical trades (to open)** for the respective „new" ETRF positions.
- These technical trades will be identifiable via the new transaction type „132" (Decomposition).
- As a result, the **non-defaulting counterparties** will retain the individual ETRF positions:
  - The individual ETRF positions resulted from the basket decomposition are still with Eurex Clearing (acting as a central counterparty - CCP).
  - However, the respective ETRFs will no longer be linked to the Basket ID of the baskets that were "dismantled" and liquidated during the DMP process.

Risk Management & Default Management Process (2/2)

Decomposition - example

Position before decomposition

Filter: **Basket ID** **5678**

Account	Open Long	Open Short	Product	Maturity	Basket ID	Position ID
P1	500		TBMW	Dec-20	**5678**	**95632**
P1	1000		TDAI	Dec-20	**5678**	**75236**
P1	500		TVOW	Dec-20	**5678**	**845635**

S 500 TBMW Dec-20 Basket ID 5678 to close for P1 at previous night settl. price; trantyp 132
B 500 TBMW Dec-20 to open for P1 at previous night settl. price trantyp 132

S 1000 TDAI Dec-20 Basket ID 5678 to close for P1 at previous night settl. price trantyp 132
B 1000 TDAI Dec-20 to open for P1 at previous night settl. price trantyp 132

S 500 TVOW Dec-20 Basket ID 5678 to close for P1 at previous night settl. price trantyp 132
B 500 TVOW Dec-20 to open for P1 at previous night settl. price trantyp 132

During the decomposition process technical trades will be booked to

a) Offset the existing position in the respective basket and
b) Open a respective transaction in the single ETRF.

Position post decomposition

Filter: **Basket ID** **5678**

Account	Open Long	Open Short	Product	Maturity	Basket ID	Position ID
~~P1~~	~~500~~	~~500~~	~~TBMW~~	~~Dec-20~~	**~~5678~~**	**~~95632~~**
~~P1~~	~~1000~~	~~1000~~	~~TDAI~~	~~Dec-20~~	**~~5678~~**	**~~75236~~**
~~P1~~	~~500~~	~~500~~	~~TVOW~~	~~Dec-20~~	**~~5678~~**	**~~845635~~**

These positions will automatically be closed out.

Account	Open Long	Open Short	Product	Maturity	Basket ID	Position ID
P1	500		TBMW	Dec-20		**59862**
P1	1000		TDAI	Dec-20		**24568**
P1	500		TVOW	Dec-20		**6115**

New standalone ETRFs (**no** Basket ID) will be booked.

Example: Cross margining benefits with other Eurex products

- From a risk management perspective, Basket TRFs are modelled and margined based on **PRISMA methodology** based on the individual ETRFs constituents. The liquidation group is **Equity** - i.e. **PEQ01 – Listed Equity (Index) Derivatives**.
- Key driver behind the Eurex offering is granting **portfolio margin offsets** between ETRF / BTRF positions and other products included in the Equity liquidation group.
- Example of margin offsets between Eurex **FTSE 100 TRF (TTUK)** vs. **UK ETRF/BTRF**
    - Standalone **Short position in TTUK** (cca. 86.93 million notional): Initial Margin requirement of **5.497%**
    - Standalone **Long position in a portfolio of 69 individual UK ETRFs** (cca. 86.99 million notional): Initial Margin requirement of **6.973%**

STANDALONE POSITIONS (no margin offsets)										
Short 1173 UKX TRF Dec 23 **(TTUK)**										
Liquidation Group Split:		PEQ01_HP3		0.869	Short TRF	TTUK DEC23		Index	Multiplier	Notional
Market Risk:	EUR	5,180,485.84	GBP	4,501,842.19			-1173	7411	10	(86,931,030.00)
Liquidation Addon:	EUR	318,611.14	GBP	276,873.08						
	EUR	5,499,096.98	GBP	4,778,715.28					5.497%	86,931,030.00
Long ETRF Portfolio weighted										
Liquidation Group Split:		PEQ01_HP3		0.869	Long UK ETRF	ETRF PF DEC23				Notional
Market Risk:	EUR	5,410,880.13	GBP	4,702,054.83		Portfolio (69 ETRFs)				86,990,052.23
Liquidation Addon:	EUR	1,569,769.67	GBP	1,364,129.84						
	EUR	6,980,649.80	GBP	6,066,184.68					6.973%	86,990,052.23

- Combined positions between **Short position** in TTUK and Long position UK ETRF/BTRF portfolio: **margin offsets in Prisma** with a net requirement of **only 0.572%**

COMBINED POSITIONS with margin offsets (UKX TRF & UK ETRFs Porftolio)						
Liquidation Group Split:		PEQ01_HP3		0.869		Gross Notional
Market Risk:	EUR	943,099.44	GBP	819,553.41		
Liquidation Addon:	EUR	201,716.34	GBP	175,291.50		
	EUR	1,144,815.78	GBP	994,844.91	0.572%	173,921,082.23

Note: Data as of 7 Nov. 2023

Regulatory Reporting – Eurex interpretation (1/2)

Following the reporting of existing products and current regulation, Eurex understands the transaction reporting requirements for the ETRF/BTRF as follows:

Relevant Regulatory Act	Reporting Requirements at t+1
EMIR Art. 9 *(Systemic risk focus)*	▪ **Transaction reporting of ETRFs traded as a basket (BTRF)** will be done as single legs with final price (i.e. Basket TRF will be broken down into the single legs). The ETRF single legs of the same basket should have a **unique basket identifier** reported in the **EMIR Field 2.14 (Complex Trade Component ID)**. This unique identifier could be either an internal reference of the market participant or alternatively the Eurex Basket ID. ▪ Similarly, **position reporting** of a basket is also done separately (line-by-line for each ETRF), and each open position should also have a **unique basket identifier** in field EMIR 2.14. **Example:** ○ An open basket has 3 legs (TALV, TSIE, TBMW) with the same unique Basket ID "45678" which corresponds to 3 unique position IDs in C7 clearing system. ○ The 3 position IDs in C7 will be reported line-by-line with the Basket ID included in the EMIR Field 2.14 **Note** that the same ETRF product can be included in multiple open baskets, each with a unique position ID. **Example:** ○ An ETRF (e.g. TALV) can be included in 3 separate baskets with 3 unique **Basket IDs**. In the C7 clearing system this entails the creation of 3 corresponding unique **Position IDs**. ○ If TALV product has 100 contracts long in each basket, then the position reporting will be done separately for each individual unique Position ID from C7. ○ In total, 3 separate long positions of 100 contracts with TALV will be reported – each with different Basket IDs in EMIR Field 2.14.
MIFIR (MIFID II) Art. 26 *(Trading Focus)*	▪ **Transaction reporting of ETRFs traded as a basket (BTRF)** will be done as single legs with final price (i.e. Basket TRF will be broken down into the single legs). The ETRF single legs of the same basket should have a **unique basket identifier** reported in the **MiFIR Field 40* (Complex Trade Component ID).** This unique identifier could be either an internal reference of the market participant or alternatively the Eurex Basket ID. ▪ **Example**: ○ An executed BTRF trade has 2 legs (TALV and TSIE) and the unique Basket ID is "12345" ○ Each individual ETRF leg trade is reported with the associated Basket ID in the "**Field 40**": • **TALV** trade is reported with "Field 40" = 12345 • **TSIE** trade is reported with "Field 40" = 12345 (same Basket ID for both ETRF products)

* **Note**: Article 12 of the RTS 22 Regulatory Technical Standards on MiFIR transaction reporting – "COMMISSION DELEGATED REGULATION (EU) 2017/590 of 28 July 2016 supplementing Regulation (EU) No 600/2014 of the European Parliament and of the Council with regard to regulatory technical standards for the reporting of transactions to competent authorities" states the following:
*"Article 12 **Reporting of an execution for a combination of financial instruments***
Where an investment firm executes a transaction involving two or more financial instruments, the investment firm shall report the transaction for each financial instrument separately and shall link those reports by an identifier that is unique at the level of the firm to the group of transaction reports related to that execution as specified in field 40 of Table 2 of Annex I."
Eurex Disclaimer: Field 40 is the "**Complex trade component ID**". Eurex interpretation of this regulation is that the **strategy link ID** is put into field 40 (in case of strategies) and a **unique basket identifier** (either an internal reference or Eurex **Basket ID,** in case of ETRFs traded as part of a BTRF). However, any binding regulatory advice can only be given by ESMA or a National Competent Authority (e.g. BaFin).

Regulatory Reporting – Eurex interpretation (2/2)

Additional information on regulatory reporting:

- **Regulatory reporting of price – trading notation (basis points) vs. clearing notation (EUR / index points)**
  - Eurex Clearing does the transaction reporting for EMIR based on the price in clearing notation from C7 clearing system. The data for the transaction reporting comes out of C7 clearing system as Eurex Clearing has the reporting obligation. Therefore, in the case of Index TRFs the price reported is the **clearing price in index points** and in the case of Equity TRFs is the **clearing price in EUR**.
  - Eurex Clearing has a very special MIFIR reporting obligation, which is different from the MIFIR obligations of Eurex members.
- **Reporting of trading venue MIC:** Eurex always use XEUR for MiFIR reporting and assumption is that Eurex members would also have to use XEUR for bilateral or broker trades.
- **DISCLAIMER**: The above represents Eurex interpretation on regulatory reporting. Any binding regulatory advice can only be given by ESMA or a National Competent Authority (e.g. BaFin).

Eurex reports:

- **T7 reports which include the Basket ID for BTRFs (T7_XML_Report_Reference_Manual -** T7110.3.3_Rep_Public.pdf (eurex.com))
  - **TE810 (T7 Daily Trade Confirmation)** for the derivatives market includes the Basket ID field and all trades coming from a basket execution. All basket trades are reported, like any other trades.
  - Other Eurex reports which include the Basket ID for BTRFs:
    - **TE545 - Daily TES Maintenance**
    - **TE546 – Daily Basket TES Maintenance** (note: this report includes also the Profile and Bucket information).

- **Clearing Reports which include the Basket ID:**
  - CB012 “Account statement”
  - CB715 “Detailed Account statement”
  - CB730 “Position Transfer Summary”
  - CB750 “Give-Up Trades Overview”
  - CB751 “Take-Up Trades Overview”
  - CA752 “Capital Adjustment Position Overview”
  - CB731 “Settling Futures Position Overview

ETRF / BTRF - Pricing Approach (1/3)

Main Principles

- Fees charged based on underlying product currency (Phase 1: EUR).
- ETRF and BTRF transaction, cash settlement and maintenance fee will be based on **notional value**.
- The fees will be calculated and reported **per individual ETRF**. Additionally, a new monthly fee statement report will be introduced, which provides an aggregated view for BTRF.
- The fee levels are available in Attachment 3 from the Eurex Circular 095/2019

Transaction Fee

- The transaction fee for ETRF is defined as a percentage of the notional value: Official closing price from the prior trading day of the underlying is used for **TAC** and **TAM** trades (so that they do not differ)

$$\text{Transaction fee} = \text{volume} \times \text{contract size} \times \text{official closing price of underlying share} \times \text{fee level (\%)}$$

- The transaction fee level for ETRFs for **M and P accounts** is **0.0003%** (i.e. **0.03 bps** or 3 EUR per 1 million EUR notional).
- More information on the fee levels for ETRF/BTRF is included in the following:

Product / Product Group	Currency	Execution Type	Accounts	Standard Fee per Contract (contract volume ≤ threshold)	Reduced Fee per Contract (contract volume > threshold)	Threshold (number of contracts)
Equity Total Return Futures with Group ID assigned in Annex G of the Eurex Contract Specifications						
AA40, AA41, AX40, AX41, BA40, BA41, BX40, BX41	The transaction fee per contract for Equity Total Return Futures is defined as a percentage of the contract value, i.e. the following percentage multiplied by the contract size multiplied by the underlying equity price. The underlying equity price is the official closing price of the underlying share on the relevant primary Cash Market on the respective trade day.					
	EUR	Order book	A	0.0006%	n. a.	n. a.
			P	0.0003%	n. a.	n. a.
			M	0.0003%	n. a.	n. a.
		TES	A	0.0006%	n. a.	n. a.
			P	0.0003%	n. a.	n. a.
			M	0.0003%	n. a.	n. a.

- **Note:** The transaction fee for **SX5E Index TRF** (TESX) is **EUR 0.64 per contract** for **M and P accounts** (orderbook and TES), which is approx. **0.12 bps** (i.e. [0.64 / (5,290 * 10)] * 10,000)

ETRF / BTRF - Pricing Approach (2/3)

Maintenance Fee

The maintenance fee for ETRF is defined as a percentage of the notional value:

$$\text{Maintenance Fee} = \sum_{t=1}^{n} \text{open positions}_t \times \text{contract size} \times \text{official closing price of undelying share}_{t-1} \times \text{fee level (\%)}$$

Where:

t = respective day in the month for the open position taken into consideration
t-1 = prior day before the calculation respective day in the month
n = number of days in the month

Maintenance fee for P and M account of **0.000012% daily** (i.e. **0.438 bps** per annum). Example below for EUR denominated ETRFs:

Product / Product group	Currency	Accounts	Fee per Contract
Equity Total Return Futures with Group ID assigned in Annex G of the Eurex Contract Specifications			
AA40, AA41, AX40, AX41, BA40, BA41, BX40, BX41	The maintenance fee per contract for Equity Total Return Futures is defined as a percentage of the contract value, i.e. the following percentage multiplied by the contract size multiplied by the underlying equity price. The underlying equity price is the official closing price of the underlying share on the relevant primary Cash Market on the previous trade day.		
	EUR	A	0.000024%
		P/M	0.000012%

<u>**Note**</u>: Daily Standard Fee per contract fee for **SX5E Index TRF** (TESX) is:

- **EUR 0.002** (A/P account) (approx. **0.14 per annum** = [(0.002 * 365) / 52,900] * 10,000)
- **EUR 0.0015** (M account) (approx. **0.1 bps per annum** = [(0.0015 * 365) / 52,900] * 10,000)

ETRF / BTRF - Pricing Approach (3/3)

Cash Settlement Fee

- The cash settlement for ETRF is defined as a percentage of the notional value:

$$\text{Cash settlement Fee} = \text{cash settled volume} \times \text{contract size} \times \text{official closing price of underlying share} \times \text{fee level (\%)}$$

- The cash settlement level for ETRF:
  - **0.0006%** for A account
  - **0.0003%** for P/M account
- **Note**: The Cash Settlement fee for **SX5E Index TRF** (TESX) is **0.64 EUR per contract**.

Incentive Schemes

- Liquidity Provision (LP) are potentially envisaged in the future based on a package of ETRF and Collateral Index TRF (schemes to be determined):
  - LP requirements should be measured based on limit orders or two-way quotes entered on the M account.
  - LP rebates will be applied on individual ETRF level, regardless if standalone or part of basket (i.e. per product code), on the transactions executed on the M account.
- Revenue share scheme may be offered (similar to existing TESX – e.g. fulfillment on LP scheme and taking into consideration also the P-account).

ETRF / BTRF – Examples

Matching / Registration of Derivatives Transactions Fee

Member ID	Product	Trade type	Account	Volume	Contract size *	Previous Day's Official closing price of the underlying share	Custom defined price	Fee level	Fee
ABCLO	ETRF_A	TAC	P1	1000	100	5	--	**0.0003%**	**1.50 €**
ABCLO	ETRF_B	TAC	P1	500	100	10	--	**0.0003%**	**1.50 €**
ABCLO	ETRF_A	TAM	P1	1000	100	5	4.95	**0.0003%**	**1.50 €**
ABCLO	ETRF_B	TAM	P1	500	100	10	10.05	**0.0003%**	**1.50 €**

Maintenance Fee

Date	Member ID	Product	Account	END-of-day long open positions	END-of-day short open positions	END-of-day open positions		Contract size		Previous Day's Official closing price of the underlying share		END-of-day notional values of the open positions
19/09/2018	ABCLO	ETRF_A	P1	1,820	1,000	2,820		100		5.00		1,410,000
20/09/2018	ABCLO	ETRF_A	P1	1,820	1,000	2,820	✖	100	✖	4.95	=	1,395,900
21/09/2018	ABCLO	ETRF_A	P1	1,820	1,000	2,820		100		4.90		1,381,800
22/09/2018	ABCLO	ETRF_A	P1	1,820	1,000	2,820		100		4.93		1,390,260
23/09/2018	ABCLO	ETRF_A	P1	1,820	1,000	2,820		100		4.95		1,395,900
24/09/2018	ABCLO	ETRF_A	P1	1,820	1,000	2,820		100		4.98		1,404,360
25/09/2018	ABCLO	ETRF_A	P1	1,820	1,000	2,820		100		5.20		1,466,400
26/09/2018	ABCLO	ETRF_A	P1	1,820	1,000	2,820		100		5.30		1,494,600
27/09/2018	ABCLO	ETRF_A	P1	1,820	1,000	2,820		100		5.10		1,438,200
28/09/2018	ABCLO	ETRF_A	P1	1,820	1,000	2,820		100		5.00		1,410,000
29/09/2018	ABCLO	ETRF_A	P1	182	100	282		100		4.90		138,180
30/09/2018	ABCLO	ETRF_A	P1	182	100	282		100		4.93		139,026
Sum						**28,764**						**14,464,626**

✖ **Fee level** 0.000012% ➡ **Fee** 1.74 €

EUREX Architects of trusted markets

Contact

Stuart Heath
Equity & Index Product Design

Tel: +44 (0) 207 8 62 72 -53
stuart.heath@eurex.com

Elena Marchidann
Equity & Index Product Design

Tel: +44 (0) 207 8 62-72 65
elena.marchidann@eurex.com

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