

INDEX GUIDELINE

SOLACTIVE MULTI ANLAGE STABIL INDEX

Version 1

2020 June 5th



TABLE OF CONTENTS

Introduction	3
1. Index Specifications	4
1.1. Scope of the Index	4
1.2. Identifiers and Publication	4
1.3. Initial Level of the Index	4
1.4. Prices and calculation frequency	4
1.5. Licensing.....	5
2. Index Selection	6
2.1. Index Universe Requirements.....	6
2.2. Selection of the Index Components	7
2.3. Weighting of the Index Components.....	12
3. Rebalance	13
3.1. Ordinary Rebalance	13
3.2. Extraordinary Rebalance	14
4. Calculation of the Index	15
4.1. Index formula	Error! Bookmark not defined.
4.2. Accuracy	19
4.3. Adjustments.....	20
4.4. Corporate actions	20
4.5. Recalculation.....	21
4.6. Market Disruption	21
5. Miscellaneous	22
5.1. Discretion	22
5.2. Methodology Review.....	22
5.3. Changes in calculation method.....	23
5.4. Termination	23
5.5. Oversight	23
6. Definitions.....	24
Contact.....	28



INTRODUCTION

This document (the "GUIDELINE") is to be used as a guideline with regard to the composition, calculation and maintenance of the Solactive Multi Anlage Stabil Index (the "INDEX"). Any amendments to the rules made to the GUIDELINE are approved by the OVERSIGHT COMMITTEE specified in Section 5.5. The INDEX is [owned,] calculated, administered and published by Solactive AG ("SOLACTIVE") assuming the role as administrator (the "INDEX ADMINISTRATOR") under the Regulation (EU) 2016/1011 (the "BENCHMARK REGULATION" or "BMR"). The name "Solactive" is trademarked.

The text uses defined terms which are formatted with "SMALL CAPS". Such Terms shall have the meaning assigned to them as specified in Section 6 (Definitions).

The GUIDELINE and the policies and methodology documents referenced herein contain the underlying principles and rules regarding the structure and operation of the INDEX. SOLACTIVE does not offer any explicit or tacit guarantee or assurance, neither pertaining to the results from the use of the INDEX nor the level of the INDEX at any certain point in time nor in any other respect. SOLACTIVE strives to the best of its ability to ensure the correctness of the calculation. There is no obligation for SOLACTIVE – irrespective of possible obligations to issuers – to advise third parties, including investors and/or financial intermediaries, of any errors in the INDEX. The publication of the INDEX by SOLACTIVE does not constitute a recommendation for capital investment and does not contain any assurance or opinion of SOLACTIVE regarding a possible investment in a financial instrument based on this INDEX.



1. INDEX SPECIFICATIONS

1.1. SCOPE OF THE INDEX

The INDEX aims to track the performance of a basket of future that cover a broad range of asset classes and geographical regions. A volatility target overlay is applied in order to achieve a specified volatility level.

The weights of each INDEX COMPONENT is determined once a week on the SELECTION DAY. The weights are chosen such that the resulting portfolio has the highest possible historic return while not exceeding a pre-specified level of risk (measured as the volatility of the portfolio).

The INDEX is calculated in EUR.

1.2. IDENTIFIERS AND PUBLICATION

The INDEX is published under the following identifiers:

Name	ISIN	Currency	Type	RIC	BBG ticker
SOLACTIVE MULTI ANLAGE STABIL INDEX	DE000SLOA3G4	EUR	ER	.SOMAS	SOMAS Index

The INDEX is published on the website of the INDEX ADMINISTRATOR (www.solactive.com) and is, in addition, available via the price marketing services of Boerse Stuttgart GmbH and may be distributed to all of its affiliated vendors. Each vendor decides on an individual basis as to whether it will distribute or display the INDEX via its information systems.

Any publication in relation to the INDEX (e.g. notices, amendments to the GUIDELINE) will be available at the website of the INDEX ADMINISTRATOR: <https://www.solactive.com/news/announcements/>.

1.3. INITIAL LEVEL OF THE INDEX

The initial level of the INDEX on the START DATE is 100. Historical values from the LIVE DATE will be recorded in accordance with Article 8 of the BMR. Levels of the INDEX published for a period prior to the LIVE DATE have been back-tested

1.4. PRICES AND CALCULATION FREQUENCY

A closing level of the INDEX for each CALCULATION DAY is calculated. This closing level is based on the REFERENCE PRICES for the INDEX COMPONENTS on the respective EXCHANGES on which the INDEX COMPONENTS are



listed. The REFERENCE PRICES of INDEX COMPONENTS not listed in the INDEX CURRENCY are converted using the 4pm New York time WM Fixing quoted by Reuters in accordance with Section 2.2. If there is no 4pm New York time WM Fixing for the relevant CALCULATION DAY, the last available 4pm New York time WM Fixing will be used for the closing level calculation.

1.5. LICENSING

Licenses to use the INDEX as the underlying value for financial instruments, investment funds and financial contracts may be issued to stock exchanges, banks, financial services providers and investment houses by SOLACTIVE.



2. INDEX SELECTION

On each SELECTION DAY, the INDEX ADMINISTRATOR will revise the composition of the INDEX.

In a first step, the INDEX ADMINISTRATOR determines the INDEX UNIVERSE in accordance with Section 2.1. The INDEX UNIVERSE comprises all those financial instruments which fulfill the INDEX UNIVERSE REQUIREMENTS (as specified in Section 2.1) and will constitute a starting pool from which the components of the INDEX will be selected. Based on this INDEX UNIVERSE, the new composition of the INDEX will be determined by applying the rules outlined in Section 2.2.

Each new INDEX COMPONENT will be assigned a weight as described in Section 2.3 and is included the current composition of the INDEX according to the procedure outlined in Section 3.1.

2.1. INDEX UNIVERSE REQUIREMENTS

The INDEX UNIVERSE is comprised of all financial instruments (the INDEX COMPONENTS) listed below:

Rolling Exposure to	RIC	Exchange	Max weight change
Eurex EURO STOXX 50 Index Future	STXE	Eurex	12%
CBoT US Treasury 2Y Future	TU	CBoT	12%
CBoT US Treasury 5Y Future	FV	CBoT	12%
CBoT US Treasury 10Y Future	TY	CBoT	12%
Eurex Euro Bund Bond Future	FGBL	Eurex	12%
Eurex Euro BOBL Bond Future	FGBM	Eurex	12%
Eurex Euro Schatz Bond Future	FGBS	Eurex	12%
COMEX Gold Composite Commodity Future	GC	COMEX	4%
S&P 500 E-Mini Index Future	ES	CME	12%



2.2. SELECTION OF THE INDEX COMPONENTS

Based on the INDEX UNIVERSE, the initial composition of the INDEX as well as any selection is determined on the SELECTION DAY t_S in accordance with the following rules:

Let $FTL_{i,t}^{EUR}$ denote the hedged FUTURES TRACKER INDEX Level of INDEX COMPONENT i as of CALCULATION DAY t .

For INDEX COMPONENTS which are denominated in USD, $FTL_{i,t}^{EUR}$ is calculated according to:

$$FTL_{i,t}^{EUR} = FTL_{i,t-1}^{EUR} * \left(1 + \left(\frac{FTL_{i,t}}{FTL_{i,t-1}} - 1 \right) * \frac{FX_t}{FX_{t-1}} \right)$$

Where:

FX_t is the WMCO 4pm New York¹ fixing to convert one unit of USD to EUR as of CALCULATION DAY t

FX_{t-1} is the WMCO 4pm New York² fixing to convert one unit of USD to EUR as of CALCULATION DAY $t-1$

For INDEX COMPONENTS which are denominated in the EUR:

$$FTL_{i,t}^{EUR} = FTL_{i,t-1}^{EUR} * \left(1 + \left(\frac{FTL_{i,t}}{FTL_{i,t-1}} - 1 \right) \right)$$

Where:

$FTL_{i,t}$: The level of the FUTURES TRACKER INDEX for INDEX COMPONENTS i as of CALCULATION DAY t

$FTL_{i,t-1}$: The level of the FUTURES TRACKER INDEX for INDEX COMPONENTS i as of CALCULATION DAY $t-1$

If CALCULATION DAY t is not a Local Trading Day for the FUTURES TRACKER INDEX, the level of the FUTURES TRACKER INDEX as of CALCULATION DAY $t-1$ is filled forward

Define the return of the FUTURES TRACKER INDEX Level of INDEX COMPONENT i as of CALCULATION DAY t as

$$r_{i,t} = \frac{FTL_{i,t}^{EUR}}{FTL_{i,t-1}^{EUR}} - 1$$

Define the correlation matrix as of CALCULATION DAY t as **Correlation_t**. A generic element of this matrix at position (i,j) is calculated as :

¹ The 4pm London fixings have been used to calculate the backtest prior to the FUTURES TRACKER LIVE DATE.

² See foot note 1



$$\text{Correlation}_t^{i,j} = \frac{\sum_{k=0}^{n-1} (r_{i,t-k} - \bar{r}_{i,t}) * (r_{j,t-k} - \bar{r}_{j,t})}{\sqrt{\sum_{k=0}^{n-1} (r_{i,t-k} - \bar{r}_{i,t})^2} \sqrt{\sum_{k=0}^{n-1} (r_{j,t-k} - \bar{r}_{j,t})^2}}$$

Where $r_{i,t-k}$ is the return of the FUTURES TRACKER INDEX Level of INDEX COMPONENT i as of CALCULATION DAY t-k, $r_{j,t-k}$ is the return of the FUTURES TRACKER INDEX Level of INDEX COMPONENT j as of CALCULATION DAY t-k.

n is the look back period of 180 CALCULATION DAY.

\bar{r}_i is the average return of the FUTURES TRACKER INDEX Level of INDEX COMPONENT i over the relevant period, and is defined as follows (and analogously for \bar{r}_j):

$$\bar{r}_i = \frac{1}{n} * \sum_{k=0}^{n-1} r_{i,t-k}$$

Define the variance vector as of CALCULATION DAY t as Variance_t . A generic element of this vector at position (i) is calculated as the maximum of the 60-day and 90-day variance:

$$60dvar_t^i = \frac{252}{60-1} * \sum_{k=0}^{59} (r_{i,t-k} - \bar{r}_i) * (r_{j,t-k} - \bar{r}_j)$$

$$90dvar_t^i = \frac{252}{90-1} * \sum_{k=0}^{89} (r_{i,t-k} - \bar{r}_i) * (r_{j,t-k} - \bar{r}_j)$$

$$\text{Variance}_t^i = \max(60dvar_t^i, 90dvar_t^i)$$

Define the covariance matrix as of CALCULATION DAY t as Σ_t . A generic element of this matrix at position (i,j) is calculated as:

$$\Sigma_t^{i,j} = \sqrt{\text{Variance}_t^i * \text{Variance}_t^j * \text{Corr}_t^{i,j}}$$

Define the momentum vector as of CALCULATION DAY t as $R_t = [R_{1,t}, R_{2,t}, \dots, R_{9,t}]$, where each $R_{i,t}$ is calculated as:



$$R_{i,t} = \frac{FTL_{i,t}^{EUR}}{FTL_{i,t-n}^{EUR}} - 1$$

Where:

n : The return look back period of 180 CALCULATION DAYS.

The vector of optimal weights $w_{t_S} = [w_{1,t_S}, w_{2,t_S}, \dots, w_{9,t_S}]$ as determined on the SELECTION DAY t_S is the solution to the following optimization problem:

$$\begin{aligned} & \max_w w_{t_S} * R'_t \\ & 0 \leq \sum_{i=1}^9 w_{i,t_S} \leq 2 \\ & \sqrt{w_{t_S} \Sigma_{t_S} w'_{t_S}} \leq targetVol \\ & 0 \leq w_{i,t_S} \leq 0.6 \text{ for } i \in \{1, 2, 3, 4, 5, 6, 7, 9\} \\ & 0 \leq w_{8,t_S} \leq 0.2 \end{aligned}$$

Where *targetVol* equals 4.5%.

The optimal weights therefore constitute the portfolio with the highest weighted momentum, such that the volatility of the portfolio is less than 4.5%, and such that no underlying other than Gold receives more than 60%, and Gold receives at most 20%.

The optimal weights are adjusted to reflect that only a certain amount of the underlying constituents can be traded each day.

The target weights are derived from the optimal weights to take this restriction into account.

For each of the nine INDEX COMPONENTS, a cap and floor is calculated according to the following formulae:

$$\begin{aligned} cap_{i,t} &= \min(\max_weight_i, W_{i,t-1}^{Target} + \max_change_i) \\ floor_{i,t} &= \max(0, W_{i,t-1}^{Target} - \max_change_i) \end{aligned}$$

Where \max_weight_i is the weight cap as used in the optimization (0.6 for all underlyings except Gold, which has 20%), and \max_change_i is the maximal amount the target weight is allowed to change on a daily basis (according to Section 2.1)



The optimal weights w_{t_S} remain unchanged between SELECTION DAY t_S (including) and the following SELECTION DAY (excluding).

The target weight of INDEX COMPONENT i as of CALCULATION DAY t is then calculated as follows:

If CALCULATION DAY $t+2$ is a holiday for INDEX COMPONENT i , the target weights does not change from the previous CALCULATION DAY:

$$W_{i,t}^{Target} = W_{i,t-1}^{Target}$$

If CALCULATION DAY $t+2$ is a not a holiday for INDEX COMPONENT i , then the following calculations are performed.

If $floor_{i,t} \leq w_{i,t_S} \leq cap_{i,t}$:

$$W_{i,t}^{Target} = w_{i,t_S}$$

If $w_{i,t} < floor_{i,t}$:

$$W_{i,t}^{Target} = floor_{i,t}$$

If $w_{i,t} > cap_{i,t}$

$$W_{i,t}^{Target} = cap_{i,t}$$

The target weights as of the Index START DATE is set to 0.

The final weights are derived from the target weights according to the following set of rules:

If CALCULATION DAY $t+2$ is not a LOCAL TRADING DAY for INDEX COMPONENT i (in accordance with the MIC provided in Table 1 in the Appendix), the target weights does not change from the previous CALCULATION DAY:

$$W_{i,t}^{final} = W_{i,t-1}^{final}$$

If CALCULATION DAY $t+2$ is a LOCAL TRADING DAY for INDEX COMPONENT i , then the following calculations are performed.



$$W_{i,t}^{final} = Exposure_t * W_{i,t}^{Target}$$

The final weights as of the Index START DATE is set to 0.

The exposure as of CALCULATION DAY t, *Exposure_t*, is calculated based on the target weights. It is determined according to the following set of equations.

$$Exposure_t = Exposure_{t-1} + \min \left(25\%, \max \left(-25\%, \min \left(100\%, \frac{targetVol}{\max_{t-(look_back_vt-1) \leq s \leq t} VolBasket_{t,s}} \right) - Exposure_{t-1} \right) \right)$$

Where:

look_back_vt: The look back period for the volatility calculation which equals 20

VolBasket_{t,s}: The volatility of the hypothetical Basket, which is calculated according:

$$VolBasket_{t,s} = \sqrt{252 * \frac{look_back_vt}{look_back_vt - 1} * \left[\left(\frac{1}{look_back_vt} * \sum_{k=0}^{look_back_vt-1} (\ln(Basket_{t,s-k}))^2 \right) - \left(\frac{1}{look_back_vt} * \sum_{k=0}^{look_back_vt-1} \ln(Basket_{t,s-k}) \right)^2 \right]}$$

Where:

$$Basket_{t,s} = 1 + \sum_{i=1}^9 W_{i,t}^{Target} * \left(\frac{FLT_{i,s}^{EUR}}{FLT_{i,s-1}^{EUR}} - 1 \right)$$

The selection of the INDEX COMPONENTS is fully rule-based and the INDEX ADMINISTRATOR has no discretion.



2.3. WEIGHTING OF THE INDEX COMPONENTS

Each INDEX COMPONENT is weighted according to the final weights as determined in Section 2.2 in order to achieve the aim of the INDEX.



3. REBALANCE

3.1. ORDINARY REBALANCE

In order to reflect the new selection of the INDEX COMPONENTS determined on the SELECTION DAY (in accordance with Section 2.1 and 2.2) the INDEX is adjusted on each CALCULATION DAY according to the following steps.

The final weights as determined in Section 2.2. are first translated to target quantities, considering the tradability of the respective INDEX COMPONENT and taking into account the maximum daily weight change.

The target quantities are determined as follows:

If CALCULATION DAY $t+2$ is not a LOCAL TRADING DAY for INDEX COMPONENT i (in accordance with the MIC provided in Table 1 in the Appendix), then the target quantities remain unchanged from the previous CALCULATION DAY $t-1$:

$$q_{i,t}^{target} = q_{i,t-1}^{target}$$

If CALCULATION DAY $t+2$ is a LOCAL TRADING DAY for INDEX COMPONENT i , then the target quantities are calculated according to the following set of formulae:

$$q_{i,t}^{target} = W_{i,t}^{final} * \frac{Index_t}{FTL_{i,t}^{EUR}}$$

The quantities which are finally used in the determination of the index level are based on the target quantities by respecting tradability of the respective index component:

If CALCULATION DAY t is not a LOCAL TRADING DAY for INDEX COMPONENT, then the final quantities remain unchanged:

$$q_{i,t}^{final} = q_{i,t-1}^{final}$$

If CALCULATION DAY t is LOCAL TRADING DAY for INDEX COMPONENT i , then the final quantities are set to be equal to the target quantities from two Calculation Days prior to CALCULATION DAY t :

$$q_{i,t}^{final} = q_{i,t-2}^{target}$$



3.2. EXTRAORDINARY REBALANCE

[The INDEX is not rebalanced extraordinarily.]



4. CALCULATION OF THE INDEX

The INDEX uses the final quantities as determined in Section 3.1., considering the replication and rebalancing costs as outlined in the table below:

Future	BaseRIC	RebalancingCost	ReplicationCost
Eurex EURO STOXX 50 Index Future	STXE	0.0003	0.0015
US Treasury 2Y	TU	0.0002	0.0008
US Treasury 5Y	FV	0.0001	0.0005
US Treasury 10Y	TY	0.0001	0.0005
Eurex Euro Bund Bond Future	FGBL	0.0001	0.0005
Eurex Euro BOBL Bond Future	FGBM	0.0001	0.0005
Eurex Euro Schatz Bond Future	FGBS	0.0001	0.0005
COMEX Gold Composite Commodity Future	GC	0.0005	0.0017
S&P 500 E-Mini Index Future	ES	0.0002	0.0015

4.1. INDEX FORMULA

The Index is calculated according to the following formula:

$$Index_t = Index_{t-1} + \sum_{i=1}^9 q_{i,t-1}^{final} * (FTL_{i,t}^{EUR} - FTL_{i,t-1}^{EUR}) - Costs_t$$

Where $Costs_t$ is calculated according to the following formula:

$$Costs_t = \sum_{i=1}^9 q_{i,t-1}^{final} * FTL_{i,t-1}^{EUR} * repli_cost_i * \frac{DC_{t,t-1}}{365} + |q_{i,t-1}^{final} - q_{i,t-2}^{final}| * FTL_{i,t-1}^{EUR} * rebal_cost_i$$

With:

$repli_cost_i$: The replication costs for INDEX COMPONENT i

$rebal_cost_i$: The rebalancing (or execution) costs for INDEX COMPONENT i

$DC_{t,t-1}$: The number of calendar days from (but excluding) CALCULATION DAY t-1 to (and including) CALCULATION DAY t

$|x|$: The absolute value of x



4.2. CONSTRUCTION OF FUTURE TRACKER INDEX LEVELS

The FUTURE TRACKER INDEX for each of the 9 INDEX COMPONENT listed in Section 2.1. are calculated based on the following rules:

Each FUTURE TRACKER INDEX rolls the respective exposure from the front contract to the back contract on a predefined date. The roll is implemented over a certain number of days (denoted as #ROLL DAYS) prior to the futures contracts REFERENCE DATE. Each FUTURE TRACKER INDEX except the COMEX Gold Composite Commodity is using TWAPs (time weighted average prices), while the calculation for COMEX Gold Composite Commodity future uses settlement prices.

The TWAP START TIMES and TWAP END TIMES (subject to the provisions in the following sections) as well as all other parameters can be found in the Table 1 in the Appendix:

Each FUTURE TRACKER INDEX FLT_i is calculated according to the following methodology:

On each LOCAL TRADING DAY t , the level of the Futures Tracker Index (except the COMEX Gold Composite Commodity) is calculated as a sum product of the Price of the Active Contract and the respective number of shares.

$$FLT_{i,t} = NOSH_{i,t-1} * P_{i,t}^A$$

Where:

FLT_t : The level of the i -th Future Tracker as of LOCAL TRADING DAY t

P_t^A : The TWAP of the Active contract as of LOCAL TRADING DAY t

$NOSH_{t-1}$: The number of shares as determined on LOCAL TRADING DAY $t-1$

Where:

On the FUTURES TRACKER INDEX START DATE:

$$NOSH_{i,t_0} = \frac{100}{P_{i,t_0}^A}$$

On each LOCAL TRADING DAY following the FUTURES TRACKER INDEX START DATE:

If t is the Roll Start Day (in accordance with Table 1):

$$NOSH_{i,t} = \frac{FLT_{i,t}}{P_{i,t}^{NA}}$$



Where:

P_t^{NA} : The TWAP of the Next Active Contract LOCAL TRADING DAY t.

On all LOCAL TRADING DAYS which are not the Roll Start Date, the number of shares remain unchanged:

$$NOSH_{i,t} = NOSH_{i,t-1}$$

The Active Contract on LOCAL TRADING DAY t is defined as:

If LOCAL TRADING DAY t is prior or equal to the Roll Start Day, the Active Contract is the front contract (according to Table 1 in the Appendix)

If LOCAL TRADING DAY t falls after the Roll Start Date in a month where a roll is performed, the Active Contract is the front contract of the of the following month (according to Table 1 in the Appendix)

Therefore, the Next Active Contract becomes the Active Contract on the LOCAL TRADING DAY following the Roll Start Day.

Prior to the respective FUTURES TRACKER LIVE DATE, the respective Futures Tracker was calculated using settlement prices.

In the following, the term “Futures Tracker” will refer to the COMEX Gold Composite Commodity.

The exposure of the FUTURES TRACKER INDEX is adjusted over 5 consecutive LOCAL TRADING DAYS (denoted as the Roll Period). The Roll Period starts on the 5th LOCAL TRADING DAY of the month.

If LOCAL TRADING DAY t is earlier than or equal to the first LOCAL TRADING DAY of the Roll Period, the Futures Tracker Index is calculated as:

$$FLT_{i,t} = NOSH_{i,t-1}^A * P_{i,t}^A$$

Where:

$NOSH_{i,t-1}^A$: The number of shares of the Active Contract as of LOCAL TRADING DAY t-1

P_t^A : The price of the Active Contract as of LOCAL TRADING DAY t

On the FUTURES TRACKER INDEX START DATE:

$$NOSH_{i,t_0}^A = \frac{100}{P_{i,t_0}^A}$$

On each LOCAL TRADING DAY which is not within the Roll Period:

$$NOSH_{i,t}^A = NOSH_{i,t-1}^A$$



That is, the number of shares in the Active Contract remain unchanged.

If LOCAL TRADING DAY t falls within the second to fifth day of the Roll Period, the Futures Tracker Index is calculated according to the following formula:

$$FLT_{i,t} = NOSH_{i,t-1}^A * P_{i,t}^A + NOSH_{i,t-1}^{NA} * P_{i,t}^{NA}$$

Where:

$NOSH_{i,t-1}^A$: The number of shares in the Active Contract as determined on LOCAL TRADING DAY $t-1$

$NOSH_{i,t-1}^{NA}$: The number of shares in the Next Active Contract as determined on LOCAL TRADING DAY $t-1$

$P_{i,t}^A$: The price of the Active contract as of LOCAL TRADING DAY t

$P_{i,t}^{NA}$: The price of the Next Active Contract on LOCAL TRADING DAY t .

For the avoidance of doubt, on the LOCAL TRADING DAY immediately following the last day of the Roll Period, the Index will use the units of the (then) Active Contract, which equals the units of the Next Active Contract from the previous LOCAL TRADING DAY

The number of shares for the Active Contract and the Next Active Contract are adjusted on each LOCAL TRADING DAY which falls within the roll period:

For each of the five LOCAL TRADING DAYS t which fall within the Roll Period (where j denotes the j -th LOCAL TRADING DAY within the Roll Period):

$$NOSH_{i,t}^A = \frac{FLT_{i,t} * (1 - 0.2 * j)}{P_{i,t}^A * (1 - 0.2 * j) + P_{i,t}^{NA} * 0.2 * j}$$

$$NOSH_{i,t}^{NA} = \frac{FLT_{i,t} * (0.2 * j)}{P_{i,t}^A * (1 - 0.2 * j) + P_{i,t}^{NA} * 0.2 * j}$$

The Active Contract on LOCAL TRADING DAY t is defined as:

If LOCAL TRADING DAY t is prior or equal to the last LOCAL TRADING DAY within the Roll Period, the Active Contract is the front contract (according to Table 1 in the Appendix)



If LOCAL TRADING DAY t falls after the last LOCAL TRADING DAY within the Roll Period in a month where a roll is performed, the Active Contract is the front contract of the of the following month (according to Table 1 in the Appendix)

Therefore, for the avoidance of doubt, the Next Active Contract becomes the Active Contract on the LOCAL TRADING DAY following the last LOCAL TRADING DAY within the Roll Period and the number of shares of the Active Contract become the number of shares of the Next Active Contract as determined on the last LOCAL TRADING DAY within the Roll Period.

4.3. CALCULATION OF THE TWAPS

Each regular price tick j (denoted by $price_j$) which arrives between the TWAP START TIME and TWAP END TIME (as specified in Table 1 in the Appendix) via the ICE consolidated feed from the Intercontinental Exchange, will be used in the calculation of the respective TWAP on LOCAL TRADING DAY t .

A regular price tick is a tick which is associated with an executed, regular trade. Hence trades without volume (or zero volume) and cancelled trades are excluded from the TWAP calculation as well as block trades.

Let N denote the number of such price ticks, then the TWAP as of LOCAL TRADING DAY t is calculated according to the following formula:

$$TWAP_t = \frac{\sum_{j=1}^N price_j}{N}$$

If the Index Administrator should not receive any price ticks within the TWAP window (the time period between the TWAP START TIME and TWAP END TIME) via the ICE consolidated feed, the Index Administrator will determine the Reference Price the following way:

- 1) Enlarging the TWAP window by 10 minutes and calculate the TWAP in accordance with the above.
- 2) If there are still no ticks in the enlarged TWAP window, the REFERENCE PRICE will be the Settlement Price as of LOCAL TRADING DAY t .

4.4. ACCURACY

The level of the INDEX will be rounded to 2 decimal places.



4.5. ADJUSTMENTS

Under certain circumstances, an adjustment of the INDEX may be necessary between two regular REBALANCE DAYS. Basically, such adjustment is needed to be made if a corporate action (as specified in Section 4.4 below) in relation to an INDEX COMPONENT occurs. Such adjustment may need to be done in relation to an INDEX COMPONENT and/or may also affect the number of INDEX COMPONENTS and/or the weighting of certain INDEX COMPONENTS and will be made in compliance with the Solactive Equity Index Methodology, which is incorporated by reference and available on the SOLACTIVE website: <https://www.solactive.com/documents/equity-index-methodology/>.

4.6. CORPORATE ACTIONS

As part of the INDEX maintenance SOLACTIVE will consider various events – also referred to as corporate actions – which result in an adjustment to the INDEX between two regular REBALANCE DAYS. Such events have a material impact on the price, weighting or overall integrity of INDEX COMPONENTS. Therefore, they need to be accounted for in the calculation of the INDEX. Corporate actions will be implemented from the cum-day to the ex-day of the corporate action, so that the adjustment to the INDEX coincides with the occurrence of the price effect of the respective corporate action.

Adjustments to the INDEX to account for corporate actions will be made in compliance with the Equity Index Methodology, which is available on the SOLACTIVE website: <https://www.solactive.com/documents/equity-index-methodology/>. This document contains for each corporate action a brief definition and specifies the relevant adjustment to the INDEX variables.

While SOLACTIVE aims at creating and maintaining its methodology for treatment of corporate actions as generic and transparent as possible and in line with regulatory requirements, it retains the right in accordance with the Equity Index Methodology to deviate from these standard procedures in case of any unusual or complex corporate action or if such a deviation is made to preserve the comparability and representativeness of the INDEX over time.

SOLACTIVE considers following, but not conclusive, list of corporate actions as relevant for INDEX maintenance:

- > Cash Distributions (e.g. payment of a dividend)
- > Stock distributions (e.g. payment of a dividend in form of additional shares)
- > Stock distributions of another company (e.g. payment of a dividend in form of additional shares of another company (e.g. of a subsidiary))
- > Share splits (company's present shares are divided and therefore multiplied by a given factor)
- > Reverse splits (company's present shares are effectively merged)
- > Capital increases (such as issuing additional shares)



- > Share repurchases (a company offer its shareholders the option to sell their shares to a fixed price)
- > Spin-offs (the issuer of (INDEX COMPONENT) shares splits its business activities into two or more entities and distributes new equity shares in the created entities to the shareholders of the former entity)
- > Mergers & Acquisitions (transaction in which the ownership of a company (or other business organizations) are transferred or consolidated with other entities, e.g. fusion of two or more separate companies into one entity)
- > Delistings (company's shares are no longer publicly traded at a stock exchange)
- > Nationalization of a company (effective control of a legal entity is taken over by a state)
- > Insolvency

4.7. RECALCULATION

SOLACTIVE makes the greatest possible efforts to accurately calculate and maintain its indices. However, errors in the determination process may occur from time to time for variety reasons (internal or external) and therefore, cannot be completely ruled out. SOLACTIVE endeavors to correct all errors that have been identified within a reasonable period of time. The understanding of "a reasonable period of time" as well as the general measures to be taken are generally depending on the underlying and is specified in the Solactive Correction Policy, which is incorporated by reference and available on the SOLACTIVE website: <https://www.solactive.com/documents/correction-policy/>.

4.8. MARKET DISRUPTION

In periods of market stress SOLACTIVE calculates its indices following predefined and exhaustive arrangements as described in the Solactive Disruption Policy, which is incorporated by reference and available on the SOLACTIVE website: <https://www.solactive.com/documents/disruption-policy/>. Such market stress can arise due to a variety of reasons, but generally results in inaccurate or delayed prices for one or more INDEX COMPONENTS. The determination of the INDEX may be limited or impaired at times of illiquid or fragmented markets and market stress.

In addition to the general provisions, a Market Disruption Day will be deemed to have occurred if any of the following events occur:

1. The Settlement Price is not published by the Exchange's scheduled closing time .
2. The Settlement Price is erroneous, in the reasonable judgment of Solactive,

In addition to the above, any event which renders it impossible for any third party to replicate the index or hedge their positions to any of the INDEX COMPONENT in a commercially reasonable manner may be considered as a Market Disruption Day.



If any of these events occur on a non-roll date, the FUTURES TRACKER INDEX will not be published for that LOCAL TRADING DAY and the INDEX will not be published. If any of these events occur on a roll date, the applicable FUTURES TRACKER INDEX will not be published for that that LOCAL TRADING DAY and the portion of the roll that was to take place on the Market Disruption Day will take place on the next non-Market Disruption Day. The INDEX will not be published.

Any changes in units in the INDEX regarding the applicable FUTURES TRACKER INDEX will not be performed.

If the Market Disruption Event continues over a period of eight LOCAL TRADING DAY, then the Committee will determine the necessary action (including but not limited to taking into account the market conditions prevailing at this point in time, the last quoted Prices for each of the Index Components as well as any other conditions that it deems relevant for calculating the Index value) such that the affected securities resulting from the Market Disruption Event are no longer causing such disruption to occur.

5. MISCELLANEOUS

5.1. DISCRETION

Any discretion which may need to be exercised in relation to the determination of the INDEX (for example the determination of the INDEX UNIVERSE (if applicable), the selection of the INDEX COMPONENTS (if applicable) or any other relevant decisions in relation to the INDEX) shall be made in accordance with strict rules regarding the exercise of discretion or expert judgement.

5.2. METHODOLOGY REVIEW

The methodology of the INDEX is subject to regular review, at least annually. In case a need of a change of the methodology has been identified within such review (e.g. if the underlying market or economic reality has changed since the launch of the INDEX, i.e. if the present methodology is based on obsolete assumptions and factors and no longer reflects the reality as accurately, reliably and appropriately as before), such change will be made in accordance with the Solactive Methodology Policy, which is incorporated by reference and available on the SOLACTIVE website: <https://www.solactive.com/documents/methodology-policy/>.

Such change in the methodology will be announced on the SOLACTIVE website under the Section "[Announcement](https://www.solactive.com/news/announcements/)", which is available at <https://www.solactive.com/news/announcements/>. The date of the last amendment of this INDEX is contained in this GUIDELINE.



5.3. CHANGES IN CALCULATION METHOD

The application by the INDEX ADMINISTRATOR of the method described in this document is final and binding. The INDEX ADMINISTRATOR shall apply the method described above for the composition and calculation of the INDEX. However, it cannot be excluded that the market environment, supervisory, legal and financial or tax reasons may require changes to be made to this method. The INDEX ADMINISTRATOR may also make changes to the terms and conditions of the INDEX and the method applied to calculate the INDEX that it deems to be necessary and desirable in order to prevent obvious or demonstrable error or to remedy, correct or supplement incorrect terms and conditions. The INDEX ADMINISTRATOR is not obliged to provide information on any such modifications or changes. Despite the modifications and changes, the INDEX ADMINISTRATOR will take the appropriate steps to ensure a calculation method is applied that is consistent with the method described above.

5.4. TERMINATION

SOLACTIVE makes the greatest possible efforts to ensure the resilience and continued integrity of its indices over time. Where necessary, SOLACTIVE follows a clearly defined and transparent procedure to adapt Index methodologies to changing underlying markets (see Section 5.2 “Methodology Review”) in order to maintain continued reliability and comparability of the indices. Nevertheless, if no other options are available the orderly cessation of the INDEX may be indicated. This is usually the case when the underlying market or economic reality, which an index is set to measure or to reflect, changes substantially and in a way not foreseeable at the time of inception of the index, the index rules, and particularly the selection criteria, can no longer be applied coherently or the index is no longer used as the underlying value for financial instruments, investment funds and financial contracts.

SOLACTIVE has established and maintains clear guidelines on how to identify situations in which the cessation of an index is unavoidable, how stakeholders are to be informed and consulted and the procedures to be followed for a termination or the transition to an alternative index. Details are specified in the Solactive Termination Policy, which is incorporated by reference and available on the SOLACTIVE website: <https://www.solactive.com/documents/termination-policy/>.

5.5. OVERSIGHT

An oversight committee composed of staff from SOLACTIVE and its subsidiaries (the “OVERSIGHT COMMITTEE”) is responsible for decisions regarding any amendments to the rules of the INDEX. Any such amendment, which may result in an amendment of the GUIDELINE, must be submitted to the OVERSIGHT COMMITTEE for prior approval and will be made in compliance with the Methodology Policy, which is available on the SOLACTIVE website: <https://www.solactive.com/documents/methodology-policy/>.



6. DEFINITIONS

"BENCHMARK REGULATION" shall have the meaning as defined in Section "Introduction".

"BMR" shall have the meaning as defined in Section "Introduction".

"CALCULATION DAY" is every weekday from Monday to Friday.

"EXCHANGE" is with respect to the every INDEX COMPONENT, the respective exchange according to Table 1 in the Appendix.

"FUTURES TRACKER INDEX" is, for each INDEX COMPONENT, the time series as described in Section 4.2.

"FUTURES TRACKER INDEX START DATE" is 2nd January 2008.

"FUTURES TRACKER LIVE DATE" is 26th May 2020

"GUIDELINE" shall have the meaning as defined in Section "Introduction".

"INDEX" shall have the meaning as defined in Section "Introduction".

"INDEX ADMINISTRATOR" shall have the meaning as defined in Section "Introduction".

"INDEX COMPONENT" is each security reflected in the INDEX.

"INDEX CURRENCY" is the currency specified in the column "Currency" in the table in Section 1.2.

"INDEX UNIVERSE" is the sum of all financial instruments which fulfill the INDEX UNIVERSE REQUIREMENTS.

"LIVE DATE" is 8th June 2020.

"LOCAL TRADING DAY" is, with respect to a futures contract, each day where the respective EXCHANGE is open for business.

"OVERSIGHT COMMITTEE" shall have the meaning as defined in Section 5.5.

"REFERENCE DATE" is, for each INDEX COMPONENT, the Reference Date according to Table 1 in the Appendix

"REFERENCE PRICE" is, for each INDEX COMPONENT, the Reference Price according to Table 1 in the Appendix

"SELECTION DAY" is the first CALCULATION DAY in each calendar week.

"SOLACTIVE" shall have the meaning as defined in Section "Introduction".

"START DATE" is 15th September 2008.

"TWAP START TIME" is, for each INDEX COMPONENT, the TWAP start according to Table 1 in the Appendix.

"TWAP END TIME" is, for each INDEX COMPONENT, the TWAP end according to Table 1 in the Appendix.



Table 1: Overview Futures Tracker Indices

Base RIC	Roll start	# roll days	Reference Date	TWAP start	TWAP end	Reference Price	Exchange MIC
STXE	3 LOCAL TRADING DAYS before Reference Date	1	Last Trade	17:25:00	17:34:59	TWAP	XEUR
TU	2 LOCAL TRADING DAYS before Reference Date	1	First Notice	13:40:00	14:09:59	TWAP	XCBT
FV	2 LOCAL TRADING DAYS before Reference Date	1	First Notice	13:40:00	14: 09:59	TWAP	XCBT
TY	2 LOCAL TRADING DAYS before Reference Date	1	First Notice	13:40:00	14: 09:59	TWAP	XCBT
FGBL	3 LOCAL TRADING DAYS before Reference Date	1	Last Trade	16:50:00	17: 19:59	TWAP	XEUR
FGBM	2 LOCAL TRADING DAYS before Reference Date	1	Last Trade	16:50:00	17: 19:59	TWAP	XEUR
FGBS	3 LOCAL TRADING DAYS before Reference Date	1	Last Trade	16:50:00	17: 19:59	TWAP	XEUR
GC	5 th LOCAL TRADING DAYS of the month	5	-	-	-	Settlement	XNYM
ES	5 LOCAL TRADING DAYS before Reference Date	1	Last Trade	14:55:00	14:59:59	TWAP	XCME

Note: The TWAP Start and TWAP end times are local exchange times. In case of a partial trading day (as defined by the exchange) the TWAP start and TWAP end times will be moved accordingly. For the avoidance of doubt: If the relevant exchange closes two hours earlier, the TWAP Start and TWAP End times will be moved two hours earlier as well.



Table 2: Overview of Front Month Contracts

Base RIC	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
STXE	H0	H0	H0	M0	M0	M0	U0	U0	U0	Z0	Z0	Z0
TU	H0	H0	M0	M0	M0	U0	U0	U0	Z0	Z0	Z0	H1
FV	H0	H0	M0	M0	M0	U0	U0	U0	Z0	Z0	Z0	H1
TY	H0	H0	M0	M0	M0	U0	U0	U0	Z0	Z0	Z0	H1
FGBL	H0	H0	H0	M0	M0	M0	U0	U0	U0	Z0	Z0	Z0
FGBM	H0	H0	H0	M0	M0	M0	U0	U0	U0	Z0	Z0	Z0
FGBS	H0	H0	H0	M0	M0	M0	U0	U0	U0	Z0	Z0	Z0
GC	G0	J0	J0	M0	M0	Q0	Q0	Z0	Z0	Z0	Z0	G1
ES	H0	H0	H0	M0	M0	M0	U0	U0	U0	Z0	Z0	Z0

Note: The mapping of respective letters to months can be found in Table 3. A "0" indicates the same year, while a "1" indicates the following year.

Table 3: Mapping

Letter	F	G	H	J	K	M	N	Q	U	V	X	Z
Month	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec

CONTACT

Solactive AG
German Index Engineering
Platz der Einheit 1
60327 Frankfurt am Main
Germany

Tel.: +49 (0) 69 719 160 00

Fax: +49 (0) 69 719 160 25

Email: info@solactive.com

Website: www.solactive.com

© Solactive AG