# INDEX GUIDELINE

## SOLACTIVE DYNAMIC MULTI-ASSET 5% VOLATILITY INDEX

Version 1.0

30 June 2025

# TABLE OF CONTENTS

# INTRODUCTION

This document (the "**GUIDELINE**") is to be used as a guideline with regard to the composition, calculation and maintenance of the SOLACTIVE DYNAMIC MULTI-ASSET 5% VOLATILITY INDEX (the "**INDEX**"). Any amendments to the rules made to the GUIDELINE are approved by the INDEX COMMITTEE specified in Section 4.5. The INDEX is owned 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 5 (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

| Category | Description |
|---|---|
| Asset Class | Multi-Asset [Equity/Commodity/Fixed Income] |
| Strategy | The INDEX is a rules-based strategy which aims to give exposure to a portfolio of 3 sub-indices (each an "**INDEX COMPONENT**"), each representing a different asset class.<br>The INDEX dynamically adjusts the allocation to these components according to their realized volatility levels. |
| Rebalancing Frequency | Daily; after market close |
| Target Volatility | 5% |

## 1.2. IDENTIFIERS AND PUBLICATION

The INDEX is published under the following identifiers:

| Name | ISIN | Currency | Type | RIC | BBG ticker |
|---|---|---|---|---|---|
| Solactive Dynamic Multi-Asset 5% Volatility ER Index | DE000SL0Q2H6 | USD | ER* | .SODMA5VE | SODMA5VE Index |
| Solactive Dynamic Multi-Asset 5% Volatility TR Index | DE000SL0Q2J2 | USD | TR* | .SODMA5VT | SODMA5VT Index |

*TR, ER means that the Index is calculated as Total Return and Excess Return, respectively.

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 29/08/2002, the INDEX START DATE, is 100. Historical values from 01/07/2025, 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

The level of the INDEX is calculated on each CALCULATION DAY from 9:00 a.m. to 4:52 p.m. ET based on the TRADING PRICES on the EXCHANGES on which the INDEX COMPONENTS are listed.

In addition to the intraday calculation a closing level of the INDEX for each CALCULATION DAY is also calculated. This closing level is based on the CLOSING PRICES for the INDEX COMPONENTS on the respective EXCHANGES on which the INDEX COMPONENTS are listed.

## 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 COMPONENTS

The INDEX tracks the performance of a volatility-weighted portfolio comprising 3 components ("**INDEX COMPONENT**"), each representing a different asset class.

| Index Component | RIC | BBG Ticker | ISIN | Asset Class |
|---|---|---|---|---|
| Solactive Future Series 5-Day Roll United States 500 Excess Return USD Index | .SOF5ESS0 | SOF5ESS0 Index | DE000SL0JXJ8 | Equity |
| Solactive Future Series 5-Day Roll Gold Excess Return USD Index | .SOF5GCS0 | SOF5GCS0 Index | DE000SL0KEW9 | Commodity |
| Solactive Future Series 5-Day Roll 10y Treasury Note Excess Return USD Index | .SOF5TYS0 | SOF5TYS0 Index | DE000SL0JXN0 | Fixed Income |

Supporting documentation, including the INDEX FUTURE ROLL GUIDELINE "Generic Guideline" and their INDEX SPECIFIC PARAMETERS are provided below:

| Index Component | URL |
|---|---|
| Solactive Future Series 5-Day Roll United States 500 Excess Return USD Index | SOF5ESS0 Index Parameters |
| Solactive Future Series 5-Day Roll Gold Excess Return USD Index | SOF5GCS0 Index Parameters |
| Solactive Future Series 5-Day Roll 10y Treasury Note Excess Return USD Index | SOF5TYS0 Index Parameters |

# 3. CALCULATION OF THE INDEX

## 3.1. INDEX FORMULA

The INDEX is calculated as an $Excess\ Return$ and $Total\ Return$ INDEX.

The level of the INDEX at the INDEX START DATE is equal to:

$$I_{ER,0} = 100$$

$$I_{TR,0} = 100$$

The level of the INDEX (the "**INDEX LEVEL**") as of each CALCULATION DAY t that falls after the INDEX START DATE is calculated according to the following formula:

$$I_{ER,t} = I_{ER,t-1} \times (1 + IER_t)$$

$$I_{TR,t} = I_{TR,t-1} \times (1 + ITR_t)$$

Where:

$I_{ER,t}$: means the EXCESS RETURN Index level as of CALCULATION DAY t;

$I_{TR,t}$: means the TOTAL RETURN Index level as of CALCULATION DAY t;

$I_{ER,t-1}$: means the EXCESS RETURN Index level as of the CALCULATION DAY immediately preceding CALCULATION DAY t;

$I_{TR,t-1}$: means the TOTAL RETURN Index level as of the CALCULATION DAY immediately preceding CALCULATION DAY t;

$IER_t$: means the INTERMEDIATE EXCESS RETURN as of CALCULATION DAY t, defined in section 3.2.2.;

$ITR_t$: means the INTERMEDIATE TOTAL RETURN as of CALCULATION DAY t, defined in section 3.2.1.;

## 3.2. INTERMEDIATE RETURN

### 3.2.1. INTERMEDIATE TOTAL RETURN

The INTERMEDIATE TOTAL RETURN as of CALCULATION DAY t, is calculated according to the following formula:

$$ITR_t = IER_t + \left(Rate_{t-1} * \frac{DC_{t,t-1}}{360}\right)$$

Where:

$IER_t$: means the level of the INTERMEDIATE EXCESS RETURN as of CALCULATION DAY t, defined in section 3.2.2.;

$Rate_{t-1}$: means the INTEREST RATE as of the CALCULATION DAY immediately preceding CALCULATION DAY t. Provided that no level of INTEREST RATE is published in respect of such day, the level of INTEREST RATE in respect of the immediately preceding calendar day in which a level of INTEREST RATE has been published shall be used;

$DC_{t,t-1}$: means the number of calendar days in the period from (and including) CALCULATION DAY t to (but excluding) the CALCULATION DAY immediately preceding CALCULATION DAY t;

## 3.2.2. INTERMEDIATE EXCESS RETURN

$$IER_t = \sum_{i=1}^{3} AdjW_{t-2} \times RPW_{t-2}^{i} \times \left( \frac{U_t^i}{U_{t-1}^i} - 1 \right)$$

Where:

$U_t^i$: means the CLOSING LEVEL of INDEX COMPONENT $i$ as of CALCULATION DAY t;

$U_{t-1}^i$: means the CLOSING LEVEL of INDEX COMPONENT $i$ as of the CALCULATION DAY immediately preceding CALCULATION DAY t;

$RPW_{t-2}^i$: means the Risk Parity Weight of INDEX COMPONENT $i$ as of two CALCULATION DAYS immediately preceding CALCULATION DAY t in accordance with the following formula:

$$RPW_t^i = \frac{\left(Variance_{L,t}^i\right)^{-\frac{1}{2}}}{\sum_{i=1}^{3}\left(Variance_{L,t}^i\right)^{-\frac{1}{2}}}$$

$AdjW_{t-2}$: means the Adjusted Weights as of two CALCULATION DAYS immediately preceding CALCULATION DAY t in accordance with the following formula:

$$AdjW_t = min\left(MaxLeverage, \frac{TargetVol}{\sigma_t}\right)$$

Where:

$MaxLeverage$: equals 150%

$TargetVol$: equals 5%

$\sigma_t$: means the realized volatility of the index components as of CALCULATION DAY t in accordance with the following formula:

$$\sigma_t = \sqrt{252 \times max\left(PVar_{L,t}, PVar_{s,t}\right)}$$

Where:

$PVar_{L,t}$: means the Portfolio Variance Long as of CALCULATION DAY t in accordance with the following formula:

$$PVar_{L,t} = \left(\sum_{i=1}^{3} RPW_t^{i\,2} \times Variance_{L,t}^{i}\right) + 2 \times Covariance_{L,t}^{Eq,FI} \times RPW_t^{Eq} \times RPW_t^{FI} + 2 \times Covariance_{L,t}^{Eq,Com} \times RPW_t^{Eq} \times RPW_t^{Com} + 2 \times Covariance_{L,t}^{FI,Com} \times RPW_t^{FI} \times RPW_t^{Com}$$

$PVar_{S,t}$: means the Portfolio Variance Short as of CALCULATION DAY t in accordance with the following formula:

$$PVar_{S,t} = \left(\sum_{i=1}^{3} RPW_t^{i\,2} \times Variance_{S,t}^{i}\right) + 2 \times Covariance_{S,t}^{Eq,FI} \times RPW_t^{Eq} \times RPW_t^{FI} + 2 \times Covariance_{S,t}^{Eq,Com} \times RPW_t^{Eq} \times RPW_t^{Com} + 2 \times Covariance_{S,t}^{FI,Com} \times RPW_t^{FI} \times RPW_t^{Com}$$

$Variance_{S,t}^{i}$: means the short-term Exponentially Weighted Variance of INDEX COMPONENT $i$ as of CALCULATION DAY t, defined in section 3.3.;

$Variance_{L,t}^{i}$: means the long-term Exponentially Weighted Variance of INDEX COMPONENT $i$ as of CALCULATION DAY t, defined in section 3.3.;

$Covariance_{S,t}^{i,j}$: means the short-term Exponentially Weighted Covariance of INDEX COMPONENT $i$ and $j$ as of CALCULATION DAY t, defined in section 3.3.;

$Covariance_{L,t}^{i,j}$: means the long-term Exponentially Weighted Covariance of INDEX COMPONENT $i$ and $j$ as of CALCULATION DAY t, defined in section 3.3.;

## 3.3. EXPONENTIALLY WEIGHTED VARIANCE AND COVARIANCE

The realized short-term and long-term variances of the INDEX COMPONENT $i$ are based on exponentially weighted moving averages in accordance with the following formula:

If $t = VarStartDate$:

$$Variance_{S,t}^{i} = \sum_{k=1}^{N} \frac{\alpha_{S,k}}{x_S} \times \left( \log \left( \frac{U_{t-k+1}^{i}}{U_{t-k}^{i}} \right) \right)^2$$

$$Variance_{L,t}^{i} = \sum_{k=1}^{N} \frac{\alpha_{L,k}}{x_L} \times \left( \log \left( \frac{U_{t-k+1}^{i}}{U_{t-k}^{i}} \right) \right)^2$$

Otherwise:

$$Variance_{S,t}^{i} = \lambda_S \times Variance_{S,t-1}^{i} + (1 - \lambda_S) \times \left( \log \left( \frac{U_{t}^{i}}{U_{t-1}^{i}} \right) \right)^2$$

$$Variance_{L,t}^{i} = \lambda_L \times Variance_{L,t-1}^{i} + (1 - \lambda_L) \times \left( \log \left( \frac{U_{t}^{i}}{U_{t-1}^{i}} \right) \right)^2$$

The realized short-term and long-term covariances of the INDEX COMPONENT $i$ and $j$ are based on exponentially weighted moving averages in accordance with the following formula:

If $t = CovStartDate$:

$$Covariance_{S,t}^{i,j} = \sum_{k=1}^{N} \frac{\alpha_{S,k}}{x_S} \times \log \left( \frac{U_{t-k+1}^{i}}{U_{t-k}^{i}} \right) \times \log \left( \frac{U_{t-k+1}^{j}}{U_{t-k}^{j}} \right)$$

$$Covariance_{L,t}^{i,j} = \sum_{k=1}^{N} \frac{\alpha_{L,k}}{x_L} \times \log \left( \frac{U_{t-k+1}^{i}}{U_{t-k}^{i}} \right) \times \log \left( \frac{U_{t-k+1}^{j}}{U_{t-k}^{j}} \right)$$

Otherwise:

$$Covariance_{S,t}^{i,j} = \lambda_S \times Covariance_{S,t-1}^{i,j} + (1 - \lambda_S) \times \log \left( \frac{U_{t}^{i}}{U_{t-1}^{i}} \right) \times \log \left( \frac{U_{t}^{j}}{U_{t-1}^{j}} \right)$$

$$Covariance_{L,t}^{i,j} = \lambda_L \times Covariance_{L,t-1}^{i,j} + (1 - \lambda_L) \times \log \left( \frac{U_{t}^{i}}{U_{t-1}^{i}} \right) \times \log \left( \frac{U_{t}^{j}}{U_{t-1}^{j}} \right)$$

Where:

$CovStartDate$: means 2002-08-28;

$VarStartDate$: means 2002-08-28;

$log$: means the natural logarithm to the basis of Euler's number $e$ (~2.781);

$U_t^i$: means the CLOSING LEVEL of INDEX COMPONENT $i$ as of CALCULATION DAY t;

$U_{t-1}^i$: means the CLOSING LEVEL of INDEX COMPONENT $i$ as of the CALCULATION DAY immediately preceding CALCULATION DAY t;

$N$: means the lookback number of CALCULATION DAYS used to calculate the Variance and Covariance on the $VarStartDate$ and the $CovStartDate$ respectively, and is equal to 50;

$\lambda_S$: means the short-term decay factor, and is equal to 0.94;

$\lambda_L$: means the long-term decay factor, and is equal to 0.97;

$\alpha_{S,k}$: means the short-term weight, applied to the $k^{th}$ return in the initial calculation window and is given by:

$$\alpha_{S,k} = (1 - \lambda_S) \times {\lambda_S}^{k-1}$$

$\alpha_{L,k}$: means the long-term weight, applied to the $k^{th}$ return in the initial calculation window and is given by:

$$\alpha_{L,k} = (1 - \lambda_L) \times {\lambda_L}^{k-1}$$

$x_S$: means the sum of all $\alpha_{S,k}$ used in the initial variance and covariance calculation and is given by:

$$x_S = \sum_{k=1}^{N} \alpha_{S,k}$$

$x_L$: means the sum of all $\alpha_{L,k}$ used in the initial variance and covariance calculation and is given by:

$$x_L = \sum_{k=1}^{N} \alpha_{L,k}$$

## 3.4. ACCURACY

The level of the INDEX will be rounded to 4 decimal places for publication purposes.

## 3.5. 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/.

## 3.6. 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.

# 4. MISCELLANEOUS

## 4.1. 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.

## 4.2. 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", which is available at https://www.solactive.com/news/announcements/. The date of the last amendment of this INDEX is contained in this GUIDELINE.

## 4.3. 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.

## 4.4. 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/.

## 4.5. INDEX COMMITTEE

An index committee composed of staff from SOLACTIVE and its subsidiaries (the "**INDEX 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 INDEX 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/.

# 5. DEFINITIONS

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

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

**"INDEX START DATE"** shall have the meaning as defined in Section 1.3.

**"INDEX COMPONENT"** means each of the index components as set out in the INDEX COMPONENTS TABLE.

**"INDEX FUTURE ROLL GUIDELINE"** shall have the meaning as defined in Section 2.

**"INDEX SPECIFIC PARAMETERS"** shall have the meaning as defined in Section 2.

**"INTEREST RATE":** means the Secured Overnight Financing Rate (RIC: USDSOFR=) plus a spread of 0.0026161. For back-testing calculations prior to 01/01/2022, the USD 3-Month Forward Swap Rate (RIC: USD3MFSR=) has been used.

**"CALCULATION DAY"** means a day on which the New York Stock Exchange (MIC: XNYS), New York Mercantile Exchange (MIC: XNYM), and CBOT General Business Days (MIC: XCBT ) are scheduled to be open for trading.

The **"CLOSING PRICE"** in respect of an INDEX COMPONENT and a TRADING DAY is a security's final regular-hours TRADING PRICE published by the EXCHANGE and determined in accordance with the EXCHANGE regulations. If the EXCHANGE has no or has not published a CLOSING PRICE in accordance with the EXCHANGE rules for an INDEX COMPONENT, the last TRADING PRICE will be used.

**"EXCHANGE"** is with respect to the INDEX and every INDEX COMPONENT, the respective exchange where the INDEX COMPONENT has its listing as determined in accordance with the rules in Section 2.

**"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.

**"LIVE DATE"** shall have the meaning as defined in Section 1.3.

**"INDEX COMMITTEE"** shall have the meaning as defined in Section 4.5.

**"TRADING DAY"** is with respect to an INDEX COMPONENT included in the INDEX at the REBALANCE DAY and every INDEX COMPONENT included in the INDEX at the CALCULATION DAY immediately following the REBALANCE DAY (for clarification: this provision is intended to capture the TRADING DAYS for the securities to be included in the INDEX as new INDEX COMPONENTS with close of trading on the relevant EXCHANGE on the REBALANCE DAY) a day on which the relevant EXCHANGE is open for trading (or a day that would have been such a day if a market disruption had not occurred), excluding days on which trading may be ceased prior to the scheduled EXCHANGE closing time and days on which the EXCHANGE is open for a scheduled shortened period. The INDEX ADMINISTRATOR is ultimately responsible as to whether a certain day is a TRADING DAY.

The **"TRADING PRICE"** in respect of an INDEX COMPONENT and a TRADING DAY is the most recent published price at which the INDEX COMPONENT was traded on the respective EXCHANGE.

# 6. HISTORY OF INDEX CHANGES

| Version | Date | Description |
|---|---|---|
| 1.0 | *30 June 2025* | Index Guideline creation (*initial version*) |

# 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