

# INDEX GUIDELINE

*SOLACTIVE INNOVATION & AI SELECTION 2023 VT10 INDEX*

Version 1.1

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## INTRODUCTION

This document (the "**GUIDELINE**") is to be used as a guideline with regard to the composition, calculation and maintenance of Solactive Innovation & AI Selection 2023 VT10 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

This INDEX is derived from the Solactive Innovation & AI Selection 2023 NTR Index, ISIN: DE000SLOHNM7 ("UNDERLYING INDEX"). Therefore, Environmental, Social, Governance Methodological Considerations applied for the UNDERLYING INDEX are also applied to this index

Category	Description
Asset Class	Equity
Strategy	Representation of 19 securities equally weighted, applying a volatility target layer on top.
Regional Allocation	Developed Markets
Volatility Target	10.0%
Rebalancing Frequency	Quarterly

### 1.2. IDENTIFIERS AND PUBLICATION

The INDEX is published under the following identifiers:

Name	ISIN	Currency	Type	RIC	BBG ticker
Solactive Innovation & AI Selection 2023 VT10 Index	DE000SLOJWS1	EUR	NTR*/VT*	.SOINNO10	SOINNO10 Index

\*NTR means that the UNDERLYING INDEX is calculated as Net Total Return Index as described in the Equity Index Methodology, which is available on the SOLACTIVE website: <https://www.solactive.com/documents/equity-index-methodology/>. VT\* means there is a volatility control formula used on top of the UNDERLYING INDEX. Please see section 3.1

The INDEX is published on the website of the INDEX ADMINISTRATOR ([www.solactive.com](http://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 2015-07-31, the START DATE, is 642.537196754989. Historical values from 2023-07-05, the LIVE DATE, will be recorded in accordance with Article 8 of the BMR.



## 1.4. PRICES AND CALCULATION FREQUENCY

The level of the INDEX is calculated on each CALCULATION DAY from 10:00 a.m. to 10:52 p.m. CET based on the TRADING PRICES on the EXCHANGES on which the INDEX COMPONENTS are listed. TRADING PRICES of INDEX COMPONENTS not listed in the INDEX CURRENCY are converted using the current Intercontinental Exchange ("ICE") spot foreign exchange rate. Should there be no current TRADING PRICE for an INDEX COMPONENT, the later of: (i) the most recent CLOSING PRICE; or (ii) the last available TRADING PRICE for the preceding TRADING DAY is used in the calculation.

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. The CLOSING PRICES of INDEX COMPONENTS not listed in the INDEX CURRENCY are converted using the 4pm London time WM Fixing quoted by Reuters. If there is no 4pm London time WM Fixing for the relevant CALCULATION DAY, the last available 4pm London 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

The Selection of the UNDERLYING INDEX happens in accordance with its [Guideline](#).

### 2.1. INDEX UNIVERSE REQUIREMENTS

The INDEX UNIVERSE REQUIREMENTS of the UNDERLYING INDEX are specified in its [Guideline](#).

### 2.2. SELECTION OF THE INDEX COMPONENTS

The INDEX is composed of the following two underlying: an UNDERLYING INDEX and a CASH COMPONENT:

Component	Name	Currency	RIC	BBG Ticker
1	Solactive Innovation & AI Selection 2023 NTR Index	EUR	.SOINNONR	SOINNONR Index
2	Euro Short-Term Rate (€STR)	-	EUROSTR=	ESTRON Index



## 3. CALCULATION OF THE INDEX

### 3.1. INDEX FORMULA

The level of the INDEX is (i) calculated based on the level of the UNDERLYING INDEX, which calculates as a Net Total Return, and (ii) that is adjusted with a volatility target formula of 10.0%.

The level of the INDEX is calculated according to the following formula:

$$\begin{aligned}
 Index_t = & Index_{t-1} \\
 & * \left( 1 + w_{t-1} \times \left( \frac{UL_t}{UL_{t-1}} - 1 - RC \times \frac{DCF_{t,t-1}}{360} \right) \right) \\
 & + (1 - w_{t-1}) \times rate_{t-1} \times \frac{DCF_{t,t-1}}{360} - AF \times \frac{DCF_{t,t-1}}{365} - TC_{t-1}
 \end{aligned}$$

Where:

**$Index_t$** : The level of the INDEX as of CALCULATION DAY t.

**$Index_{t-1}$** : The level of the INDEX as of CALCULATION DAY t-1.

**$w_{t-1}$** : The exposure as of CALCULATION DAY t-1.

**$UL_t$** : The level of the UNDERLYING INDEX as of CALCULATION DAY t.

**$UL_{t-1}$** : The level of the UNDERLYING INDEX as of CALCULATION DAY t-1.

**$rate_{t-1}$** : The Euro Short-Term Rate (€STR) expressed in % (RIC: EUROSTR=) on the close of CALCULATION DAY t-1.

**$DCF_{t,t-1}$** : The number of calendar days between CALCULATION DAY t (including) and CALCULATION DAY t-1 (excluding).

**$RC$** : The replication cost of 0.15%.

**$AF$** : The adjustment factor of 3.5%.

**$TC_{t-1}$** : The transaction cost as of CALCULATION DAY t-1.

The exposure as of CALCULATION DAY t strictly after START DATE is calculated according to the following:

$$W_t = \min \left( maxExposure, \frac{TV}{\sigma_{t-2}^{UL}} \times VAF_{t-2} \right)$$

Where:

**$maxExposure$** : The maximum exposure, which equals 150%.



$TV$ : The level of the target volatility of 10.0%.

$\sigma_{t-2}^{UL}$ : The realized historical volatility of the UNDERLYING INDEX as of CALCULATION DAY t-2.

$VAF_{t-2}$ : The volatility adjustment factor as of CALCULATION DAY t-2.

The realized historical volatility of the UNDERLYING INDEX as of CALCULATION DAY t is calculated according to the following:

$$\sigma_t^{UL} = \sqrt{\frac{1}{20} \times \sum_{k=t-19}^t \left( \sqrt{\frac{365}{DCF_{k,k-1}}} \times \ln \left( \frac{UL_k}{UL_{k-1}} \right) \right)^2}$$

Where:

$UL_k$ : The level of the UNDERLYING INDEX as of the CALCULATION DAY k.

$UL_{k-1}$ : The level of the UNDERLYING INDEX as of the CALCULATION DAY k-1.

$DCF_{k,k-1}$ : The number of calendar days between CALCULATION DAY k (including) and CALCULATION DAY k-1 (excluding).

The volatility adjustment factor as of CALCULATION DAY t being on or before the CALCULATION DAY immediately following START DATE is defined as follows:

$$VAF_t = 1.0$$

The volatility adjustment factor as of CALCULATION DAY t being strictly after the CALCULATION DAY immediately following START DATE is calculated according to the following:

$$VAF_t = \min \left( 120\%, \max \left( 80\%, \sqrt{\max \left( 0, 1 + \frac{\alpha_t}{126} \times \left( 1 - \left( \frac{\sigma_t^{IL}}{TV} \right)^2 \right) \right)} \right) \right)$$

Where:

$\alpha_t$ : The number of CALCULATION DAYS between START DATE (including) and CALCULATION DAY t (excluding) capped at 126.

$TV$ : The level of the target volatility of 10.0%.

$\sigma_t^{IL}$ : The realized historical volatility of the INDEX as of CALCULATION DAY t.





The REALIZED HISTORICAL VOLATILITY of the INDEX as of CALCULATION DAY t is calculated according to the following:

$$\sigma_t^{IL} = \sqrt{\frac{1}{\alpha_t} \times \sum_{k=t-\alpha_t+1}^t \left( \sqrt{\frac{365}{DCF_{k,k-1}}} \times \ln \left( \frac{Index_k}{Index_{k-1}} \right) \right)^2}$$

Where:

$\alpha_t$ : The number of CALCULATION DAYS between START DATE (including) and CALCULATION DAY t (excluding) capped at 126.

$DCF_{k,k-1}$ : The number of calendar days between CALCULATION DAY k (including) and CALCULATION DAY k-1. (excluding).

$Index_k$ : The level of the INDEX as of CALCULATION DAY k.

$Index_{k-1}$ : The level of the INDEX as of CALCULATION DAY k-1.

The transaction cost as of CALCULATION DAY t is calculated according to the following:

$$TC_t = C \times abs \left( w_t - w_{t-1} \times \frac{UL_t}{UL_{t-1}} \times \frac{Index_{t-1}}{Index_t} \right) \times Index_t$$

Where:

$Index_t$ : The level of the INDEX as of CALCULATION DAY t.

$Index_{t-1}$ : The level of the INDEX as of CALCULATION DAY t-1.

$w_t$ : The exposure as of CALCULATION DAY t.

$w_{t-1}$ : The exposure as of CALCULATION DAY t-1.

$UL_t$ : The level of the UNDERLYING INDEX as of CALCULATION DAY t.

$UL_{t-1}$ : The level of the UNDERLYING INDEX as of CALCULATION DAY t-1.

$C$ : The transaction cost of 0.02%.

## 3.2. ACCURACY

The level of the INDEX will be rounded to 2 decimal places. The level of the UNDERLYING INDEX used in the calculation of the INDEX will not be rounded.



### 3.3. 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/>.

### 3.4. 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. 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/>.



## 5. VERSION HISTORY

VERSION	DATE	DESCRIPTION
1.0	July, 5 <sup>th</sup> 2023	Initial Guideline creation ( <i>initial version</i> )
1.1	March, 7 <sup>th</sup> 2024	Correction of a typo for REALIZED HISTORICAL VOLATILITY



## 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. A day on which any of the exchanges

- SIX Swiss Exchange
- XETRA
- New York Stock Exchange
- NASDAQ

is not open for general business is not a CALCULATION DAY.

“**CASH COMPONENT**” shall have the meaning as defined in Section 2.2.

“**CLOSE OF BUSINESS**” is the calculation time of the closing level of the INDEX as outlined in Section 1.4.

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. For the avoidance of doubt, the CLOSING PRICE of the UNDERLYING INDEX is calculated and published by SOLACTIVE.

“**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 UNDERLYING INDEX.

“**INDEX COMPONENT REQUIREMENTS**” shall have the meaning as defined in Section 2.2.

“**INDEX CURRENCY**” is the currency specified in the column “Currency” in the table in Section 1.2.

“**INDEX UNIVERSE REQUIREMENTS**” shall have the meaning as defined in Section 2.1.

“**INDEX UNIVERSE**” is the sum of all financial instruments which fulfill the INDEX UNIVERSE REQUIREMENTS.

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

“**OVERSIGHT COMMITTEE**” shall have the meaning as defined in Section 4.5.

“**REALIZED HISTORICAL VOLATILITY**” in relation to the INDEX shall have the meaning as defined in Section 3.1.

“**SOLACTIVE**” shall have the meaning as defined in Section “Introduction”.

“**START DATE**” shall have the meaning as defined in Section 1.3.



**“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. For the avoidance of doubt, the TRADING PRICE of the UNDERLYING INDEX is calculated and published by SOLACTIVE.

**“UNDERLYING INDEX”** shall have the meaning as defined in Section 2.2.

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