

GUIDELINE

Solactive Global Health Services & Technology V12 AR 2% ER

Version 3.0 dated March 2nd, 2017



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This document contains the underlying principles and regulations regarding the structure and the operating of the Solactive Global Health Services & Technology V12 AR 2% ER ("the Index"). Solactive AG shall make every effort to implement

regulations. Solactive AG does not offer any explicit or tacit guarantee or assurance, neither pertaining to the results from the use of the Indices nor the Index values at any certain point in time nor in any other respect. The Indices are merely calculated and published by Solactive AG and it strives to the best of its ability to ensure the correctness of the calculation. There is no obligation for Solactive AG – 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 AG is no recommendation for capital investment and does not contain any assurance or opinion of Solactive AG regarding a possible investment in a financial instrument based on these Indices.

Introduction

This document is to be used as a guideline with regard to the composition, calculation and management of the Solactive Global Health Services & Technology V12 AR 2% ER. Any changes made to the guideline are initiated by the Committee specified in section 1.6 of this document. The Index is calculated and published by Solactive AG. The name “Solactive” is copyrighted.

1 Index specifications

The Solactive Global Health Services & Technology V12 AR 2% ER is calculated and distributed by Solactive AG.

The Index takes a variable exposure to the ER version of the Solactive Global Health Services & Technology NTR Index (“the Underlying Index”) with the aim to achieve an annualized volatility of less than or equal to 12%. The Index therefore reflects the performance of the Solactive Global Health Services & Technology NTR Index in excess of the US Dollar 3 Month ICE LIBOR rate subject to a deduction from performance of a Synthetic Dividend of 2% p.a.

The Index is calculated and published in USD.

1.1 Short name and ISIN

The Indices are distributed under the following identifiers:

Name	ISIN	WKN	Characteristic	Reuters	Bloomberg
Solactive Global Health Services & Technology V12 AR 2% ER	DE000SLA25A1	SLA25A	Volatility Target	.SOLHC	SOLHC Index

1.2 Initial value

The Index is launched with a level of 100 at the close on the start date, 13th Oct 2006. Data before March 2nd 2017 is backtested.

1.3 Distribution

The Indices are published via the price marketing services of Boerse Stuttgart AG and are distributed to all affiliated vendors. Each vendor decides on an individual basis as to whether he will distribute/display the Solactive Global Health Services & Technology V12 AR 2% ER via his information systems.

1.4 Prices and calculation frequency

The price of the Index is calculated on each Exchange Trading Day. Should there be no price available on Reuters for any Exchange Trading Day for the LIBOR rate, the most recent price on Reuters for the preceding Exchange Trading Day is used in the index calculation.

The Solactive Global Health Services & Technology V12 AR 2% ER is calculated every Exchange Trading Day at 22:50, CET. In the event that data cannot be provided to Reuters or to the pricing services of Boerse Stuttgart AG the Index cannot be distributed.

1.5 Decision-making bodies

A Committee composed of staff from Solactive is responsible any amendments to the rules (in this document referred to as the "Index Committee"). Any changes to the rules will be announced 60 Business Days prior to the effective date of the relevant change.

1.6 Publication

All specifications and information relevant for calculating the Index are made available on the <http://www.solactive.de> web page and sub-pages.

1.7 Historical data

Historical data will be maintained from the launch of the Index on March 2nd 2017.

1.8 Licensing

Licences to use the Index as the underlying for investment products issued by stock exchanges, banks, financial services providers and investment houses or for benchmark usage are granted by Solactive AG.

2 Composition of the Index

2.1 Selection of the Index Components

The index is composed of the following two underlying components (each of them an Underlying Component, together the Underlying Components):

- 1) The Solactive Global Health Services & Technology NTR Index (Underlying Component 1).
- 2) The US Dollar 3 Month ICE LIBOR rate as published under the Reuters RIC: USD3MFSR= (Underlying Component 2).

2.2 Ordinary adjustment

Not applicable

2.3 Extraordinary adjustment

Not applicable.

3 Calculation of the Index

3.1 Index formula

The Index Value on any Exchange Trading Day is calculated in accordance with the following formula:

$$IL_t = IL_{t-1} * \left(1 + w_{t-3} \left(\frac{ER_t}{ER_{t-1}} - 1\right) - SD * \frac{DC_{t,t-1}}{360}\right)$$

with:

IL_t	= Index Level as of Exchange Trading Day t
IL_{t-1}	= Index Level as of the Exchange Trading Day immediately preceding Exchange Trading Day t
ER_t	= Level of the Excess Return Index (as defined below) as of Exchange Trading Day t
ER_{t-1}	= Level of the Excess Return Index (as defined below) as of the Exchange Trading Day immediately preceding Exchange Trading Day t
w_{t-3}	= The used weight (as defined below), determined three Exchange Trading Days prior to Exchange Trading Day t
SD	= The Synthetic Dividend of 2%
$DC_{t,t-1}$	= Number of Calendar Days from (and excluding) Exchange Trading Day t-1 to (and including) Exchange Trading Day t

The level of the Excess Return Index as of Exchange Trading Day t is calculated according to the following formula:

$$ER_t = ER_{t-1} * \left(1 + \left(\frac{UC1_t}{UC1_{t-1}} - 1\right) - UC2_{t-1} * \frac{DC_{t,t-1}}{360}\right)$$

with:

ER_t	= Level of the Excess Return Index as of Exchange Trading Day t
ER_{t-1}	= Level of the Excess Return Index as of the Exchange Trading Day immediately preceding Exchange Trading Day t
$UC1_t$	= Index level of Underlying Component 1 as of Exchange Trading Day t
$UC1_{t-1}$	= Index level of Underlying Component 1 as of the Exchange Trading Day immediately preceding Exchange Trading Day t
$UC2_{t-1}$	= Is the level of the US Dollar 3 Month ICE LIBOR rate as of the Exchange Trading Day immediately preceding Exchange Trading Day t, as published under the Reuters RIC: USD3MFSR=. In case no level for the Underlying Component 2 is published for the respective Exchange Trading Day, the level of Underlying Component 2 as of the immediately preceding Exchange Trading Day is used instead.
$DC_{t,t-1}$	= Number of Calendar Days from (and excluding) Exchange Trading Day t-1 to (and including) Exchange Trading Day t

The used weight w_t is determined according to the following formula for $t > 0$ ($w_t = 1$ if $t < 1$):

$$w_t = \min\left(1, VT / vol_{real,t}\right)$$

Where VT equals the volatility target of 12% and $vol_{real,t}$ is the realized volatility as of Exchange Trading Day t, which is calculated according to the following formula:

$$vol_{real,t} = \max(\sigma_{1,t}, \sigma_{2,t})$$

Where $\sigma_{i,t}$ are the short and long horizon volatilities as of Exchange Trading Day t, which are calculated according to the following formula:

$$\sigma_{i,t} = \sqrt{\sigma_{i,t}^2 * 252}, i \in \{1,2\}$$

Where $\sigma_{i,t}^2$ are the are the short and long horizon variances as of Exchange Trading Day t, which are calculated according to the following formula for $t > 1$ ($\sigma_{i,0}^2 = VT^2/252$):

$$\sigma_{i,t}^2 = DF_i * \sigma_{i,t-1}^2 + (1 - DF_i) * \left(\ln \left(ER_t / ER_{t-1} \right) \right)^2, i \in \{1,2\}$$

Where DF_i are the short and long term decay factors which are given as $DF_1 = 0.94$ and $DF_2 = 0.98$ and \ln denotes the natural logarithm.

3.2 Precision

The value of the Index will be rounded to [TBD] decimal places.

3.3 Adjustments

Not applicable.

3.4 Dividends and other distributions

Not applicable.

3.5 Corporate actions

Not applicable.

3.6 Recalculation

Solactive AG makes the greatest possible efforts to accurately calculate and maintain its indices. However, the occurrence of errors in the index determination process cannot be ruled out. In such cases Solactive AG strictly adheres to its publicly available [Correction Policy](#).

For the avoidance of doubt, Data Errors are corrected promptly or, if not, only corrected for levels calculation. The calculation of the used weight as outlined in Section 3 will be unaffected by correction of Data Errors. Non-data Errors older than 3 Business Days are not corrected.

3.7 Market Disruption

In periods of market stress Solactive AG calculates its indices following predefined and exhaustive arrangements set out in its publicly available [Disruption Policy](#).

For the avoidance of doubt, if Underlying Component 1 is disrupted, the Index is calculated according to the rules and formulas as set out in Section 3, except that the used weight is fixed as of the last Exchange Trading Day on which Underlying Component 1 was not disrupted.

Underlying Component 1 is considered as disrupted on Exchange Trading Day t if more than 20% of its market capitalization (using information from the Exchange Trading Day immediately preceding the Exchange Trading Day t and definitions of the Underlying Component 1 guideline) being affected by any disruption event as defined in the Disruption Policy.

4. Definitions

A “**Business Day**” is a weekday other than Saturday and Sunday

A “**Data Error**” refers to the usage of an incorrect level of Underlying Component 1 or Underlying Component 2 in the formulas outlined in Section 3.

An “**Exchange Trading Day**” is a day on which all of the following exchanges are open for their regular trading sessions: New York Stock Exchange, NASDAQ, SIX SWISS, XETRA, Tokyo Stock Exchange, London Stock Exchange

The “**Index Calculator**” is Solactive AG or any other appropriately appointed successor in this function.

The “**Index Currency**” is USD.

The “**Index Start Date**” is March 2nd 2017

A “**Non-data Error**” refers to an incorrect application of the formulas outlined in Section 3.

An “**Underlying Component**” is one of the following:

- 1) The Solactive Global Health Services & Technology NTR Index
- 2) The US Dollar 3 Month ICE LIBOR rate as published under the Reuters RIC: USD3MFSR=

The “**Volatility Target**” is 12%.

5 Appendix

5.1 Contact data

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5.2 Calculation of the Index – change in calculation method

The application by the Index Calculator of the method described in this document is final and binding. The Index Calculator shall apply the method described above for the composition and calculation of the Index Series. However it cannot be excluded that the market environment, supervisory, legal, financial or tax reasons may require changes to be made to this method. The Index Calculator may also make changes to the terms and conditions of the Indices and the method applied to calculate the Indices, which he 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 Calculator is not obliged to provide information on any such modifications or changes. Despite the modifications and changes the Index Calculator will take the appropriate steps to ensure a calculation method is applied that is consistent with the method described above.