

GUIDELINE

Solactive Global Health Services & Technology, Americas Index NTR

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Contents

Introduction

1 Index specifications

- 1.1 Short name and ISIN
- 1.2 Initial value
- 1.3 Distribution
- 1.4 Prices and calculation frequency
- 1.5 Decision-making bodies
- 1.6 Publication
- 1.7 Historical data
- 1.8 Licensing

2 Composition of the Index

- 2.1 Selection of the index components
- 2.2 Weighting
- 2.3 Ordinary adjustment
- 2.4 Extraordinary adjustment

3 Calculation of the Index

- 3.1 Index formula
- 3.2 Accuracy
- 3.3 Adjustments
- 3.4 Dividends and other distributions
- 3.5 Corporate actions
- 3.6 Miscellaneous

4 Definitions

5 Appendix

- 5.1 Contact data
- 5.2 Calculation of the Index – change in calculation method

This document contains the underlying principles and regulations regarding the structure and the operating of the Solactive Global Health Services & Technology, Americas Index NTR (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 Index nor the Index value at any certain point in time nor in any other respect. The Index is 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 this Index.

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, Americas Index NTR. Any changes made to the guideline are initiated by the Committee specified in section 1.5. The Solactive Global Health Services & Technology, Americas Index NTR is calculated and published by Solactive AG. The name “Solactive” is copyrighted.

1 Index specifications

The Solactive Global Health Services & Technology, Americas Index NTR (the “Index”) is an Index of Solactive and is calculated and distributed by Solactive AG.

The Index tracks the performance of global companies from the Health Services and Health Technology Sectors with low historical volatility.

The index is a Net Total Return Index.

The Index is published in US-Dollars.

1.1 Short name and ISIN

The Index is distributed under the following identifiers:

Name	ISIN	WKN	Characteristic	Reuters	Bloomberg
Solactive Global Health Services & Technology, Americas Index NTR	DE000SLA3GC0	SLA3GC	Net Total Return	.SOLHCA1	N/A

1.2 Initial value

The Index is based on 100 at the close of trading on the Start Date October 13, 2006. Data before February 23, 2017 is backtested.

1.3 Distribution

The Solactive Global Health Services & Technology, Americas Index NTR is published via the price marketing services of Boerse Stuttgart AG and is distributed to all affiliated vendors. Each vendor decides on an individual basis as to whether he will distribute/display the Index via his information systems.

1.4 Prices and calculation frequency

The price of the Solactive Global Health Services & Technology, Americas Index NTR is calculated every 15 seconds on each Exchange Trading Day. The most recent prices of all Index Components are used. Prices of Index Components not listed in the Index Currency are translated using Reuters/WMCO closing spot rates as at 4pm London time. Should there be no current price available on Reuters, the most recent price on Reuters is used in the calculation.

The Index is calculated every Exchange Trading Day from 8:00am to 10:30pm, 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 for decisions regarding the composition of the Solactive Global Health Services & Technology, Americas Index NTR as well as any amendments to the rules (in this document referred to as the “Committee” or the “Index Committee”). The future composition of the Solactive Global Health Services & Technology, Americas Index NTR is determined by the Committee on the Selection Days according to the procedure outlined in 2.1 of this document. The Committee shall also decide about the future composition of the Solactive Global Health Services & Technology, Americas Index NTR in the event that any Extraordinary Events should occur and the implementation of any necessary adjustments.

Members of the Committee can recommend changes to the guideline and submit them to the Committee for approval. Any changes to the index rules should be announced 60 days prior to becoming effective.

1.6 Publication

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

1.7 Historical data

Historical data will be maintained from the launch of the Index on February 23, 2017, as well as backtested data from October 13, 2006 to February 22, 2017.

1.8 Licensing

Licences to use the Index as the underlying value for derivative instruments are issued to stock exchanges, banks, financial services providers and investment houses by Solactive.

2 Composition of the Index

2.1 Selection of the Index Components

The initial composition of the Index as well as any ongoing adjustment is based on the following rules:

On the Selection Days, Solactive defines the Solactive Global Health Services & Technology, Americas Index NTR Universe, a selection pool that encompasses the following criteria:

1. The starting universe for the selection is comprised of the Global Factset Screening Universe filtered for the following Factset Sectors: Health Services and Health Technology. Only common stocks and primary listings are eligible. Stocks from the following exchanges are excluded: Shanghai, Shenzhen, US OTC and Norwegian OTC Market.
2. Stocks should be trading for at least 3 months immediately prior to Selection Day.
3. Minimum 6-month liquidity, measured as ADV (Average Daily Traded Value), of 5 million USD as of Selection Day. This data is sourced from Factset.

If less than 100 stocks remain, a maximum of 25 securities which have not fulfilled criteria 3 will be added to the Universe until it achieves the number of 100 members. These additional securities will be the ones with the highest 6-month liquidity, measured the same way as described on criteria 3.

The remaining stocks are then ranked according to their Volatility (calculated as the maximum of the 3-month and the 6-month volatility and measured in USD) as of Selection Day. This data is sourced from Factset. The stocks with the 100 lowest volatilities are selected.

In case two or more stocks receive the same rank, which may impact the selection of exactly 100 stocks, a tie-breaker procedure should be applied. For example, if two stocks are ranked 100 due to having the same volatility, the one with the highest Market Capitalization will be selected. This data is sourced from Factset.

2.2 Weighting

On each Selection Day, the 100 stocks selected as above are weighted according to inverse volatility (where volatility is defined as the maximum of 3-month and 6-month volatility measured on USD returns), in accordance to the following formula:

$$Individual\ Stock\ Weight_{i,t} = \frac{\frac{1}{Volatility_{i,t}^{\max(3m,6m)}}}{\sum_{i=1}^n \frac{1}{Volatility_{i,t}^{\max(3m,6m)}}}$$

With:

$Individual\ Stock\ Weight_{i,t}$ = Individual Stock Weight of Index Component i on Selection Day t

$Volatility_{i,t}^{\max(3m,6m)}$ = Maximum of 3-month and 6-month historical volatility of historical returns of Index Component i on Adjustment Day t, measured in USD, and sourced from Factset via the field "P_VOLATILITY"

Each Individual Security Weight is subject to a 4% cap. If any security exceeds this value, the excess weight is distributed proportionally among the other Index Components.

After the determination of Individual Stock Weights, a geographical screening is performed. Stocks that are classified under the region “North America” and “South America” via the Factset field “P_EXCOUNTRY(“”REG””)” are hereinafter categorized as “Americas”. Stocks that don’t fulfil this criterion will receive a weight of zero. The remaining stocks are reweighted under the following formula, such that the sum of individual weights sum up to one:

$$Weight_{i,t} = Individual\ Stock\ Weight_{i,t}^{Americas} * \frac{1}{\sum_{i=1}^n Individual\ Stock\ Weight_{i,t}^{Americas}}$$

$Weight_{i,t}$ = Weight of Index Component i on Selection Day t

$Individual\ Stock\ Weight_{i,t}^{Americas}$ = Individual Stock Weight of Index Component i classified as “Americas”

2.3 Ordinary adjustment

The composition of the Solactive Global Health Services & Technology, Americas Index NTR is reviewed on a quarterly basis, on Selection Day. Necessary changes are announced.

After the close of trading on each Selection Day, the Number of Index Shares for each Index Component are calculated, as described below:

$$x_{i,t} = \frac{w_{i,t} * Index_t * D_t}{p_{i,t} * f_{i,t}}$$

$x_{i,t}$ = Number of Index Shares of the Index Component i calculated after the close of Selection Day t

$w_{i,t}$ = Weight of the Index Component i determined on Selection Day t, as defined on section 2.2

$Index_t$ = Index Level on Exchange Trading Day t

D_t = Divisor on Exchange Trading Day t

$p_{i,t}$ = Trading Price of Index Component i on Exchange Trading Day t

$f_{i,t}$ = Foreign exchange rate to convert the Price of Index Component i on Exchange Trading Day t into the Index Currency

The new Number of Index Shares are implemented after the close of trading of the Adjustment Day, i.e. will be effective at the open of the Exchange Trading Day immediately succeeding the Adjustment Day.

In case one of the stocks affected on the Adjustment Day cannot be traded due to a non-exchange trading day at the respective country, the rebalance of the index will be postponed by one days or more, i.e. until all stocks can be traded.

The first adjustment will be made in April, 2017 based on the Trading Prices of the Index Components on the Adjustment Day.

Solactive AG shall publish any changes made to the Index composition on the Selection Day and consequently with sufficient notice before the Adjustment Day.

2.4 Extraordinary adjustment

An extraordinary adjustment, if applicable, is triggered and applied in compliance with the rules set forth in the [Guideline for Extraordinary Corporate Actions](#).

3 Calculation of the Index

3.1 Index formula

The Index Value on an Exchange Trading Day at the relevant time is calculated in accordance with the following formula:

$$Index_t = \sum_{i=1}^n \frac{(x_{i,t} * p_{i,t} * f_{i,t})}{D_t}$$

With:

$x_{i,t}$ = Number of Index Shares of the Index Component i on Exchange Trading Day t

$p_{i,t}$ = Trading Price of Index Component i on Exchange Trading Day t

$f_{i,t}$ = Foreign exchange rate to convert the Price of Index Component i on Exchange Trading Day t into the Index Currency

D_t = Divisor on Exchange Trading Day t

On the Selection Day preceding the Start Date (i.e. the Selection Day that defines the initial Index Components), the Divisor receives a theoretical value of 1,000,000. This enables the initial Number of Index Shares to be calculated according to section 3.3. The initial Divisor on the Start Date is calculated according to the following formula:

$$D_t = \frac{\sum_{i=1}^n (p_{i,t} * f_{i,t} * x_{i,t})}{100}$$

After the close of trading on each Adjustment Day t the new Divisor is calculated as follows:

$$D_{t+1} = \frac{\sum_{i=1}^n (p_{i,t} * f_{i,t} * x_{i,t+1})}{Index_t}$$

With:

D_{t+1} = Divisor on Exchange Trading Day immediately succeeding Adjustment Day t

$Index_t$ = Index Level on Adjustment Day t

This Divisor is therefore valid starting the immediately following Exchange Trading Day.

3.2 Accuracy

The value of the Index will be rounded to two decimal places.

Trading Prices and foreign exchange rates will be rounded to six decimal places.

Divisors and Number of Index Shares will be rounded to six decimal places

3.3 Adjustments

The index is rebalanced on a quarterly basis. This requires the new Number of Index Shares of the affected Index Component to be calculated on an ex-ante basis, as already described on section 2.3.

The Solactive Global Health Services & Technology, Americas NTR Index is also adjusted for dividends, capital increases (rights issues), capital reductions, share splits and par value conversions as well as, in accordance with the principles in 3.5.1, other corporate actions.

This procedure ensures that the first ex quote can be properly reflected in the calculation of the Index. This ex-ante procedure assumes the general acceptance of the Index calculation formula as well as open access to the parameter values used. The calculation parameters are provided by Solactive AG.

3.4 Dividends and other distributions

Dividend payments and other distributions are included in the Index. They cause an adjustment of the Divisor. The new Divisor is calculated as follows:

$$D_{t+1} = D_t * \frac{\sum_{i=1}^n (p_{i,t} * f_{i,t} * x_{i,t}) - (x_{i,t} * y_{i,t} * g_{i,t})}{\sum_{i=1}^n (p_{i,t} * f_{i,t} * x_{i,t})}$$

With:

$p_{i,t}$ = Trading Price of Index Component i on Exchange Trading Day t

$f_{i,t}$ = Foreign exchange rate to convert the Price of Index Component i on Exchange Trading Day t into the Index Currency

$x_{i,t}$ = Number of Index Shares of the Index Component i on Exchange Trading Day t

$y_{i,t}$ = Distribution of Index Component i with ex date t+1 multiplied by the Dividend Correction Factor

$g_{i,t}$ = Foreign exchange rate to convert the amount of the distribution of Index Component i on Exchange Trading Day t into the Index Currency

D_t = Divisor on Exchange Trading Day t

D_{t+1} = Divisor on Exchange Trading Day t+1

3.5 Corporate actions

3.5.1 Principles

Following the announcement by a company included in the Index Components of the terms and conditions of a corporate action the Index Calculator determines whether such corporate action has a dilutive, concentrative or similar effect on the price of the respective Index Component.

If this should be the case the Index Calculator shall make the necessary adjustments that are deemed appropriate in order to take into account the dilutive, concentrative or similar effect and shall determine the date on which this adjustment shall come into effect.

Amongst other things the Index Calculator can take into account the adjustment made by an Affiliated Exchange as a result of the corporate action with regard to option and futures contracts on the respective share traded on this Affiliated Exchange.

3.5.2 Capital increases

In the case of capital increases with ex date t+1 the Index is adjusted as follows:

$$x_{i,t+1} = x_{i,t} * \frac{1 + B}{1}$$

With:

$x_{i,t+1}$ = Number of Index Shares of Index Component i on Exchange Trading Day t+1

$x_{i,t}$ = Number of Index Shares of Index Component i on Exchange Trading Day t

B = Number of Shares received for every share held

$$p_{i,t+1} = \frac{p_{i,t} + s * B}{1 + B}$$

With:

$p_{i,t+1}$ = Hypothetical Trading Price of Index Component i on Exchange Trading Day t+1

$p_{i,t}$ = Trading Price of Index Component i on Exchange Trading Day t

s = Subscription Price in the Index Component currency

B = Number of Shares received for every share held

$$D_{t+1} = D_t * \frac{\sum_{i=1}^n (p_{i,t} * f_{i,t} * x_{i,t}) + \sum_{i=1}^n [(x_{i,t+1} * p_{i,t+1} * f_{i,t}) - (x_{i,t} * p_{i,t} * f_{i,t})]}{\sum_{i=1}^n (p_{i,t} * f_{i,t} * x_{i,t})}$$

With:

$D_{i,t+1}$ = Divisor on Exchange Trading Day t+1

$D_{i,t}$ = Divisor on Exchange Trading Day t

$p_{i,t}$	= Trading Price of Index Component i on Exchange Trading Day t
$f_{i,t}$	= Foreign exchange rate to convert the Price of Index Component i on Exchange Trading Day t into the Index Currency
$x_{i,t}$	= Number of Index Shares of the Index Component i on Exchange Trading Day t
$p_{i,t+1}$	= Hypothetical price of Index Component i on Exchange Trading Day t+1
$x_{i,t+1}$	= Number of Index Shares of the Index Component i on Exchange Trading Day t+1

3.5.3 Share splits

In the case of share splits with ex date on Exchange Trading Day t+1 it is assumed that the prices change in ratio of the terms of the split. The new Number of Index Shares is calculated as follows:

$$x_{i,t+1} = x_{i,t} * B$$

With:

$x_{i,t+1}$	= Number of Index Shares of the affected Index Component on Exchange Trading Day t+1
$x_{i,t}$	= Number of Index Shares of the affected Index Component on Exchange Trading Day t
B	= Number of Shares after the share split for every share held before the split

3.5.4 Stock distributions

In the case of stock distributions with ex date on Exchange Trading Day t+1 it is assumed that the prices change according to the terms of the distribution. The new Number of Index Shares is calculated as follows:

$$x_{i,t+1} = x_{i,t} * (1 + B)$$

With:

$x_{i,t+1}$	= Number of Index Shares of the affected Index Component on Exchange Trading Day t+1
$x_{i,t}$	= Number of Index Shares of the affected Index Component on Exchange Trading Day t
B	= Number of Shares received for every share held

3.6 Miscellaneous

3.6.1 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 adheres to its publicly available [Correction Policy](#).

3.6.2 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](#).

4. Definitions

“Adjustment Day” is the Exchange Trading Day 10 Exchange Trading Days after Selection Day.

An **“Affiliated Exchange”** is with regard to an Index Component an exchange, a trading or quotation system on which options and futures contracts on the Index Component in question are traded, as specified by the Index Calculator.

“Average Daily Traded Value”, or **“ADV”**, is calculated by summing up the daily value traded over the specified period ultimately preceding the Selection Day and dividing that sum by the number of Exchange Trading Days in the same period.

“Dividend Correction Factor” is calculated as 1 minus the applicable withholding tax rate and/or other applicable tax rate currently prevalent in the respective country. Please refer to the current Withholding Tax Rates under the Solactive website [Documents Section](#).

“Exchange” is, in respect of Index and every Index Component, the respective primary exchange where the Index Component has its primary listing. The Committee may decide to declare a different stock exchange the “Exchange” for trading reasons, even if the company is only listed there via a Stock Substitute.

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. For the period from October 13, 2006 to February 22, 2017, the Exchange Trading Day is any weekday other than Saturday or Sunday.

For Exchange Trading Day t , **“Exchange Trading Day $t+1$ ”** is the Exchange Trading Day immediately succeeding Exchange Trading Day t , and **“Exchange Trading Day $t-1$ ”** is the Exchange Trading Day immediately preceding Exchange Trading Day t .

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

“Index Component” is each share currently included in the Index.

The **“Index Currency”** is USD.

“Market Capitalization” is with regard to each of the shares in the Solactive Global Health Services & Technology, Americas Index NTR Universe on a Selection Day or Adjustment Day the value published on Factset as the Market Capitalization for this day.

As at the date of this document, Market Capitalization at on day t is defined as the value of a company, and is calculated by multiplying the total number of shares outstanding of the company on day t by its closing price on date t .

“Sector” means the sector classification as provided by FactSet under the field “FG_FACTSET_ECONOMY”.

“Selection Day” is the last Exchange Trading Day of March, June, September and December.

“Start Date” is the first Exchange Trading Day in which the Index is being calculated. October 13, 2006.

“Stock Substitute” includes in particular American Depositary Receipts (ADR) and Global Depositary Receipts (GDR).

With regard to an Index component (subject to the provisions given above under “Extraordinary Events”) the **“Trading Price”** in respect of an Exchange Trading Day is the closing price on this Exchange Trading Day determined in accordance with the Exchange regulations. If the Exchange has no closing price for an Index Component, the Index Calculator shall determine the Trading Price and the time of the quote for the share in question in a manner that appears reasonable to him.

5 Appendix

5.1 Contact data

Information regarding the Index concept

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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. 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 Index and the method applied to calculate the Index, 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.